CONTRACT

FOR

RADIOS AND RADIO EQUIPMENT

CONTRACT No: 1350-12734

APPROVED BY THE BOARD OF
COOK COUNTY COMMISSIONERS

JUN 19 2013

COM_____

BETWEEN

COOK COUNTY GOVERNMENT
Department of Homeland Security and Emergency Management

AND

Motorola Solutions, Inc.
(Based on Northwest Central 911 System Contract No. 10-17184/LF/CMB)

Toni Preckwinkle
Cook County Board President

Shannon E. Andrews
Chief Procurement Officer

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CONTRACT

This Contract is made and entered into as of June 24, 2013 (**"Effective Date"**) by and between the County of Cook, a public body corporate of the State of Illinois, on behalf of The Department of Homeland Security and Emergency Management hereinafter referred to as (**"County"**) and Motorola, Inc., with an office located at 1301 E. Algonquin Rd., SH5, Schaumburg, IL 60196, a corporation authorized to do business in the State of Illinois hereinafter referred to as (**"Contractor"**). The County and Contractor may hereinafter be referred to as (**"Parties"**).

BACKGROUND

WHEREAS, the County, pursuant to Section 34-140 of the Cook County Procurement Code (the "Reference Contract Ordinance") states: "If a governmental agency has awarded a contract through a competitive method for the same or similar supplies, equipment, goods or services as that sought by the County, the Procurement may be made from that vendor at a price or rate at least as favorable as that obtained by that government agency without utilizing a competitive procurement method set forth in this Procurement Code;" and

WHEREAS, the Northwest Central 911 System solicited a Request for Quotation for APCO Project 25 Subscriber Units ('RFQ") on June 21, 2011 for the purchase of Radio Subscriber Units for use on the System; and

WHEREAS, the Northwest Central 911 System amended contract on December 20, 2011 to add similar products and services; and

WHEREAS, the County wishes to leverage the procurement efforts of the Northwest Central 911 System; and

WHEREAS, The Department of Homeland Security and Emergency Management desires certain specific and similar goods of the Contractor; and

WHEREAS, the Contractor agrees to provide the County Radios and Radio Equipment, incorporated as Exhibit 1; and

WHEREAS, the Contractor warrants that it is ready, willing and able to supply the goods set forth in Exhibit 1, County Statement of Work, all on pricing and payment terms equivalent to or more favorable to the County than those contained in the Northwest Central 911 System Contract as set forth in Exhibit 2, Schedule of Compensation, and incorporated herein by reference; and

WHEREAS, the County and the Contractor agree to the Terms and Conditions as stated

in the Northwest Central 911 System Contract, all as may be applicable to the County; and

WHEREAS, the County's General Conditions are incorporated herein by reference attached hereto as Exhibit 4. Notwithstanding such incorporation, none of the terms set forth in Exhibit 3, Northwest Central 911 System Contract, which conflict with the express terms of this Contract or its General Conditions shall be deemed or construed to supersede the terms of this Contract or its General Conditions.

WHEREAS, this Contract shall be effective through **December 31, 2014** after proper execution by the County; and

WHEREAS, payment shall be as follows:

In no case shall such charges exceed the amount of $5,000,000.00. Invoices in triplicate on County Invoice Form 29A shall be submitted by the Contractor to the Using Department when requesting payment. The County shall have the right to examine the books of the Contractor for the purpose of auditing the same with reference to all charges made to the County.

In the event the Contractor receives payment under the Contract, reimbursement for which is later disallowed by the County, the Contractor shall promptly refund the disallowed amount to the County on request, or at the County's option, the County may credit the amount disallowed from the next payment due or to become due to the Contractor under any contract with the County; and

WHEREAS, other County Offices, Departments, and Agencies may utilize this Contract for specific contracted procurement efforts, as may be applicable via future modifications to this Contract; and

NOW, THEREFORE, in consideration of the mutual promises and covenants herein contained, the sufficiency of which is acknowledged and agreed to by the Parties, Contractor and County, and the information set forth is incorporated herein by reference.

INCORPORATION OF BACKGROUND INFORMATION

The Background Information set forth above is incorporated and made a part of this Contract by reference.

INCORPORATION OF EXHIBITS

The following Exhibits, hereto attached, are made a part of this Contract:

Exhibit 1	Cook County Statement of Work
Exhibit 2	Cook County Schedule of Compensation (Line Item Price Proposal)
Exhibit 3	Northwest Central 911 System Contract No. 10-17184/LF/CMB
Exhibit 4	Cook County General Conditions
Exhibit 5	Evidence of Insurance

EXHIBIT 1

County Statement of Work

ASTRO® Digital APX 3000™ Portable Radio

700/800 MHz Band

P25 Phase 2 Single Band Capable Radio

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749) OR HARDWARE KEY (QA01648) OR WACN KEY (QA02018) to be ordered to operate/program on a trunking system. IF QA01648-HARDWARE KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error.******

Ship Card

Features

All ASTRO Digital APX 3000 models include the following features:

- (1) - APX3000 Transceiver
- (2) - Ultra Slim Impres Li-Ion 1250mAh Batteries
- (1) - Ultra Slim Carry Holster
- (1) - 3-Wire Surveillance Kit (Beige - PMLN5112A)
- (1) - GPS Whip Antenna (Frequency Dependent)
- ADP Privacy - ships standard with Single Key
- On/Off Switch
- 2 Programmable Buttons (1 Top & 1 Side)
- Conventional Operation (H35)
- ASTRO Digital Operation (Q806)
- Integrated Bluetooth Operation (QA00583)
- Multicast Voting (Q387)
- Programmable Voice Announcements
- Man Down Hardware Capable*
- Integrated GPS Hardware Capable*
- IP67 ships standard with radio

*** Must purchase Software to ENABLE. (GPS – QA00782, Man Down – QA01843)**

All ASTRO Digital APX 3000 Portables are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the current RF capabilities of the radio)

http://ecat.comm.mot.com/ecat/pricebooks/dup/ASK.htm

General Information

The ASTRO Digital APX 3000 Portable Line offers ONE radio hardware model:

Hardware Model	Modes	Alphanumeric Display Lines/Characters	Keypad	Navigation Pad
ASTRO APX 3000 No Display	512	No	No	No

Operating Modes

ASTRO Digital APX 3000 Radio Models are capable of operating in four different voice communication modes:

- Normal Analog (clear voice)
- 3.6KB ASTRO Digital (both clear and coded voice)
- 9.6 KB ASTRO 25 Digital (both Clear and Coded voice)
- 9.6KB 12.5kHz 2 slot digital TDMA (both clear and coded voice).
- Will be capable of APCO25 Phase 2 functionality in future software releases.

TDMA

FDMA (Frequency Division Multiple Access) is a proven technology that is widely used today in radio systems and is part of APCO 25 Project 25 Phase 1 standard. FDMA carries one call per channel. TDMA (Time Division Multiple Access) will be part of P25 Phase 2 standard and provides double the voice capacity as 2 calls can share 1 channel. Customers can add more users to their systems without the need of additional frequencies or infrastructure. The APX radios support both P25 Phase 1 and TDMA technologies seamlessly. Using Motorola's unique Dynamic Dual Mode (DDM) capability, the radios dynamically switch between FDMA and TDMA without the user having to change channels. This provides interoperability on demand with existing and future networks.

FLASHport AFTERMARKET UPGRADES

The ASTRO Digital APX 3000 Portable Series Radios are part of the FLASHport Program. This means that ASTRO Digital APX 3000 hardware models can be loaded with different software packages that provide the features and functionalities that our customers require.

System Enhancement Options can be loaded at the time of radio purchase or at a later date through the use of software field upgrades (a USB cable is required for all software upgrades.) The ASTRO Digital APX 3000 portable can be upgraded electronically in the field with new features in the current system or to new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

Ordering Requirements

Ordering procedure is as follows...

Steps	Required Options	Comments
1	**APX 3000 Main Model**	APX Digital Portable Radio- a. H59UCD9PW4AN (7/800 MHz)
2	**Operation Mode**	a. QA02591: SOFTWARE TRUNKING 9800 BAUD, 3600 BAUD, AND TDMA b. QA02592: SOFTWARE TRUNKING 9600 BAUD AND 3800 BAUD c. QA02756: SOFTWARE TRUNKING 9600 BAUD OR 3600 BAUD d. QA02593: SOFTWARE P25 CONVENTIONAL
3	**System Enhancement Software**	

1. **Order the APX 3000 Portable Series as the main line item.**

- **Each hardware model MUST be ordered with one operation mode.**
- **Default batteries are Lilon 1250mAh (-20°c) - Quantity 2**
- **Default carry holster for Ultra Slim 1250 mAh batteries only**
- **Default Antenna is the single appropriate antenna for your RF configuration.**

2. **Select any other system enhancement options you desire.**

- **Note - APX Radio ships with 12 month standard warranty.**

Common Software Features Supported By

H38 "SmartZone"				
	"Analog Operation"(Q241/H38)	"ASTRO Digital"(Q806/H38)	"ASTRO Digital"(H38/Q806/Q361)	"TDMA"(QA00580AA)
	Non-Project 25	Non-Project 25	Project 25	

	(3600 Baud)	(3600 Baud)	(9600 Baud)	TDMA OPERATION
RADIO WIDE FEATURES				
Maximum Modes				
ASTRO Digital APX 3000 No Display (Display with DRSM ONLY)	512	512	512	512
Analog and Digital Operation	Yes	Yes	Yes	Yes
6.25/12.5 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable	No	Yes (Digital Only)	Yes (Digital Only)	Yes (Digital Only)
One Touch Operation	Yes	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes	Yes
Surveillance Mode	Yes	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes	Yes
Radio Lock	Yes	Yes	Yes	Yes
Smart Battery	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified above.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
DTMF Signaling	Future	Future	Future	Future
Quick-Call Signaling	Future	Future	Future	Future
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Conventional Interoperable Features when used in the ASTRO Digital CAI Mode (Q806).				
Unaddressed Voice Call (Dispatch Call)	Yes	Yes	Yes	Yes
Talk Group Call	Yes	Yes	Yes	Yes
Group Call Alert™	Yes	Yes	Yes	Yes
Talk Group Identification (TGID)	Yes	Yes	Yes	Yes
Selective Call (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
PTT ID (Individual Identification)	MDC-1200 Only	Yes	Yes	Yes
Call Alert Encode/Decode	MDC-1200 Only	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	MDC-1200 Only	Yes	Yes	Yes
Telephone Interconnect	Yes	Yes	Yes	Yes
Manual Phone Number Entry	Dual Display Only	Dual Display Only	Dual Display Only	Dual Display Only
Selective Radio Inhibit	MDC-1200 Only	Yes	Yes	Yes
Radio Check	MDC-1200 Only	Yes	Yes	Yes
Status/Message	MDC-1200 Only	Yes	Yes	Yes
Trunking Type II Only Features				
Maximum Number of Trunked Systems-20	Yes	Yes	Yes	Yes
Talkgroup Calls	Yes	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes	Yes
Analog/Digital Dual Mode Scan	No	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes	Yes

Telephone Interconnect Encode/Decode	Yes	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only	Status Only
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes	Yes
Remote Monitor/Radio Trace	Yes	Yes	Yes	Yes
Reprogram Request	Yes	Yes	Yes	Yes

H38 "SmartZone"				
	"Analog Operation" (Q241)	"ASTRO Digital" (Q806)	"ASTRO Digital" (H37/Q806/Q361)	"TDMA" (QA00580AA)
		Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	Project 25 (TDMA Operation)
Trunking Type II Only Features				
Voice on Control	-	-	-	-
SmartZone Automatic Site Registration	Yes	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes	Yes
SmartZone Preferred Site	Yes	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the APX 3000 portable series. Separation of frequencies can be as wide as the allowable band per radio model with no degradation of any performance specifications. If an incorrect antenna is used, degraded performance may be experienced.

PROJECT 25 ENCRYPTION

The mode of operation is programmed on a channel-by-channel basis. With the coded/clear switch set to the clear mode, the ASTRO Digital APX3000 radio is capable of transmitting clear analog voice or clear (unencrypted) ASTRO Digital voice, depending on the channel programming. With the coded/clear switch set to the coded mode, the ASTRO Digital APX 3000 radio will transmit ASTRO Digital encryption depending on the channel programming. ASTRO Digital encryption provides secure communications. ASTRO Digital Encryption (operation in encrypted mode while also operation in 3.6KB or 9.6KB and TDMA ASTRO mode) is capable of XL type encryptions; ASTRO Digital Encryptions does not operate with non-XL encryptions.

An encryption option is not required for either clear analog operation or clear ASTRO Digital operation. Encryption can be ordered with the ASTRO Digital APX 3000 radio either as a factory installed option or separate from the radio for later field installation. ASTRO Digital APX 3000 radio functions include selected ASTRO digital signaling and digital speech coding.

When ordering any of the Encryption Algorithms:

- **The DES-OFB and AES encryption algorithms offered are compliant with digital Project 25 standards and does not support analog encryption operation.**
- **Requires the ASTRO Digital CAI (Q806) to operate the DES-OFB and AES encryption.**

When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

- **Encryption Algorithms can be ordered later via Flash Port.**

FIPS 140-2 Compliance

Encryption Modules equipped with AES are FIPS 140-2 compliant. Details regarding the certification, and copies of the relevant certificates, can be obtained on the NIST website at: http://csrc.nist.gov/groups/STM/cmvp/validation.html.

Further information regarding FIPS 140-2 certification may be found using the following link - FIPS 140-2 Crypto Module Validation Program (CMVP) http://csrc.nist.gov/groups/STM/cmvp/index.html

FM INFORMATION

APX 3000 Portable Radio when properly equipped with option QA00582 are Factory Mutual (FM/CSA) Approved as intrinsically safe for use in Div 1, Class I , Groups C,D, Class II groups E, F, G, Class III Div 2, Class I A, B,C,D.

ASTRO Text Messaging Service

ASTRO Text Messaging Service will NOT be available on APX 3000 Portable radios.

Outdoor Personnel Location Global Positioning Satellite (GPS) Feature

The personnel outdoor location tracking GPS feature enables a dispatcher the ability to locate on-foot patrols and out of the vehicle officers who are involved in life threatening situations. The radio user's GPS position information is sent over the ASTRO 25 Integrated Voice & Data (IV&D) network and is delivered to the dispatch operator using a third party mapping display application at the dispatch center (Mapping Application is not yet available through Motorola at this time, however an Application Developers Tool Kit is available for 3rd party vendors to use to modify existing applications. See link below for more details.)

During normal operation the radio battery capacity will be reduced by 10% to 16%.

In order to obtain an initial GPS fix position, the radio must be located in an open sky, outdoor environment with no barriers that could affect the signal around you or above you. During this initial fix, the radio should NOT be worn on the body as this may affect the process of acquiring signal and/or add additional time to first fix.

NOTE LIMITATIONS OF USE:

GPS works best in an open sky (clear view of the sky with no obstructions) environment. Due to the limitations of the technology, there are certain situations which prevent GPS coverage. These situations include but are not limited to:

- **Underground locations (tunnels, subways, etc.)**
- **Inside of buildings, elevators, parking garages, trains, other covered vehicles, etc.**
- **Under metal or concrete roof structures**
- **Urban canyons (between tall buildings or under dense tree coverage)**

*****GPS Performance may be degraded when the radio is worn against the body and/or against the body within a vehicle.**

Due to the limitations mentioned above, GPS should only be utilized as a method to assist the user with location information but not as a means for mission critical communication. Therefore, in any emergency situation, the location should always be verbally reported to the dispatcher.

For further information regarding System Requirements, go to the location solutions price pages at:
http://ecat.comm.mot.com/ecat/pricebooks/dup/ALOCATION.htm

Ordering GPS for APX 6000 Portable Requires:

- **Enable Internal GPS Operation (QA00782)**
- **Packet Data Interface (Q947)**

SELF-QUIETING SPURS	
Models	**Frequencies**
700 MHz	767.95, 772.8
800 MHz	856.8, 859.2, 860.15, 863.025

CPS INFORMATION

******Please note that a NEW version of CPS (RVN5224) is required for initial customer orders for this product. This new version of CPS is required for the APX radio shipments. ******

FCC Information

Band/Model	Power Output	Transmitter Certification	Emissions	Applicable Rules
700/800 (764-870MHz)	700 - 1 to 2.5W 800 - 1 to 3W	AZ489FT5863	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 20K0F1E	90

Ordering Guide

Fleet Management Ordering Guide

APX Family Brochure

Spec Sheet

RSA Comprehensive

RSA

Portable Accessories Catalog

Section A: Required Main Model and Options

For standard Radio Operation Steps 1 - 6

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

1: Main Model *(Must Select One)*

Description	Nomenclature	APC	Price
APX COVERT 7/800 MHZ MODEL 1 PORTABLE	H59UCD9PW4 N	536	$2,200.00

2: Operation Mode *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: SOFTWARE TRUNKING 9600 BAUD, 3600 BAUD, AND TDMA (Includes H38BZ: SmartZone Oper., Q361AY: P25 9600 Baud Trunking, Q806BV: ASTRO Digital CAI Oper., Q173BM: SmartZone OmniLink (Non-P25), QA00580AH: TMDA Oper., QA00583AJ: BlueTooth Oper. & Q367BF Multicast Voting)	QA02591	536	$2,765.00
ENH: ENH: SOFTWARE TRUNKING 9600 BAUD AND 3600 BAUD (Includes H38BZ: SmartZone Oper., Q361AY: P25 9600 Baud Trunking, Q806BV: ASTRO Digital CAI Oper., Q173BM: SmartZone OmniLink (Non-P25), QA00583AJ: BlueTooth Oper. & Q367BF Multicast Voting)	QA02592	536	$2,356.00
ENH: SOFTWARE TRUNKING 9600 BAUD OR 3600 BAUD Includes H38BZ: SmartZone Oper., QQ02611AF: P25 9600 or 3600 Baud Trunking, Q806BV: ASTRO Digital CAI Oper., Q173BM: SmartZone OmniLink (Non-P25), QA00583AJ: BlueTooth Oper. & Q367BF Multicast Voting)	QA02758	536	$1,856.00
ENH: ENH: SOFTWARE P25 CONVENTIONAL (Includes H35CA: Conventional Oper., Q806BV: ASTRO Digital CAI Oper., QA00583AJ: BlueTooth Oper. & Q367BF Multicast Voting)	QA02593	536	$1,165.00

3: System Enhancement Software *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: ADVANCED SYSTEM KEY - HARDWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purcheased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4048 to be purchased.	QA01648	655	$5.00
ADD: ADVANCED SYSTEM KEY - SOFTWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio opareting in trunking.	QA01749	655	$0.00
ADD: ADVANCED WACN KEY SUPP DATA A SOFTWARE or HAROWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio opereting in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4048 to be purcheased.	QA02018	655	$5.00

4: System Enhancement Options *(Not Required)*

Description	Nomenclature	APC	Price
ENH: INTERNAL ACTIVITATION AND GPS BASIC FUNCTIONALITY Must have IV&O (Q947) enabled.	QA00782	536	$100.00

ADD: PROGRAMMING OVER P25 (OTAP) Compatible with P25 Trunking and Conventional Operation. POP25 requires AES encryption for ASTRO Conventional operation. Must have IV&D (Q947) enabled. To do in field POP25 programming must use Advanced System Key (DVN4046A)	G996	536	$100.00
ENH: TRUNKED RADIO TRACE/ REMOTE MONITOR Requires Q806 and either H38, or H35 enabled.	H43	536	$75.00
ENH: ONE TOUCH/STATUS MSG	H46	536	$75.00
ADD: RADIO PACKET DATA This option is only capable of being used on P25 Digital Conventional and 9600 Trunking Systems. This option is required for IV & D operation.	Q947	536	$200.00
ADD: APX 3000 Radio Authentication Requires P25 Trunking (Q361)	QA01767	536	$100.00
ENH: ENHANCEMENT LEVEL 1 Please reference the Enhancement Level Reference Guide for more details. This option allows for a few parameters (ZONES, CHANNELS, SYSTEMS PERSONALITIES, UCL ENTRIES, VOICE ANNOUNCMENT, ENCRYPTION KEYS) on the entry tier to go to a mid tier	QA01770	536	$200.00
ADD: ACCELEROMETER / MAN-DOWN	QA01843	426	$150.00

5: Algorithm Option *(Not Required)*

Description	Nomenclature	APC	Price
ENH: DVP-XL ENCRYPTION	H797	536	$487.00
ADD: TACTICAL REKEY WITH MULTIKEY Must order IV&D (Q947). Incompatible with MDC/ASTRO P25 OTAR with Multikey	H04	536	$350.00
ENH: MULTIKEY	H869	536	$330.00
ADD: AES/DES,DES-XL,DES-OFB	Q15	536	$799.00
ENH: MDC & ASTRO P25 OTAR W/ MULTIKEY Incompatible with the H04 option since Tactical OTAR is included with the Q498 option. Tactical OTAR can only be utilized when IV&D is purchased.	Q498	536	$740.00
ENH: DES,DES-XL,DES-OFB ENCRYPTION	Q825	536	$599.00
ENH: AES ENCRYPTION	Q629	536	$475.00

6: Antenna

7/800

The APX3000 7/800 MHz radio comes standard with QA00788 whip antenna, but can be exchanged for one of the antennas below)

Description	Nomenclature	APC	Price
ALT: 1/4- WAVE 7/800 STUBBY GPS ANTENNA (NAR6595A)	H122	536	$24.00
ADD: 7/800 MHz FLEXIBLE ANTENNA Includes Spacer	QA03192	536	$40.00

7: Battery

(The APX3000 comes with (2) - 1250mAh batteries. You can exchange the (2) batteries and holster for (1) of the batteries below that come standard with the 2.0 inch belt clip)

Description	Nomenclature	APC	Price
SLIM LI-ION IMPRES 1900MAH (NNTN8128)	QA03163	536	$0.00
ALT: IMPRES LIION 2300MAH FM (NNTN8129)	QA00582	536	$110.00
ALT: IMPRES LI-ION 2300MAH (PMNN4424)	QA02749	536	$85.00

8: Belt Clip (s)

(The APX3000 comes with (2) - 1250mAh batteries. If you exchange the (2) batteries and holster for (1) of the batteries above that come standard with the 2.0 inch belt clip, you can exchange the 2.0 inch belt clip for the 2.5 inch belt clip below)

Description	Nomenclature	APC	Price
ADD: 2.5 INCH BELT CLIP	Q698	536	$12.00

9: Cable (s)

Description	Nomenclature	APC	Price
ADD: APX PROGRAMMING CABLE PMKN4013A-GCAI cable at radio interface and USB connection at other end for computer programming. Please note that the PMKN4012A is NOT compatible with the APX 3000	Q157	536	$75.00

10: Wired/Wireless Accessory Bundle Packages

Description	Nomenclature	APC	Price
ADD: MCW ACCESSORY BUNDLE PACK 1	QA03276	742	$500.00
Mission Critical Wireless Covert Audio Accessory Kit (NNTN8296), one Mission Critical Wireless push-to-talk pod (NNTN2571) and one Remote Control Unit (PMLN6233)			
ADD: MCW ACCESSORY BUNDLE PACK 2	QA03277	742	$400.00
Mission Critical Wireless Covert Audio Accessory Kit (NNTN8296) and two Mission Critical Wireless push-to-talk pods (NNTN2571) to power the earbud headphones			
ADD: MCW ACCESSORY BUNDLE PACK 3	QA03278	742	$289.00
Mission Critical Wireless Covert Audio Accessory Kit (NNTN8296) and Mission Critical Wireless push-to-talk pod (NNTN2571) to power the earbud headphones			
IMPRES 3-WIRE SURVEILLANCE KIT - BLACK	QA03178	536	$0.00

11: Service Options

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	Q884	185	$44.00
Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	H885BK	185	$84.00
Provides 2 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: THREE (3) YEAR EXPRESS SERVICE PLUS	H886	185	$108.00
Express Service Plus Plan (ESP) 3 Year - Provides for 3 years of extended hardware repair coverage beginning after the standard warranty period. Repairs will be made at the Radio Support Center. The customer pays for inbound shipping. No discounts are allowed on this option.			
ENH:4 YEAR REPAIR SERVICE ADVANTAGE	Q887	185	$162.00
Provides 4 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ADD: 3 YR RSA COMPREHENSIVE	HA00022AB	185	$228.00
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: CANADA 3 YR ENCR EXT WARR	HA00048	386	$200.00
Upgrades the standard warranty period to a full three (3) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.			
ENH: CANADA 5 YR ENCR EXT WARR	HA00049	386	$244.00
Upgrades the standard warranty period to a full five (5) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.			
ADD: LACR MUNICIPALITY WARRANTY	QA00681	206	$0.00
ADD: LACR 2 YR REPAIR SERVICE ADVANTAGE	H885	206	$84.00
H885 option is MANDATORY to be selected for every order. Provides for 3 year of hardware repair coverage beginning from the date of shipment. Repairs will be made only at the designated Motorola authorized repair depot. Local services are not included. Customer will pay the inbound shipping charges. Motorola will pay for the outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			

12: Manual

Description	Nomenclature	APC	Price
DEL: USER GUIDE CD	QA02728	536	$0.00
This deletes the user guide CD that ships standard with the radio.			
ADD: DATA LINK MANAGER APP CD-PORTABLES	QA00205	655	$0.00
Option provides the NVN5424 Data CD. Please order this option if you would like the Data CD, and are unable to obtain it through other sources such as MOL.			

13: Test Results

Description	Nomenclature	APC	Price
ADD: TEST RESULTS / RATED AUDIO PRINTOUT	H799	536	$0.00

Section D: Aftermarket Accessories

Adapters

Description	Nomenclature	APC	Price
APX SURVEILLANCE KEYLOAD A	NNTN7869A	742	$65.00

Antenna

Description	Nomenclature	APC	Price
APX 7000 700/800- GPS ANTENNA	NAF5085A	555	$45.00

Batteries

Description	Nomenclature	APC	Price
BATT IMP STD LI ION 1900M 2000T	NNTN8128AR	453	$100.00
BATT IMP FM LI ION 2300M2350T	NNTN8129AR	453	$130.00
BATT IMP LI ION 2300M 2350T	PMNN4424AR	453	$115.00

Belt Clip(s) / Holsters

Description	Nomenclature	APC	Price
BELT CLIP 2"	PMLN4651A	271	$11.00
2.5-INCH BELT CLIP	PMLN7008A	271	$12.00

Bluetooth Mission Critical Wireless

Description	Nomenclature	APC	Price
EARPIECE W/9.5" CABLE	NTN2575A	742	$151.00
EARPIECE W/12" CABLE FM Certified; MCW BT; Requires QA00583 to be ordered in the APX radio	NTN2572A	742	$151.00
ASSEMBLY,ACCESSORY,WIRELESS ACCY KIT, NFP, 9.5" CABLE FM Certified MCW BT Requires QA00583 to be ordered in the APX radio	NTN2573B	742	$295.00
WIRELESS 2.0 COMMPORT IC MODULE	NTN2571B	742	$139.00
ASSEMBLY ACCESSORY WIRELESS ACCY KIT NFP 12 CABLE	NTN2570C	742	$295.00
1-WIRE EARBUD,29CM CORD,BLACK	NNTN8294A	742	$40.00
1-WIRE EARBUD,116CM CORD,BLACK	NNTN8295A	742	$40.00
ACCY,KIT,EAR PIECE,2W SHORT CORD,BL	NNTN8296A	742	$180.00
MC WIRELESS REMOTE CONTROL KEYFOB & US CHARGER	NNTN8442A	742	$350.00

Bluetooth, Mission Critical Wireless Replacement Parts

Description	Nomenclature	APC	Price
RECEIVE-ONLY FOAM EARBUD WITH 3.5MM PLUG - INTRINSICALLY SAFE (FM) When used with MTP3000 models, to be used with remote speaker microphones PMMN4078A, PMMN4072A and PMMN4074A	AARLN4885	742	$25.00
D-SHELL RX-ONLY EARPIECE(3.5MM)	PMLN4620A	742	$19.00
BONE CONDUCTION EAR MIC IMPRES Ear Microphone System with Programmable Button and Large Push-to-Talk: Lightweight earpiece that picks up sound through bone conduction In digital mode, bone conduction can have a bassier (muffled) sound quality depending on the user	PMLN5653A	742	$399.00
RECEIVE ONLY EARPIECE W/TRANSLUCENT TUBE When used with MTP3000 models, to be used with remote speaker microphones PMMN4078A, PMMN4072A and PMMN4074A	RLN4941A	742	$58.00
EAR RCVR W/COIL CBL&3.5MM PLUG	WADN4190B	742	$43.00

Headsets

Description	Nomenclature	APC	Price
IMPRES TEMPLE TRANSDUCER FM Certified	PMLN5101A	742	$228.00
HEAVY DUTY HEADSET PMLN5275C	PMLN5275C	742	$679.00
CORE L/W HEADSET FM Certified	RMN5058A	742	$99.00
RX/TX BOOMLESS TEMPLE TRANSDUCER Temple Transducer Headset will ONLY work with: Microphone Compatibility HMN4101, HMN4103, HMN4104.	RMN5116A	742	$248.00

Charger

Description	Nomenclature	APC	Price
MOTOTRBO TRAVEL CHARGER	RLN6433A	785	$95.00
110 VAC 50/60 HZ US IMPRES SUC	WPLN4232A	785	$63.00

Charger Inserts

Description	Nomenclature	APC	Price
INSERT, UNIVERSAL SUC Only compatible with XTS Single Unit Chargers	NNTN8169A	453	$45.00
INSERT, UNIVERSAL MUC Only compatible with XTS Multi Unit Chargers	NNTN8170A	453	$207.00

CPS / Programming Cables

NEO PORT PROG CABLE APX DMR PORT PROG CABLE	PMKN4012B	037	$75.00
PROGRAMMING, TEST & ALIGNMENT CABLE	PMKN4013C	037	$92.00

Remote Speaker Microphones - RSM's

Description	Nomenclature	APC	Price
IMPRES RSM DSPLY W JACK, W CHNL	HMN4104B	372	$375.00
APX7000 IMPRES RSM, NOISE CANC. EMERGENCY BUTTON 3.5MM JACK IP54	PMMN4062A	795	$107.00
APX IMPRES RSM W/VOL, IP57	PMMN4065A	795	$97.00
IMPRES RSM, 3.5MM AUDIO JACK	PMMN4069A	795	$110.00

Surveillance Kits, Wired

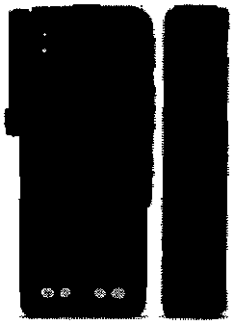
Description	Nomenclature	APC	Price
IMPRES 3 WR W/TRANS TUBE BLK Kit with date code 0848 and beyond are compatible with APX	PMLN5111A	742	$173.00
IMPRES 3 WR W/TRANS TUBE BEIGE Kit with date code 0848 and beyond are compatible with APX	PMLN5112A	742	$173.00
SURVEILLANCE KITS CORE 1 WIRE BLK	RLN5878A	742	$40.00
SURVEILLANCE KIT 1 WIRE - BGE	RLN5879A	742	$40.00
IMPRES 2 WIRE W/TRANS TUBE BLK	RLN5882A	742	$122.00
IMPRES 2 WIRE W/TRANS TUBE BEIGE	RLN5883A	742	$122.00
SURVEILLANCE LOW NOISE KIT	RLN5886A	742	$20.00
IMPRES 3 WIRE SURVEILLANCE-BLACK	PMLN5097A	742	$165.00
IMPRES 3 WIRE SURVEILLANCE-BEIGE	PMLN5106A	742	$165.00

Data Compiled 16-May-2013 using DUP and all prices in USD

ASTRO® Digital APX 3000™ Portable Radio

UHF R1 Band

P25 Phase 2 Single Band Capable Radio



******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749) OR HARDWARE KEY (QA01648) OR WACN KEY (QA02018) to be ordered to operate/program on a trunking system. IF QA01648-HARDWARE KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error.******

Ship Card

Features

All ASTRO Digital APX 3000 models include the following features:

- (1) - APX3000 Transceiver
- (2) - Ultra Slim Impres Li-Ion 1250mAh Batteries
- (1) - Ultra Slim Carry Holster
- (1) - 3-Wire Surveillance Kit (Beige - PMLN5112A)
- (1) - GPS Whip Antenna (Frequency Dependent)
- ADP Privacy - ships standard with Single Key
- On/Off Switch
- 2 Programmable Buttons (1 Top & 1 Side)
- Conventional Operation (H35)
- ASTRO Digital Operation (Q806)
- Integrated Bluetooth Operation (QA00583)
- Multicast Voting (Q387)
- Programmable Voice Announcements
- Man Down Hardware Capable*
- Integrated GPS Hardware Capable*
- IP67 ships standard with radio

*** Must purchase Software to ENABLE. (GPS – QA00782, Man Down – QA01843)**

All ASTRO Digital APX 3000 Portables are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the current RF capabilities of the radio)

http://ecat.comm.mot.com/ecat/pricebooks/dup/ASK.htm

General Information

The ASTRO Digital APX 3000 Portable Line offers ONE radio hardware model:

Hardware Model	Modes	Alphanumeric Display Lines/Characters	Keypad	Navigation Pad
ASTRO APX 3000 No Display	512	No	No	No

Operating Modes

ASTRO Digital APX 3000 Radio Models are capable of operating in four different voice communication modes:

- Normal Analog (clear voice)
- 3.6KB ASTRO Digital (both clear and coded voice)
- 9.6 KB ASTRO 25 Digital (both Clear and Coded voice)
- 9.6KB 12.5kHz 2 slot digital TDMA (both clear and coded voice).
- Will be capable of APCO25 Phase 2 functionality in future software releases.

TDMA

FDMA (Frequency Division Multiple Access) is a proven technology that is widely used today in radio systems and is part of APCO 25 Project 25 Phase 1 standard. FDMA carries one call per channel. TDMA (Time Division Multiple Access) will be part of P25 Phase 2 standard and provides double the voice capacity as 2 calls can share 1 channel. Customers can add more users to their systems without the need of additional frequencies or infrastructure. The APX radios support both P25 Phase 1 and TDMA technologies seamlessly. Using Motorola's unique Dynamic Dual Mode (DDM) capability, the radios dynamically switch between FDMA and TDMA without the user having to change channels. This provides interoperability on demand with existing and future networks.

FLASHport AFTERMARKET UPGRADES

The ASTRO Digital APX 3000 Portable Series Radios are part of the FLASHport Program. This means that ASTRO Digital APX 3000 hardware models can be loaded with different software packages that provide the features and functionalities that our customers require.

System Enhancement Options can be loaded at the time of radio purchase or at a later date through the use of software field upgrades (a USB cable is required for all software upgrades.) The ASTRO Digital APX 3000 portable can be upgraded electronically in the field with new features in the current system or to new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

Ordering Requirements

Ordering procedure is as follows...

Steps	Required Options	Comments
1	**APX 3000 Main Model**	APX Digital Portable Radio- a. H59QDD9PW4AN (UHF Range 1)
2	**Operation Mode**	a. QA02591: SOFTWARE TRUNKING 9600 BAUD, 3600 BAUD, AND TDMA b. QA02592: SOFTWARE TRUNKING 9600 BAUD AND 3600 BAUD c. QA02756: SOFTWARE TRUNKING 9600 BAUD OR 3600 BAUD d. QA02593: SOFTWARE P25 CONVENTIONAL
3	**System Enhancement Software**	

1. **Order the APX 3000 Portable Series as the main line item.**

- **Each hardware model MUST be ordered with one operation mode.**
- **Default batteries are LiIon 1250mAh (-20°c) - Quantity 2**
- **Default carry holster for Ultra Slim 1250 mAh batteries only**
- **Default Antenna is the single appropriate antenna for your RF configuration.**

2. **Select any other system enhancement options you desire.**

- **Note - APX Radio ships with 12 month standard warranty.**

Common Software Features Supported By

H38 "SmartZone"				
	"Analog Operation"(Q241/H38)	"ASTRO Digital"(Q806/H38)	"ASTRO Digital"(H38/Q806/Q361)	"TDMA"(QA00580AA)
	Non-Project 25	Non-Project 25	Project 25	

	(3600 Baud)	(3600 Baud)	(9600 Baud)	TDMA OPERATION
RADIO WIDE FEATURES				
Maximum Modes				
ASTRO Digital APX 3000 No Display (Display with DRSM ONLY)	512	512	512	512
Analog and Digital Operation	Yes	Yes	Yes	Yes
6.25/12.5 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable	No	Yes (Digital Only)	Yes (Digital Only)	Yes (Digital Only)
One Touch Operation	Yes	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes	Yes
Surveillance Mode	Yes	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes	Yes
Radio Lock	Yes	Yes	Yes	Yes
Smart Battery	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified above.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
DTMF Signaling	Future	Future	Future	Future
Quick-Call Signaling	Future	Future	Future	Future
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Conventional Interoperable Features when used in the ASTRO Digital CAI Mode (Q806).				
Unaddressed Voice Call (Dispatch Call)	Yes	Yes	Yes	Yes
Talk Group Call	Yes	Yes	Yes	Yes
Group Call Alert™	Yes	Yes	Yes	Yes
Talk Group Identification (TGID)	Yes	Yes	Yes	Yes
Selective Call (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
PTT ID (Individual Identification)	MDC-1200 Only	Yes	Yes	Yes
Call Alert Encode/Decode	MDC-1200 Only	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	MDC-1200 Only	Yes	Yes	Yes
Telephone Interconnect	Yes	Yes	Yes	Yes
Manual Phone Number Entry	Dual Display Only	Dual Display Only	Dual Display Only	Dual Display Only
Selective Radio Inhibit	MDC-1200 Only	Yes	Yes	Yes
Radio Check	MDC-1200 Only	Yes	Yes	Yes
Status/Message	MDC-1200 Only	Yes	Yes	Yes
Trunking Type II Only Features				
Maximum Number of Trunked Systems-20	Yes	Yes	Yes	Yes
Talkgroup Calls	Yes	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes	Yes
Analog/Digital Dual Mode Scan	No	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes	Yes

Telephone Interconnect Encode/Decode	Yes	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only	Status Only
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes	Yes
Remote Monitor/Radio Trace	Yes	Yes	Yes	Yes
Reprogram Request	Yes	Yes	Yes	Yes

H38 "SmartZone"				
	"Analog Operation" (Q241)	"ASTRO Digital" (Q806)	"ASTRO Digital" (H37/Q806/Q361)	"TDMA" (QA00580AA)
		Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	Project 25 (TDMA Operation)
Trunking Type II Only Features				
Voice on Control	-	-	-	-
SmartZone Automatic Site Registration	Yes	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes	Yes
SmartZone Preferred Site	Yes	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum fraquency separation conditions that must be adhered to on the APX 3000 portable eeriee. Separation of frequencies can be as wida as the allowable band par radio model with no degradation of any performance specifications. If an incorrect antenna is used, degraded performance may be experienced.

PROJECT 25 ENCRYPTION

The mode of operation is programmed on a channel-by-channel basis. With the coded/clear switch set to the clear mode, the ASTRO Digital APX3000 radio is capable of transmitting clear analog voice or clear (unencrypted) ASTRO Digital voice, depending on the channel programming. With the coded/clear switch set to the coded mode, the ASTRO Digital APX 3000 radio will transmit ASTRO Digital encryption depending on the channel programming. ASTRO Digital encryption provides secure communications. ASTRO Digital Encryption (operation in encrypted mode while also operation in 3.6KB or 9.6KB and TDMA ASTRO mode) is capable of XL type encryptions; ASTRO Digitel Encryptions does not operate with non-XL encryptions.

An encryption option is not required for either clear analog operation or clear ASTRO Digital operation. Encryption can be ordered with the ASTRO Digital APX 3000 radio either as a factory installed option or separate from the radio for later field installation. ASTRO Digital APX 3000 radio functions include selected ASTRO digital signaling and digital speech coding.

When ordsring any of the Encryption Algorithms:

- **The DES-OFB and AES encryption algorithms offered are compliant with digital Project 25 standards and does not support analog encryption operation.**
- **Rsquires the ASTRO Digital CAI (Q808) to operate the DES-OFB and AES encryption.**

When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

- **Encryption Algorithms can be ordered later via Flash Port.**

FIPS 140-2 Compliance

Encryption Modules equipped with AES are FIPS 140-2 compliant. Details regarding the certification, and copies of ths relevant certificates, can be obtained on the NIST website at: http://csrc.nist.gov/groups/STM/cmvp/validation.html.

Further information regarding FIPS 140-2 certification may be found using the following link - FIPS 140-2 Crypto Module Validation Program (CMVP) http://csrc.nist.gov/groups/STM/cmvp/index.html

FM INFORMATION

APX 3000 Portable Radio when properly equipped with option QA00582 are Factory Mutual (FM/CSA) Approved as intrinsically safe for use in Div 1, Class I , Groups C,D, Class II groups E, F, G, Class III Div 2, Class I A, B,C,D.

ASTRO Text Messaging Service

ASTRO Text Messaging Service will NOT be available on APX 3000 Portable radios.

Outdoor Personnel Location Global Positioning Satellite (GPS) Feature

The personnel outdoor location tracking GPS feature enables a dispatcher the ability to locate on-foot patrols and out of the vehicle officers who are involved in life threatening situations. The radio user's GPS position information is sent over the ASTRO 25 Integrated Voice & Data (IV&D) network and is delivered to the dispatch operator using a third party mapping display application at the dispatch center (Mapping Application is not yet available through Motorola at this time, however an Application Developers Tool Kit is available for 3rd party vendors to use to modify existing applications. See link below for more details.)

During normal operation the radio battery capacity will be reduced by 10% to 16%.

In order to obtain an initial GPS fix position, the radio must be located in an open sky, outdoor environment with no barriers that could affect the signal around you or above you. During this initial fix, the radio should NOT be worn on the body as this may affect the process of acquiring signal and/or add additional time to first fix.

NOTE LIMITATIONS OF USE:

GPS works best in an open sky (clear view of the sky with no obstructions) environment. Due to the limitations of the technology, there are certain situations which prevent GPS coverage. These situations include but are not limited to:

- **Underground locations (tunnels, subways, etc.)**
- **Inside of buildings, elevators, parking garages, trains, other covered vehicles, etc.**
- **Under metal or concrete roof structures**
- **Urban canyons (between tall buildings or under dense tree coverage)**

*****GPS Performance may be degraded when the radio is worn against the body and/or against the body within a vehicle.**

Due to the limitations mentioned above, GPS should only be utilized as a method to aesist the user with location information but not ae a means for mission critical communication. Therefore, in any emergency situation, the location should always be verbally reported to the dispatcher.

For further information regarding System Requirements, go to the location solutions price pages at:
http://ecat.comm.mot.com/ecat/pricebooks/dup/ALOCATION.htm

Ordering GPS for APX 6000 Portable Requires:

- **Enable Internal GPS Operation (QA00782)**
- **Packet Data Interface (Q947)**

SELF-QUIETING SPURS	
Models	**Frequencies**
UHF Range 1	383.9750, 384.0850, 393.2125, 395.9750, 396.0875, 407.9750, 415.8375, 419.9750, 432.0000, 442.3600, 440.000, 454.7250

CPS INFORMATION

******Please note that a NEW version of CPS (RVN5224) is required for initial customer orders for this product. This new version of CPS is required for the APX radio shipments. ******

FCC Information

Band/Model	Power Output	Transmitter Certification	Emissions	Applicable Rules
UHF R1			11K0F3E, 16K0F3E, 8K10F1D,	

(380-470MHz)	1 to 5W	AZ489FT4911	8K10F1E, 8K10F1W, 20K0F1E	90

Ordering Guide

Fleet Management Ordering Guide

APX Family Brochure

Spec Sheet

RSA Comprehensive

RSA

Portable Accessories Catalog

Section A: Required Main Model and Options

For standard Radio Operation Steps 1 - 6

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

1: Main Model *(Must Select One)*

Description	Nomenclature	APC	Price
APX COVERT UHFR1 MHZ MODEL 1 PORTABLE	H59QDD9PW4 N	536	$2,200.00

2: Operation Mode *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: SOFTWARE TRUNKING 9600 BAUD, 3600 BAUD, AND TDMA (Includes H38BZ: SmartZone Oper., Q361AY: P25 9600 Baud Trunking, Q806BV: ASTRO Digital CAI Oper., Q173BM: SmartZone OmniLink (Non-P25), QA00580AH: TMDA Oper., QA00583AJ: BlueTooth Oper. & Q367BF Multicast Voting)	QA02591	536	$2,765.00
ENH: ENH: SOFTWARE TRUNKING 9600 BAUD AND 3600 BAUD (Includes H38BZ: SmartZone Oper., Q361AY: P25 9600 Baud Trunking, Q806BV: ASTRO Digital CAI Oper., Q173BM: SmartZone OmniLink (Non-P25), QA00583AJ: BlueTooth Oper. & Q367BF Multicast Voting)	QA02592	536	$2,356.00
ENH: SOFTWARE TRUNKING 9600 BAUD OR 3600 BAUD Includes H38BZ: SmartZone Oper., QQ02811AF: P25 9600 or 3600 Baud Trunking, Q806BV: ASTRO Digital CAI Oper., Q173BM: SmartZone OmniLink (Non-P25), QA00583AJ: BlueTooth Oper. & Q367BF Multicast Voting)	QA02756	536	$1,856.00
ENH: ENH: SOFTWARE P25 CONVENTIONAL (Includes H35CA: Conventional Oper., Q806BV: ASTRO Digital CAI Oper., QA00583AJ: BlueTooth Oper. & Q367BF Multicast Voting)	QA02593	536	$1,165.00

3: System Enhancement Software *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: ADVANCED SYSTEM KEY - HARDWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA01648	655	$5.00
ADD: ADVANCED SYSTEM KEY - SOFTWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking.	QA01749	655	$0.00
ADD: ADVANCED WACN KEY SUPP DATA A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA02018	655	$5.00

4: System Enhancement Options *(Not Required)*

Description	Nomenclature	APC	Price
ENH: INTERNAL ACTIVITATION AND GPS BASIC FUNCTIONALITY Must have IV&D (Q947) enabled.	QA00782	536	$100.00
ADD: PROGRAMMING OVER P25 (OTAP) Compatible with P25 Trunking and Conventional Operation. POP25 requires AES encryption for ASTRO Conventional operation. Must have IV&D (Q947) enabled. To do in field POP25 programming must use Advanced System Key (DVN4046A)	G996	536	$100.00
ENH: TRUNKED RADIO TRACE/ REMOTE MONITOR Requires Q808 and either H36, or H35 enabled.	H43	536	$75.00
ENH: ONE TOUCH/STATUS MSG	H46	536	$75.00
ADD: RADIO PACKET DATA This option is only capable of being used on P25 Digital Conventional and 9600 Trunking Systems. This option is required for IV & D operation.	Q947	536	$200.00
ADD: APX 3000 Radio Authentication Requires P25 Trunking (Q361)	QA01787	536	$100.00
ENH: ENHANCEMENT LEVEL 1 Please reference the Enhancement Level Reference Guide for more details. This option allows for a few parameters (ZONES, CHANNELS, SYSTEMS PERSONALITIES, UCL ENTRIES, VOICE ANNOUNCMENT, ENCRYPTION KEYS) on the entry tier to go to a mid tier	QA01770	536	$200.00
ADD: ACCELEROMETER / MAN-DOWN	QA01843	426	$150.00

5: Algorithm Option *(Not Required)*

Description	Nomenclature	APC	Price
ENH: DVP-XL ENCRYPTION	H797	536	$487.00
ADD: TACTICAL REKEY WITH MULTIKEY Must order IV&D (Q947). Incompatible with MDC/ASTRO P25 OTAR with Multikey	H04	536	$350.00
ENH: MULTIKEY	H869	536	$330.00
ADD: AES/DES,DES-XL,DES-OFB	Q15	536	$799.00
ENH: MDC & ASTRO P25 OTAR W/ MULTIKEY Incompatible with the H04 option since Tactical OTAR is included with the Q498 option. Tactical OTAR can only be utilized when IV&D is purchased.	Q498	536	$740.00
ENH: DES,DES-XL,DES-OFB ENCRYPTION	Q625	536	$599.00
ENH: AES ENCRYPTION	Q629	536	$475.00

6: Antenna

UHF Range 1

The APX3000 UHF R1 radio comes standard with QA01375 whip antenna, but can be exchanged for one of the antennas below)

Description	Nomenclature	APC	Price
ALT: UHFR2 GPS STUBBY ANTENNA (FAF5260)	QA02017	536	$55.00
ADD: UHF GPS FLEXIBLE ANTENNA Includes Spacer	QA03193	536	$40.00

7: Battery

(The APX3000 comes with (2) - 1250mAh batteries. You can exchange the (2) batteries and holster for (1) of the batteries below that come standard with the 2.0 inch belt clip)

Description	Nomenclature	APC	Price
SLIM LI-ION IMPRES 1900MAH (NNTN6128)	QA03163	536	$0.00
ALT: IMPRES LIION 2300MAH FM (NNTN6129)	QA00582	536	$110.00
ALT: IMPRES LI-ION 2300MAH (PMNN4424)	QA02749	536	$85.00

8: Belt Clip (s)

(The APX3000 comes with (2) - 1250mAh batteries. If you exchange the (2) batteries and holster for (1) of the batteries above that come standard with the 2.0 inch belt clip, you can exchange the 2.0 inch belt clip for the 2.5 inch belt clip below)

Description	Nomenclature	APC	Price
ADD: 2.5 INCH BELT CLIP	Q698	536	$12.00

9: Cable (s)

Description	Nomenclature	APC	Price
ADD: APX PROGRAMMING CABLE PMKN4013A-GCAI cable at radio interface end USB connection at other end for computer programming. Please note that the PMKN4012A is NOT compatible with the APX 3000	Q157	536	$75.00

10: Wired/Wireless Accessory Bundle Packages

Description	Nomenclature	APC	Price
ADD: MCW ACCESSORY BUNDLE PACK 1	QA03276	742	$500.00
Mission Critical Wireless Covert Audio Accessory Kit (NNTN8298), one Mission Critical Wireless push-to-talk pod (NNTN2571) and one Remote Control Unit (PMLN8233)			
ADD: MCW ACCESSORY BUNDLE PACK 2	QA03277	742	$400.00
Mission Critical Wireless Covert Audio Accessory Kit (NNTN8298) and two Mission Critical Wireless push-to-talk pods (NNTN2571) to power the earbud headphones			
ADD: MCW ACCESSORY BUNDLE PACK 3	QA03278	742	$289.00
Mission Critical Wireless Covert Audio Accessory Kit (NNTN8295) and Mission Critical Wireless push-to-talk pod (NNTN2571) to power the earbud headphones			
IMPRES 3-WIRE SURVEILLANCE KIT - BLACK	QA03178	536	$0.00

11: Service Options

Description	Nomanclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	Q884	185	$44.00
Provides 1 yeer of extended hardwere repair coverege beginning after the stenderd wemanty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	H885BK	185	$84.00
Provides 2 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: THREE (3) YEAR EXPRESS SERVICE PLUS	H886	185	$108.00
Express Service Plus Plan (ESP) 3 Year - Provides for 3 years of extended hardware repair coverage beginning after the standard warranty period. Repairs will be made at the Radio Support Center. The customer pays for inbound shipping. No discounts are allowed on this option.			
ENH:4 YEAR REPAIR SERVICE ADVANTAGE	Q887	185	$162.00
Provides 4 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ADD: 3 YR RSA COMPREHENSIVE	HA00022AB	185	$228.00
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: CANADA 3 YR ENCR EXT WARR	HA00048	386	$200.00
Upgrades the standard warranty period to a full three (3) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.			
ENH: CANADA 5 YR ENCR EXT WARR	HA00049	386	$244.00
Upgrades the standard warranty period to a full five (5) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.			
ADD: LACR MUNICIPALITY WARRANTY	QA00681	206	$0.00
ADD: LACR 2 YR REPAIR SERVICE ADVANTAGE	H885	206	$84.00
H885 option is MANDATORY to be selected for every order. Provides for 3 year of hardware repair coverage beginning from the date of shipment. Repairs will be made only at the designated Motorola authorized repair depot. Local services are not included. Customer will pay the inbound shipping charges. Motorola will pay for the outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			

12: Manual

Description	Nomenclature	APC	Price
DEL: USER GUIDE CD	QA02728	536	$0.00
This deletes the user guide CD that ships standard with the radio.			
ADD: DATA LINK MANAGER APP CD-PORTABLES	QA00205	655	$0.00
Option provides the NVN5424 Data CD. Please order this option if you would like the Data CD, and are unable to obtain it through other sources such as MOL.			

13: Test Results

Description	Nomenclature	APC	Price
ADD: TEST RESULTS / RATED AUDIO PRINTOUT	H799	536	$0.00

Section D: Aftermarket Accessories

Adapters

Description	Nomenclature	APC	Price
APX SURVEILLANCE KEYLOAD A	NNTN7869A	742	$65.00

Antenna

Description	Nomenclature	APC	Price
UHF1 GPS STUBBY ANTENNA	FAF5259A	481	$60.00
UHF (380-520) GPS ANTENNA	PMAE4065A	795	$21.00

Batteries

Description	Nomenclature	APC	Price
BATT IMP STD LI ION 1900M 2000T	NNTN8128AR	453	$100.00
BATT IMP FM LI ION 2300M2350T	NNTN8129AR	453	$130.00
BATT IMP LI ION 2300M 2350T	PMNN4424AR	453	$115.00

Belt Clip(s) / Holsters

Description	Nomenclature	APC	Price
BELT CLIP 2"	PMLN4651A	271	$11.00
2.5-INCH BELT CLIP	PMLN7008A	271	$12.00

Bluetooth Mission Critical Wirelese

Description	Nomenclature	APC	Price
EARPIECE W/9.5" CABLE	NTN2575A	742	$151.00
EARPIECE W/12" CABLE FM Certified; MCW BT; Requires QA00583 to be ordered in the APX radio	NTN2572A	742	$151.00
ASSEMBLY,ACCESSORY,WIRELESS ACCY KIT, NFP, 9.5" CABLE FM Certified MCW BT Requires QA00583 to be ordered in the APX radio	NTN2573B	742	$295.00
WIRELESS 2.0 COMMPORT IC MODULE	NTN2571B	742	$139.00
ASSEMBLY ACCESSORY WIRELESS ACCY KIT NFP 12 CABLE	NTN2570C	742	$295.00
1-WIRE EARBUD,29CM CORD,BLACK	NNTN8294A	742	$40.00
1-WIRE EARBUD,116CM CORD,BLACK	NNTN8295A	742	$40.00
ACCY,KIT,EAR PIECE,2W SHORT CORD,BL	NNTN8296A	742	$180.00
MC WIRELESS REMOTE CONTROL KEYFOB & US CHARGER	NNTN8442A	742	$350.00

Bluetooth, Mission Critical Wireless Replacement Parts

Description	Nomenclature	APC	Price
RECEIVE-ONLY FOAM EARBUD WITH 3.5MM PLUG - INTRINSICALLY SAFE (FM) When used with MTP3000 models, to be used with remote speaker microphones PMMN4078A, PMMN4072A and PMMN4074A	AARLN4885	742	$25.00
D-SHELL RX-ONLY EARPIECE(3.5MM)	PMLN4620A	742	$19.00
BONE CONDUCTION EAR MIC IMPRES Ear Microphone System with Programmable Button and Large Push-to-Talk: Lightweight earpiece that picks up sound through bone conduction In digital mode, bone conduction can have a beesier (muffled) sound quality depending on the user	PMLN5653A	742	$399.00
RECEIVE ONLY EARPIECE W/TRANSLUCENT TUBE When used with MTP3000 models, to be used with remote speaker microphones PMMN4078A, PMMN4072A and	RLN4941A	742	$58.00

PMMN4074A EAR RCVR W/COIL CBL&3.5MM PLUG	WADN4190B	742	$43.00

Headsets

Description	Nomenclature	APC	Price
IMPRES TEMPLE TRANSDUCER FM Certified	PMLN5101A	742	$228.00
HEAVY DUTY HEADSET PMLN5275C	PMLN5275C	742	$679.00
CORE L/W HEADSET FM Certified	RMN5058A	742	$99.00
RX/TX BOOMLESS TEMPLE TRANSDUCER Temple Transducer Headset will ONLY work with: Microphone Compatibility HMN4101, HMN4103, HMN4104.	RMN5116A	742	$248.00

Charger

Description	Nomenclature	APC	Price
MOTOTRBO TRAVEL CHARGER	RLN6433A	785	$95.00
110 VAC 50/60 HZ US IMPRES SUC	WPLN4232A	785	$63.00

Charger Inserts

Description	Nomenclature	APC	Price
INSERT, UNIVERSAL SUC Only compatible with XTS Single Unit Chargers	NNTN8169A	453	$45.00
INSERT, UNIVERSAL MUC Only compatible with XTS Multi Unit Chargers	NNTN8170A	453	$207.00

CPS / Programming Cables

NEO PORT PROG CABLE APX DMR PORT PROG CABLE	PMKN4012B	037	$75.00
PROGRAMMING, TEST & ALIGNMENT CABLE	PMKN4013C	037	$92.00

Remote Speaker Microphones - RSM's

Description	Nomenclature	APC	Price
IMPRES RSM DSPLY W JACK, W CHNL	HMN4104B	372	$375.00
APX7000 IMPRES RSM, NOISE CANC. EMERGENCY BUTTON 3.5MM JACK IP54	PMMN4062A	795	$107.00
APX IMPRES RSM W/VOL, IP57	PMMN4065A	795	$97.00
IMPRES RSM, 3.5MM AUDIO JACK	PMMN4069A	795	$110.00

Surveillance Kits, Wired

Description	Nomenclature	APC	Price
IMPRES 3 WR W/TRANS TUBE BLK Kit with date code 0848 and beyond are compatible with APX	PMLN5111A	742	$173.00
IMPRES 3 WR W/TRANS TUBE BEIGE Kit with date code 0848 and beyond are compatible with APX	PMLN5112A	742	$173.00
SURVEILLANCE KITS CORE 1 WIRE BLK	RLN5878A	742	$40.00
SURVEILLANCE KIT 1 WIRE - BGE	RLN5879A	742	$40.00
IMPRES 2 WIRE W/TRANS TUBE BLK	RLN5882A	742	$122.00
IMPRES 2 WIRE W/TRANS TUBE BEIGE	RLN5883A	742	$122.00
SURVEILLANCE LOW NOISE KIT	RLN5886A	742	$20.00
IMPRES 3 WIRE SURVEILLANCE-BLACK	PMLN5097A	742	$165.00
IMPRES 3 WIRE SURVEILLANCE-BEIGE	PMLN5106A	742	$165.00

Data Compiled 16-May-2013 using DUP and all prices in USD

ASTRO® Digital APX 4000™ Portable Series

900 MHz Band

P25 Phase 2 Single Band Capable Radio

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749) OR HARDWARE KEY (QA01648) OR WACN KEY (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error.******

Ship Card

Features

All ASTRO Digital APX 4000 models include the following features:

- Dual Microphone
- 0.5 Watt Rated Audio
- Integrated GPS Hardware Capable*
- Integrated Bluetooth Hardware Capable*
- 2" Belt Clip
- LiIon 1900 mAh Battery (NNTN8128)
- 3 Programmable Side Buttons
- Orange Programmable Button
- Continuous rotary multifunction knob
- Low Battery Alert Tone
- Noise Cancellation Software
- Intelligent Lighting

- Antenna (Dependent on Frequency Band and Type)
- IP67 ships standard with every radio model

ASTRO Digital APX 4000 Limited Keypad and Full Kepad with Dual Display Model also includes:

- Universal Carry Holder
- Unified Call List
- Front Color Display: 2 lines of text, 2 lines of icon
- Radio Profiles
- Full Keypad: 4 x 3 alpha-numeric 3 programmable button, 4 way navigation, home and data buttons

*** Must purchase Software to ENABLE.**

All ASTRO Digital APX 4000 Portables are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the current RF capabilities of the radio)

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749) OR HARDWARE KEY (QA01648) OR WACN KEY (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error.******

http://ecat.comm.mot.com/ecat/pricebooks/dup/ASK.htm

General Information

The ASTRO Digital APX 4000 Portable Line offers **TWO** different radio hardware models:

Hardware Model	Modes	Alphanumeric Display Lines/Characters	Keypad	Navigation Pad
ASTRO APX 4000 Limited Keypad	512	14 (front)	-	Yes
ASTRO APX 4000 Full Keypad	512	14 (front)	4 x 3	Yes

Operating Modes

ASTRO Digital APX 4000 Radio Models are capable of operating in four different voice communication modes:

- Normal Analog (clear voice)
- 3.6KB ASTRO Digital (both clear and coded voice)
- 9.6 KB ASTRO 25 Digital (both Clear and Coded voice)
- 9.6KB 12.5kHz 2 slot digital TDMA (both clear and coded voice).
- Will be capable of APCO25 Phase 2 functionality in future software releases.

TDMA

FDMA (Frequency Division Multiple Access) is a proven technology that is widely used today in radio systems and is part of APCO 25 Project 25 Phase 1 standard. FDMA carries one call per channel. TDMA (Time Division Multiple Access) will be part of P25 Phase 2 standard and provides double the voice capacity as 2 calls can share 1 channel. Customers can add more users to their systems without the need of additional frequencies or infrastructure. The APX radios support both P25 Phase 1 and TDMA technologies seamlessly. Using Motorola's unique Dynamic Dual Mode (DDM) capability, the radios dynamically switch between FDMA and TDMA without the user having to change channels. This provides interoperability on demand with existing and future networks.

FLASHport AFTERMARKET UPGRADES

The ASTRO Digital APX 4000 Portable Series Radios are part of the FLASHport Program. This means that ASTRO Digital APX 4000 hardware models can be loaded with different software packages that provide the features and functionalities that our customers require.

System Enhancement Options can be loaded at the time of radio purchase or at a later date through the use of software field upgrades (a USB cable is required for all software upgrades.) The ASTRO Digital APX 4000 portable can be upgraded electronically in the field with new features in the current system or to new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

Ordering Requirements

Ordering procedure is as follows:

Steps	Required Options	Comments
1	**APX 4000 700/800 MHz Main Model**	APX Digital Portable Radio- a. H51WCF9PW6AN- APX 4000 900MHz MODEL 2 b. H51WCH9PW7AN- APX 4000 900MHz MODEL 3
2	**Operation Mode**	a. QA02812AA- ENH: P25 9600 TRUNKING W/ INTEROPERABILITY b. QA02756- ENH: 3600 OR 9600 TRUNKING BAUD SINGLE SYSTEM c. Q811- ENH: SOFTWARE P25 CONVENTIONAL

d. QA02829- ANALOG CONVENTIONAL

e. Q443- ENH: SOFTWARE ANALOG 3600 BAUD

3 System Enhancement

a. G996- ADD: PROGRAMMING OVER P25 (OTAP)

b. QA00583- ADD: ENABLE BLUETOOTH SW

c. QA00580- ADD: TDMA OPERATION

1. Order the APX 4000 Portable Series as the main line item.

- Each hardware model MUST be ordered with one operation mode.
- Default battery is LiIon 1900mAh
- Default 2" belt clip
- Default Antenna is the single appropriate antenna for your RF configuration.

2. Select software package for radio.

- Note - APX Radio ships with 12 month standard warranty.

Common Software Features Supported By

H38 "SmartZone"				
	Analog Operation	ASTRO Digital	ASTRO P25 Digital	TDMA
	Non-Project 25 (3600 Baud)	Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	TDMA OPERATION
RADIO WIDE FEATURES				
Maximum Modes				
ASTRO Digital APX 4000 Limited Keypad	512	512	512	512
ASTRO Digital APX 4000 Full Keypad	512	512	512	512
Analog and Digital Operation	Yes	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable	No	Yes (Digital Only)	Yes (Digital Only)	Yes (Digital Only)
One Touch Operation	Yes	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes	Yes
Surveillance Mode	Yes	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes	Yes
Radio Lock	Yes	Yes	Yes	Yes

Smart Battery	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified above.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
DTMF Signaling	Future	Future	Future	Future
Quick-Call Signaling	Future	Future	Future	Future
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Conventional Interoperable Features when used in the ASTRO Digital CAI Mode (Q806).				
Unaddressed Voice Call (Dispatch Call)	Yes	Yes	Yes	Yes
Talk Group Call	Yes	Yes	Yes	Yes
Group Call Alert™	Yes	Yes	Yes	Yes
Talk Group Identification (TGID)	Yes	Yes	Yes	Yes
Selective Call (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
PTT ID (Individual Identification)	MDC-1200 Only	Yes	Yes	Yes
Call Alert Encode/Decode	MDC-1200 Only	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	MDC-1200 Only	Yes	Yes	Yes
Telephone Interconnect	Yes	Yes	Yes	Yes
Selective Radio Inhibit	MDC-1200 Only	Yes	Yes	Yes
Radio Check	MDC-1200 Only	Yes	Yes	Yes
Status/Message	MDC-1200 Only	Yes	Yes	Yes
Trunking Type II Only Features				
Maximum Number of Trunked Systems-20	Yes	Yes	Yes	Yes
Talkgroup Calls	Yes	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes	Yes

Call Alert Encode/Decode	Yes	Yes	Yes	Yes
Analog/Digital Dual Mode Scan	No	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only	Status Only
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes	Yes
Remote Monitor/Radio Trace	Yes	Yes	Yes	Yes
Reprogram Request	Yes	Yes	Yes	Yes

SmartZone				
	Analog Operation	ASTRO Digital	ASTRO Digital	TDMA
		Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	Project 25 (TDMA Operation)
Trunking Type II Only Features				
Voice on Control	-	-	-	-
SmartZone Automatic Site Registration	Yes	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes	Yes
SmartZone Preferred Site	Yes	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the APX 4000 portable series. Separation of frequencies can be as wide as the allowable band per radio model with no degradation of any performance specifications. If an incorrect antenna is used, degraded performance may be experienced.

ZONED OPERATION

This option converts MODE-ONLY ASTRO Digital APX 4000 portables to Zone Operation radios.

For the Limited keypad and Full Keypad radios there is a maximum of 50 zones, with 512 channels per zone.

PROJECT 25 ENCRYPTION

The mode of operation is programmed on a channel-by-channel basis. With the coded/clear switch set to the clear mode, the ASTRO Digital APX4000 radio is capable of transmitting clear analog voice or clear (unencrypted) ASTRO Digital voice, depending on the channel programming. With the coded/clear switch set to the coded mode, the ASTRO Digital APX 4000 radio will transmit ASTRO Digital encryption depending on the channel programming. ASTRO Digital encryption provides secure communications. ASTRO Digital Encryption (operation in encrypted mode while also operation in 3.6KB or 9.6KB and TDMA ASTRO mode) is capable of XL type

encryptions; ASTRO Digital Encryptions does not operate with non-XL encryptions.

An encryption option is not required for either clear analog operation or clear ASTRO Digital operation. Encryption can be ordered with the ASTRO Digital APX 4000 radio either as a factory installed option or separate from the radio for later field installation. ASTRO Digital APX 4000 radio functions include selected ASTRO digital signaling and digital speech coding.

When ordering any of the Encryption Algorithms:

- The AES encryption algorithms offered are compliant with digital Project 25 standards and does not support analog encryption operation.
- **Requires** the ASTRO Digital CAI (Q806) to operate the AES encryption.
- Encryption Algorithms can be ordered later via Flash Port.

FIPS 140-2 Compliance

Encryption Modules equipped with AES are FIPS 140-2 compliant. Details regarding the certification, and copies of the relevant certificates, can be obtained on the NIST website at: http://csrc.nist.gov/groups/STM/cmvp/validation.html.

Further information regarding FIPS 140-2 certification may be found using the following link - FIPS 140-2 Crypto Module Validation Program (CMVP) http://csrc.nist.gov/groups/STM/cmvp/index.html

FM INFORMATION

APX 4000 Portable Radio when properly equipped with NNTN8129 is Factory Mutual (FM/CSA) Approved as intrinsically safe for use in Div 1, Class I , Groups C,D, Class II groups E, F, G, Class III Div 2, Class I A, B,C,D.

ASTRO Advanced Messaging Solution (ASM)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

Ordering ASTRO Text Messaging for APX 4000 Portable Requires:

1. APX 4000 Radio
2. P25 Digital Conventional (Q811)
3. Radio Packet Data (Q947

OR

1. APX 4000 Radio
2. 9600 or 3600 Digital Trunking (QA02756)
3. Radio Packet Data (Q947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

Outdoor Personnel Location Global Positioning Satellite (GPS) Feature

The personnel outdoor location tracking GPS feature enables a dispatcher the ability to locate on-foot patrols and out of the vehicle officers who are involved in life threatening situations. The radio user's GPS position information is sent over the ASTRO 25 Integrated Voice & Data (IV&D) network and is delivered to the dispatch operator using a third party mapping display application at the dispatch center *(Mapping Application is not yet available through Motorola at this time, however an Application Developers Tool Kit is available for 3rd party vendors to use to modify existing applications. See link below for more details.)* On the Dual Display model only it is possible to the user to determine their own location (latitude/longitude) through the use of the location menu.

During normal operation the radio battery capacity will be reduced by 10% to 16%.

In order to obtain an initial GPS fix position, the radio must be located in an open sky, outdoor environment with no barriers that could affect the signal around you or above you. During this initial fix, the radio should NOT be worn on the body as this may affect the process of acquiring signal and/or add additional time to first fix.

NOTE LIMITATIONS OF USE:

GPS works best in an open sky (clear view of the sky with no obstructions) environment. Due to the limitations of the technology, there are certain situations which prevent GPS coverage. These situations include but are not limited to:

- Underground locations (tunnels, subways, etc.)
- Inside of buildings, elevators, parking garages, trains, other covered vehicles, etc.
- Under metal or concrete roof structures
- Urban canyons (between tall buildings or under dense tree coverage)

***GPS Performance may be degraded when the radio is worn against the body and/or against the body within a vehicle.

Due to the limitations mentioned above, GPS should only be utilized as a method to assist the user with location information but not as a means for mission critical communication. Therefore, in any emergency situation, the location should always be verbally reported to the dispatcher.

For further information regarding System Requirements, go to the location solutions price pages at: http://ecat.comm.mot.com/ecat/pricebooks/dup/ALOCATION.htm

Ordering GPS for APX 4000 Portable Requires:

- Enable GPS Operation (QA00782)
- Radio Packet Data (Q947)

900MHz Models (2, 3)	Frequencies	Self-Quieters
900 MHz	896-901	940.8
900 MHz	935-940	

*within +/-25kHz of the specified frequency

CPS INFORMATION

****Please note that a NEW version of CPS (RVN5224) is required for initial customer orders for this product. This new version of CPS is required for the APX radio shipments. ****

FCC Information

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance	Emission Designator
AZ489FT5864	**90, 90.210(e)**	**896.0 - 901.0**	**2.5**	**1.5 PM**	**NOTE 1**
AZ489FT5864	**90, 90.210(e)**	**935.0 - 940.0**	**2.5**	**1.5 PM**	**NOTE 1**

Ordering Guide

Advanced System Key

Enhancement Level Guide

APX Series Sales Presentation

Fleet Management Ordering Guide

Spec Sheet

APX Family Brochure

RSA

RSA Comprehensive

Portable Accessory Catalog

Models

Description	Nomenclature	APC	Price
APX 4000 900 MHZ MODEL 2 PORTABLE	H51WCF9PW6 N	426	$1,400.00
APX 4000 900 MHZ MODEL 3 PORTABLE	H51WCH9PW7 N	426	$1,800.00

Options

Operation Mode

Description	Nomenclature	APC	Price
ENH: SOFTWARE ANALOG 3600 BAUD	Q443	426	$1,100.00
ENH: SOFTWARE P25 CONVENTIONAL	Q811	426	$650.00
ENH: 3600 OR 9600 TRUNKING BAUD SIN	QA02756	426	$1,570.00
ENH: ANALOG CONVENTIONAL	QA02829	426	$400.00

System Enhancement Software

Description	Nomenclature	APC	Price
ADD: PROGRAMMING OVER P25 (OTAP) Compatible with P25 Trunking only. Requires Q947 Data option. To do in field POP25 programming must use Advanced System Key (DVN4046A).	G996	426	$100.00
ADD: TDMA OPERATION Requires P25 Trunking. A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with eny APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased	QA00580	426	$400.00
ADD: ENABLE BLUETOOTH SW	QA00583	426	$150.00
ENH: INTERNAL ACTIVATION AND GPS BAENH: INTERNAL ACTIVATION AND GPS BA Must have IV&D (Q947) enabled.	QA00782	426	$100.00
ADD: ADVANCED SYSTEM KEY - HARDWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA01648	655	$5.00
ADD: ADVANCED SYSTEM KEY - SOFTWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking.	QA01749	655	$0.00
ADD: ADVANCED WACN KEY SUPP DATA A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA02018	655	$5.00

Systems Enhancement Options

Description	Nomenclature	APC	Price
ENH: TRUNKED RADIO TRACE/ REMOTE MO	H43	426	$75.00
ENH: ONE TOUCH/STATUS MSG	H46	426	$75.00
ADD: MULTICAST VOTING SCAN	Q387	426	$200.00
ADD: PACKET DATA (IV&D AND RS232) Requires Digital functionality.	Q947	426	$200.00
ADD: DVRS PSU ACTIVATION Enables DVRS Enhanced PSU functionality on APX Radios. Requires XTL MSU and Digital Operation.	QA00631	655	$100.00
ENH: LINK LAYER RADIO AUTHENTICATION Requires P25 Trunking operation.	QA01767	426	$100.00
ENH: ENHANCEMENT LEVEL 1 Please reference the Enhancement Level Reference Guide for more details. This option allows for a few parameters (ZONES, CHANNELS, SYSTEMS PERSONALITIES, UCL ENTRIES, VOICE ANNOUNCMENT, ENCRYPTION KEYS) on the entry tier to go to a mid tier level.	QA01770	426	$200.00

ADD: EXTREME NOISE REDUCTION	QA01833	426	$25.00
ADD: ACCELEROMETER / MAN-DOWN	QA01843	426	$150.00

Algorithm Options

Description	Nomenclature	APC	Price
ADD: TACTICAL REKEY WITH MULTIKEY	H04	426	$350.00
Must order IV&D (Q947). Incompatible with MDC/ASTRO P25 OTAR with Multikey (Q498).			
ENH: MULTIKEY	H869	426	$330.00
ENH: AES ENCRYPTION	Q629	426	$475.00

Antenna

Description	Nomenclature	APC	Price
~~DEL: DELETE STANDARD ANTENNA~~	~~H112~~	~~426~~	~~($10.00)~~
Deletes the standard UHF antenna(PMAE4085A).			

Battery

Description	Nomenclature	APC	Price
DEL: DELETE BATTERY (NNTN8128)	H207	426	($47.00)
ALT: IMPRES LI-ION 2300MAH FM (NNTN	QA00582	426	$110.00
ALT: IMPRES LI-ION 2300MAH	QA02749	426	$85.00

Belt Clip(s)

Description	Nomenclature	APC	Price
DEL: DELETE STANDARD BELT CLIP	H301	426	($10.00)
ADD: 2.5 INCH BELT CLIP	Q698	426	$12.00

Cable(s)

Description	Nomenclature	APC	Price
ADD: DATA CABLE	Q157	655	$75.00
PMKN4013A-GCAI cable at radio interface and USB connection at other end for computer programming. Please note that the PMKN4012A is NOT compatible with the APX 4000			

Programming

Description	Nomenclature	APC	Price
ADD: FRONT PANEL PROGRAMMING	Q53	426	$150.00

Service Options

Description	Nomenclature	APC	Price
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	H885BK	185	$84.00
Provides 2 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	H886AQ	185	$125.00
Provides 3 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ADD: 3 YR RSA COMPREHENSIVE	HA00022AB	185	$228.00
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via			

Motorola's normal shipping methods. No discounts are allowed on this option.

ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	Q884	185	$44.00
Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH:4 YEAR REPAIR SERVICE ADVANTAGE	Q887	185	$162.00
Provides 4 years of extended hardware repair coverage beginning after the standerd warranty period expires. Repairs will be made only at the designated Motorola repeir depot. Local services are not included. Motorole will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			

Manual(s)

Description	Nomenclature	APC	Price
ADD: DATA LINK MANAGER APP CD-PORTABLES	QA00205	655	$0.00
Option provides the NVN5424 Data CD. Please order this option if you would like the Data CD, and are unable to obtain it through other sources such as MOL.			
DEL: USER GUIDE CD	QA01274	426	$0.00

Packaging

Description	Nomenclature	APC	Price
ADD: SINGLE UNIT PACKAGING	H842	426	$0.00

Test Results

Description	Nomenclature	APC	Price
ADD: TEST RESULTS / RATED AUDIO PRI	H799	426	$0.00

Accessories

Bluetooth, Mission Critical Wireless Replacement

Description	Nomenclature	APC	Price
EARTIPS, REPLACEMENT	NNTN8299A	742	$3.15
COMMPORT MAINTENANCE KIT	NTN8821	115	$46.00
Includes Replacement Ear Tubes (qty 10), Windscreens (qty 2) and Microphone Seal Strips (qty 10).			
COMMPORT EAR STRAP (PACK OF 10)	NTN8988A	115	$17.25
ACCY,SMPS,MICRO USB,FIXED,CLP,US	PMPN4009A	903	$21.00

Bluetooth, Mission Critical Wireless

Description	Nomenclature	APC	Price
1-WIRE EARBUD,29CM CORD,BLACK	NNTN8294A	742	$40.00
1-WIRE EARBUD,116CM CORD,BLACK	NNTN8295A	742	$40.00
ACCY,KIT,EAR PIECE,2W SHORT CORD,BL	NNTN8296A	742	$180.00
WIRELESS 2.0 COMMPORT IC MODULE	NTN2571B	742	$139.00
EARPIECE W/12" CABLE	NTN2572A	742	$151.00
FM Certified; MCW BT; Requires QA00583 to be ordered in the APX radio			
ASSEMBLY,ACCESSORY,WIRELESS ACCY KIT, NFP, 9.5" CABLE	NTN2573B	742	$295.00
FM Certified MCW BT Requires QA00583 to be ordered in the APX radio			
EARPIECE W/9.5" CABLE	NTN2575A	742	$151.00

Data Compiled 16-May-2013 using DUP and all pricee in USD

ASTRO® Digital APX 4000™ Portable Series

UHF R1/R2 Band

P25 Phase 2 Single Band Capable Radio

Special Note for United States - State & Local Markets only:

In accordance with FCC mandate, the APX4000 UHF R1 & UHFR2 products are restricted to NOT allow programming for 25 KHz operation. These frequencies are RESTRICTED to 12.5 KHz operation only.

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749) OR HARDWARE KEY (QA01648) OR WACN KEY (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error.*****

Ship Card

Features

All ASTRO Digital APX 4000 models include the following features:

- Dual Microphone
- 0.5 Watt Reted Audio
- Integrated GPS Hardware Capable*
- Integrated Bluetooth Hardware Capable*
- 2" Belt Clip
- Lilon 1900 mAh Battery (NNTN8128)
- Antenna (Dependent on Frequency Band and Type)
- IP67 ships standerd with every radio model
- 3 Programmable Side Buttons
- Orange Programmable Button
- Continuous rotary multifunction knob
- Low Battery Alert Tone
- Noise Cancellation Software
- Intelligent Lighting

ASTRO Digital APX 4000 Limited Keypad and Full Kepad with Dual Display Model also includes:

- Universal Carry Holder
- Unified Call List
- Front Color Display: 2 lines of text, 2 lines of icon
- Radio Profiles
- Full Keypad: 4 x 3 alpha-numeric 3 programmable button, 4 way nevigation, home and data buttons

*** Must purchase Software to ENABLE.**

All ASTRO Digital APX 4000 Portables are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the current RF capabilities of the radio)

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749) OR HARDWARE KEY (QA01648)**

OR WACN KEY (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error.***

http://ecat.comm.mot.com/ecat/pricebooks/dup/ASK.htm

General Information

The ASTRO Digital APX 4000 Portable Line offers **TWO** different radio hardware models:

Hardware Model	Modes	Alphanumeric Display Lines/Characters	Keypad	Navigation Pad
ASTRO APX 4000 Limited Keypad	512	14 (front)	-	Yes
ASTRO APX 4000 Full Keypad	512	14 (front)	4 x 3	Yes

Operating Modes

ASTRO Digital APX 4000 Radio Models are capable of opereting in four different voice communication modes:

- Normal Analog (clear voice)
- 3.6KB ASTRO Digital (both clear and coded voice)
- 9.6 KB ASTRO 25 Digitel (both Clear and Coded voice)
- 9.6KB 12.5kHz 2 slot digital TDMA (both clear end coded voice).
- Will be capable of APCO25 Phase 2 functionelity in future software releases.

TDMA

FDMA (Frequency Division Multiple Access) is a proven technology that is widely used todey in radio systems and is part of APCO 25 Project 25 Phase 1 standard. FDMA carries one call per channel. TDMA (Time Division Multiple Access) will be part of P25 Phase 2 standerd and provides double the voice capacity as 2 calls can share 1 channel. Customers can add more users to their systems without the need of additional frequencies or infrastructure. The APX radios support both P25 Phase 1 and TDMA technologies seamlessly. Using Motorola's unique Dynamic Dual Mode (DDM) capebility, the radios dynamically switch between FDMA and TDMA without the user having to change channels. This provides interoperability on demand with existing and future networks.

FLASHport AFTERMARKET UPGRADES

The ASTRO Digital APX 4000 Portable Series Radios are part of the FLASHport Progrem. This means that ASTRO Digitel APX 4000 hardware models can be loaded with different softwere packages that provide the features and functionalities that our customers require.

Syetem Enhancement Options cen be loaded at the time of redio purchase or at a later date through the use of software field upgrades (a USB cable is required for all software upgrades.) The ASTRO Digital APX 4000 portable can be upgraded electronically in the field with new features in the current system or to new systems operation (contingent upon remaining within the seme RF sub-band) by ordering upgrade kits.

Ordering Requirements

Ordering procedure is as follows:

Steps	Required Options	Comments
1	**APX 4000 UHF R1 MHz Main Model**	APX Digital Portable Radio- a. H51QDF9PW6AN- APX 4000 UHF R1 MODEL 2 b. H51QDH9PW7AN- APX 4000 UHF R1 MODEL 3 c. H51SDH9PW6AN- APX 4000 UHF R2 MODEL 2 d. H51SDH9PW7AN- APX 4000 UHF R2 MODEL 3
2	**Operation Mode**	a. QA02756- ENH: 3600 OR 9600 TRUNKING BAUD SINGLE SYSTEM b. Q811- ENH: SOFTWARE P25 CONVENTIONAL

c. QA02829- ANALOG CONVENTIONAL

d. Q443- ENH: SOFTWARE ANALOG 3600 BAUD

a. G996- ADD: PROGRAMMING OVER P25 (OTAP)

3 System Enhancement

b. QA00583- ADD: ENABLE BLUETOOTH SW

c. QA00580- ADD: TDMA OPERATION

1. Order the APX 4000 Porteble Series as the main line item.

- Each hardware model MUST be ordered with one operation mode.
- Default battery is Liton 1900mAh
- Default 2" belt clip
- Default Antenna is the single appropriate antenna for your RF configuration.

2. Select software package for radio.

- Note - APX Radio ships with 12 month standard warranty.

Common Software Features Supported By

H38 "SmartZone"				
	Analog Operation	ASTRO Digital	ASTRO P25 Digital	TDMA
	Non-Project 25 (3600 Baud)	Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	TDMA OPERATION
RADIO WIDE FEATURES				
Maximum Modes				
ASTRO Digital APX 4000 Limited Keypad	512	512	512	512
ASTRO Digital APX 4000 Full Keypad	512	512	512	512
Analog and Digital Operation	Yes	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable	No	Yes (Digital Only)	Yes (Digital Only)	Yes (Digital Only)
One Touch Operation	Yes	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes	Yes
Surveillance Mode	Yes	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes	Yes
Radio Lock	Yes	Yes	Yes	Yes
Smart Battery	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified above.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
DTMF Signaling	Future	Future	Future	Future
Quick-Call Signaling	Future	Future	Future	Future
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Conventional Interoperable Features when used in the ASTRO Digital CAI Mode (Q806).				

Unaddressed Voice Call (Dispatch Call)	Yes	Yes	Yes	Yes
Talk Group Call	Yes	Yes	Yes	Yes
Group Call Alert™	Yes	Yes	Yes	Yes
Talk Group Identification (TGID)	Yes	Yes	Yes	Yes
Selective Call (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
PTT ID (Individuel Identification)	MDC-1200 Only	Yes	Yes	Yes
Call Alert Encode/Decode	MDC-1200 Only	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	MDC-1200 Only	Yes	Yes	Yes
Telephone Interconnect	Yes	Yes	Yes	Yes
Selective Radio Inhibit	MDC-1200 Only	Yes	Yes	Yes
Radio Check	MDC-1200 Only	Yes	Yes	Yes
Status/Message	MDC-1200 Only	Yes	Yes	Yes
Trunking Type II Only Features				
Maximum Number of Trunked Systems-20	Yes	Yes	Yes	Yes
Talkgroup Calls	Yes	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes	Yes
Analog/Digital Dual Mode Scan	No	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only	Status Only
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes	Yes
Remote Monitor/Radio Trace	Yes	Yes	Yes	Yes
Reprogram Request	Yes	Yes	Yes	Yes

SmartZone				
	Analog Operation	ASTRO Digital	ASTRO Digital	TDMA
		Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	Project 25 (TDMA Operation)
Trunking Type II Only Features				
Voice on Control	-	-	-	-
SmartZone Automatic Site Registration	Yes	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes	Yes
SmartZone Preferred Site	Yes	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be edhered to on the APX 4000 portable series. Separation of frequencies can be as wide as the allowable band per radio model with no degradation of any performance specifications. If an incorrect antenna is used, degraded performance may be experienced.

ZONED OPERATION

This option converts MODE-ONLY ASTRO Digital APX 4000 portables to Zone Operation radios.

For the Limited keypad and Full Keypad radios there is a meximum of 50 zones, with 512 channels per zone.

PROJECT 25 ENCRYPTION

The mode of operetion is programmed on a channel-by-channel basis. With the coded/clear switch set to the clear mode, the ASTRO Digital APX4000 radio is

capable of transmitting clear analog voice or clear (unencrypted) ASTRO Digitel voice, depending on the channel programming. With the coded/clear switch set to the coded mode, the ASTRO Digital APX 4000 radio will transmit ASTRO Digitel encryption depending on the channel programming. ASTRO Digital encryption provides secure communications. ASTRO Digital Encryption (operation in encrypted mode while also operation in 3.6KB or 9.6KB and TDMA ASTRO mode) is capable of XL type encryptions; ASTRO Digital Encryptions does not operate with non-XL encryptions.

An encryption option is not required for either clear analog operation or clear ASTRO Digitel operation. Encryption can be ordered with the ASTRO Digital APX 4000 radio either as a factory installed option or separate from the radio for later field installation. ASTRO Digital APX 4000 radio functions include selected ASTRO digitel signaling and digital speech coding.

When ordering any of the Encryption Algorithms:

- The AES encryption algorithms offered are compliant with digital Project 25 standards and does not support analog encryption operation.
- **Requires** the ASTRO Digital CAI (Q806) to operate the AES encryption.
- Encryption Algorithms can be ordered later via Flash Port.

FIPS 140-2 Compliance

Encryption Modules equipped with AES are FIPS 140-2 compliant. Details regarding the certification, and copies of the relevant certificates, can be obtained on the NIST website at: http://csrc.nist.gov/groups/STM/cmvp/validation.html.

Further information regarding FIPS 140-2 certification may be found using the following link - FIPS 140-2 Crypto Module Validation Program (CMVP) http://csrc.nist.gov/groups/STM/cmvp/index.html

FM INFORMATION

APX 4000 Portable Radio when properly equipped with NNTN8129 is Factory Mutual (FM/CSA) Approved as intrinsically safe for use in Div 1, Class I , Groups C,D, Class II groups E, F, G, Class III Div 2, Class I A, B,C,D.

ASTRO Text Messaging Service

ASTRO Text Messaging Service will be available on APX 4000 Portable radios. Text Messaging Service (TMS) allows subscriber users to send and receive text messages to other subscribers or dispatch operators. Users can select messages and addresses from a predefined list or enter freeform text messages and addresses via the keypad. Text Messaging Service is available on ASTRO P25 Conventional and Trunked IV&D Systems and Subscribers.

Ordering ASTRO Text Messaging for APX 4000 Portable Requires:

1. APX 4000 Radio
2. P25 Digital Conventional (Q811)
3. Radio Packet Data (Q947

OR

1. APX 4000 Radio
2. 9600 or 3600 Digital Trunking (QA02756)
3. Radio Packet Data (Q947)

NOTE: *There is no specific option to order for the Text Messaging Service on the subscribers as the functionality is included in the Packet Data option.*

Outdoor Personnel Location Global Positioning Satellite (GPS) Feature

The personnel outdoor location tracking GPS feature enables a dispatcher the ability to locate on-foot patrols and out of the vehicle officers who are involved in life threatening situations. The radio user's GPS position information is sent over the ASTRO 25 Integrated Voice & Data (IV&D) network and is delivered to the dispatch operator using a third party mapping display application at the dispatch center *(Mapping Application is not yet available through Motorola at this time, however an Application Developers Tool Kit is available for 3rd party vendors to use to modify existing applications. See link below for more details.)* On the Dual Display model only it is possible to the user to determine their own location (latitude/longitude) through the use of the location menu.

During normal operation the radio battery capacity will be reduced by 10% to 16%.

In order to obtain an initial GPS fix position, the radio must be located in an open sky, outdoor environment with no barriers that could affect the signal around you or above you. During this initial fix, the radio should NOT be worn on the body as this may effect the process of acquiring signal and/or add additional time to first fix.

NOTE LIMITATIONS OF USE:

GPS works best in an open sky (clear view of the sky with no obstructions) environment. Due to the limitations of the technology, there are certain situations which prevent GPS coverage. These situations include but are not limited to:

- Underground locations (tunnels, subways, etc.)
- Inside of buildings, elevators, parking garages, trains, other covered vehicles, etc.
- Under metal or concrete roof structures
- Urban canyons (between tall buildings or under dense tree coverage)

***GPS Performance may be degraded when the radio is worn against the body and/or against the body within a vehicle.

Due to the limitations mentioned above, GPS should only be utilized as a method to assist the user with location information but not as a means for mission critical communication. Therefore, in any emergency situation, the location should always be verbally reported to the dispatcher.

For further information regarding System Requirements, go to the location solutions price pages at:
http://ecat.comm.mot.com/ecat/pricebooks/dup/ALOCATION.htm

Ordering GPS for APX 4000 Portable Requires:

- Enable GPS Operation (QA00782)
- Radio Packet Data (Q947)

UHF1, Model 2 and Model 3	Frequency (MHz)
1	384.0000
2	385.0200
3	393.2125
4	407.8625
5	417.7875
6	431.9875
7	442.3625

*within +/-25kHz of the specified frequency

Self- Quieting Ranges:

UHF2 (M2 and M3)	
1	Quieters (MHz)
2	454.6500
3	455.9750
4	456.0750
5	456.1750
6	456.2000
7	466.9375
8	468.1750
9	480.0750
10	487.2000
11	503.8000
12	504.0750
13	512.0000
14	516.0875
15	519.2500

CPS INFORMATION

****Please note that a NEW version of CPS (RVN5224) is required for initial customer orders for this product. This new version of CPS is required for the APX radio shipments. ****

FCC Information

Band/Model	Power Output	Transmitter Certification	Emissions	Applicable Rules
UHF Range 1 (380.470MHz)	380-406 - 5W 406.1-470 - 5W	AZ489FT4907/ AZ489FT4905	11K0F3E, 8K10F1E, 8K10F1D, 8K10F1W	90.210

Ordering Guide

Advanced System Key

Enhancement Level Guide

APX Series Sales Presentation

Fleet Management Ordering Guide

Spec Sheet

APX Family Brochure

RSA

RSA Comprehensive

Portable Accessory Catalog

Models

Description	Nomenclature	APC	Price
APX 4000 UHFR1 MHZ MODEL 2 PORTABLE	H51QDF9PW6 N	426	$1,400.00
APX 4000 UHFR1 MHZ MODEL 3 PORTABLE	H51QDH9PW7 N	426	$1,800.00
APX 4000 UHFR2 MODEL 2 PORTABLE	H51SDF9PW6 N	426	$1,400.00
APX 4000 UHF R2 MODEL 3 PORTABLE	H51SDH9PW7 N	426	$1,800.00

Options

Operation Mode

Description	Nomenclature	APC	Price
ENH: SOFTWARE ANALOG 3600 BAUD	Q443	426	$1,100.00
ENH: SOFTWARE P25 CONVENTIONAL	Q811	428	$650.00
ENH: 3600 OR 9600 TRUNKING BAUD SIN	QA02756	426	$1,570.00
ENH: ANALOG CONVENTIONAL	QA02829	426	$400.00

System Enhancement Software

Description	Nomenclature	APC	Price
ADD: PROGRAMMING OVER P25 (OTAP) Compatible with P25 Trunking only. Requires Q947 Data option. To do in field PDP25 programming must use Advanced System Key (DVN4048A).	G996	426	$100.00
ADD: TDMA OPERATION Requires P25 Trunking. A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased	QA00580	426	$400.00
ADD: ENABLE BLUETOOTH SW	QA00583	426	$150.00
ENH: INTERNAL ACTIVATION AND GPS BAENH: INTERNAL ACTIVATION AND GPS BA Must have IV&D (Q947) enabled.	QA00782	426	$100.00
ADD: ADVANCED SYSTEM KEY - HARDWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA01648	655	$5.00
ADD: ADVANCED SYSTEM KEY - SOFTWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking.	QA01749	655	$0.00
ADD: ADVANCED WACN KEY SUPP DATA A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA02018	655	$5.00

Systems Enhancement Options

Description	Nomenclature	APC	Price
ENH: TRUNKED RADIO TRACE/ REMOTE MO	H43	426	$75.00
ENH: ONE TOUCH/STATUS MSG	H46	426	$75.00
ADD: MULTICAST VOTING SCAN	Q387	426	$200.00
ADD: PACKET DATA (IV&D AND RS232) Requires Digital functionality.	Q947	426	$200.00
ADD: DVRS PSU ACTIVATION Enables DVRS Enhanced PSU functionality on APX Radios. Requires XTL MSU and Digital Operation.	QA00631	655	$100.00
ENH: LINK LAYER RADIO AUTHENTICATION Requires P25 Trunking operation.	QA01767	426	$100.00
ENH: ENHANCEMENT LEVEL 1 Please reference the Enhancement Level Reference Guide for more details. This option allows for a few parameters (ZONES, CHANNELS, SYSTEMS PERSONALITIES, UCL ENTRIES, VOICE ANNOUNCMENT, ENCRYPTION KEYS) on the entry tier to go to a mid tier level.	QA01770	426	$200.00
ADD: EXTREME NOISE REDUCTION	QA01833	426	$25.00
ADD: ACCELEROMETER / MAN-DOWN	QA01843	426	$150.00

Algorithm Options

Description	Nomenclature	APC	Price
AOD: TACTICAL REKEY WITH MULTIKEY Must order IV&D (Q947). Incompatible with MDC/ASTRO P25 OTAR with Multikey (Q498).	H04	426	$350.00
ENH: MULTIKEY	H869	426	$330.00
ENH: AES ENCRYPTION	Q629	426	$475.00

Antenna

Description	Nomenclature	APC	Price
DEL: DELETE STANDARD ANTENNA	H112	426	($10.00)
Deletes the standard UHF antenna(PMAE4065A).			
ALT: GPS STUBBY ANTENNA	QA00785	426	$18.00
ALT: UHF R1 GPS STUBBY ANTENNA (FAF	QA02017	426	$55.00

Battery

Description	Nomenclature	APC	Price
DEL: DELETE BATTERY (NNTN6128)	H207	426	($47.00)
ALT: IMPRES LI-ION 2300MAH FM (NNTN	QA00582	426	$110.00
ALT: IMPRES LI-ION 2300MAH	QA02749	426	$85.00

Belt Clip(s)

Description	Nomenclature	APC	Price
DEL: DELETE STANDARD BELT CLIP	H301	426	($10.00)
ADD: 2.5 INCH BELT CLIP	Q698	426	$12.00

Cable(s)

Description	Nomenclature	APC	Price
ADD: DATA CABLE	Q157	855	$75.00
PMKN4013A-GCAI cable at radio interface and USB connection at other end for computer programming. Please note that the PMKN4012A is NOT compatible with the APX 4000			

Programming

Description	Nomenclature	APC	Price
ADD: FRONT PANEL PROGRAMMING	Q53	426	$150.00

Service Options

Description	Nomenclature	APC	Price
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	H885BK	185	$84.00
Provides 2 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	H886AQ	185	$125.00
Provides 3 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ADD: 3 YR RSA COMPREHENSIVE	HA00022AB	185	$228.00
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	Q684	185	$44.00
Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH:4 YEAR REPAIR SERVICE ADVANTAGE	Q887	185	$182.00
Provides 4 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			

Manual(s)

Description	Nomenclature	APC	Price
ADD: DATA LINK MANAGER APP CD-PORTABLES	QA00205	855	$0.00
Option provides the NVN5424 Data CD. Please order this option if you would like the Data CD, and are unable to obtain it through other sources such as MOL.			
DEL: USER GUIDE CD	QA01274	426	$0.00

Packaging

Description	Nomenclature	APC	Price
ADD: SINGLE UNIT PACKAGING	H842	426	$0.00

Test Results

Description	Nomenclature	APC	Price
ADD: TEST RESULTS / RATED AUDIO PRI	H799	426	$0.00

Accessories

Data Compiled 16-May-2013 using DUP and all prices in USD

ASTRO® Digital APX 4000™ Portable Series

VHF Band

P25 Phase 2 Single Band Capable Radio

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749) OR HARDWARE KEY (QA01648) OR WACN KEY (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error.******

Ship Card

Features

All ASTRO Digital APX 4000 models include the following features:

- Dual Microphone
- 0.5 Watt Rated Audio
- Integrated GPS Hardware Capable*
- Integrated Bluetooth Hardware Capable*
- 2" Belt Clip
- LiIon 1900 mAh Battery (NNTN8128)
- Antenna (Dependent on Frequency Band and Type)
- 3 Programmable Side Buttons
- Orange Programmable Button
- Continuous rotary multifunction knob
- Low Battery Alert Tone
- Noise Cancellation Software
- Intelligent Lighting

- IP67 ships standard with every radio model

ASTRO Digital APX 4000 Limited Keypad and Full Kepad with Dual Display Model also includes:

- Universal Carry Holder
- Unified Call List
- Front Color Display: 2 lines of text, 2 lines of icon
- Radio Profiles
- Full Keypad: 4 x 3 alpha-numeric 3 programmable button, 4 way navigation, home and data buttons

*** Must purchase Software to ENABLE.**

All ASTRO Digital APX 4000 Portables are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the current RF capabilities of the radio)

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749) OR HARDWARE KEY (QA01648) OR WACN KEY (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. Also, an Advanced System Keys (ASK- DVN4046) will be required to be ordered. ******

http://ecat.comm.mot.com/ecat/pricebooks/dup/ASK.htm

General Information

The ASTRO Digital APX 4000 Portable Line offers **TWO** different radio hardware models:

Hardware Model	Modes	Alphanumeric Display Lines/Characters	Keypad	Navigation Pad
ASTRO APX 4000 Limited Keypad	512	14 (front)	-	Yes
ASTRO APX 4000 Full Keypad	512	14 (front)	4 x 3	Yes

Operating Modes

ASTRO Digital APX 4000 Radio Models are capable of operating in four different voice communication modes:

- 3.6KB
- 9.6 KB

• Normal Analog (clear voice)	ASTRO Digital (both clear and coded voice)	ASTRO 25 Digital (both Clear and Coded voice)	• 9.6KB 12.5kHz 2 slot digital TDMA (both clear and coded voice). • Will be capable of APCO25 Phase 2 functionality in future software releases.

TDMA

FDMA (Frequency Division Multiple Access) is a proven technology that is widely used today in radio systems and is part of APCO 25 Project 25 Phase 1 standard. FDMA carries one call per channel. TDMA (Time Division Multiple Access) will be part of P25 Phase 2 standard and provides double the voice capacity as 2 calls can share 1 channel. Customers can add more users to their systems without the need of additional frequencies or infrastructure. The APX radios support both P25 Phase 1 and TDMA technologies seamlessly. Using Motorola's unique Dynamic Dual Mode (DDM) capability, the radios dynamically switch between FDMA and TDMA without the user having to change channels. This provides interoperability on demand with existing and future networks.

FLASHport AFTERMARKET UPGRADES

The ASTRO Digital APX 4000 Portable Series Radios are part of the FLASHport Program. This means that ASTRO Digital APX 4000 hardware models can be loaded with different software packages that provide the features and functionalities that our customers require.

System Enhancement Options can be loaded at the time of radio purchase or at a later date through the use of software field upgrades (a USB cable is required for all software upgrades.) The ASTRO Digital APX 4000 portable can be upgraded electronically in the field with new features in the current system or to new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749) OR HARDWARE KEY (QA01648) OR WACN KEY (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error.******

Ordering Requirements

Ordering procedure is as follows:

Steps	Required Options	Comments
		APX Digital Portable Radio-
1	**APX 4000 UHF R1 MHz Main Model**	a. H51KDF9PW6AN- APX 4000 VHF MODEL 2 b. H51KDH9PW7AN- APX 4000 VHF MODEL 3
		a. QA02756- ENH: 3600 OR 9600 TRUNKING BAUD SINGLE SYSTEM

		b. Q811- ENH: SOFTWARE P25 CONVENTIONAL
2	**Operation Mode**	c. QA02829- ANALOG CONVENTIONAL
		d. Q443- ENH: SOFTWARE ANALOG 3600 BAUD
		a. G996- ADD: PROGRAMMING OVER P25 (OTAP)
3	**System Enhancement**	b. QA00583- ADD: ENABLE BLUETOOTH SW
		c. QA00580- ADD: TDMA OPERATION

1. Order the APX 4000 Portable Series as the main line item.

- Each hardware model MUST be ordered with one operation mode.
- Default battery is LiIon 1900mAh
- Default 2" belt clip
- Default Antenna is the single appropriate antenna for your RF configuration.

2. Select software package for radio.

- Note - APX Radio ships with 12 month standard warranty.

Common Software Features Supported By

H38 "SmartZone"				
	Analog Operation	ASTRO Digital	ASTRO P25 Digital	TDMA
	Non-Project 25 (3600 Baud)	Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	TDMA OPERATION
RADIO WIDE FEATURES				
Maximum Modes				
ASTRO Digital APX 4000 Limited Keypad	512	512	512	512
ASTRO Digital APX 4000 Full Keypad	512	512	512	512
Analog and Digital Operation	Yes	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable	No	Yes (Digital Only)	Yes (Digital Only)	Yes (Digital Only)
One Touch Operation	Yes	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes	Yes
Surveillance Mode	Yes	Yes	Yes	Yes

Keypad Lock	Yes	Yes	Yes	Yes
Radio Lock	Yes	Yes	Yes	Yes
Smart Battery	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified above.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
DTMF Signaling	Future	Future	Future	Future
Quick-Call Signaling	Future	Future	Future	Future
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Conventional Interoperable Features when used in the ASTRO Digital CAI Mode (Q806).				
Unaddressed Voice Call (Dispatch Call)	Yes	Yes	Yes	Yes
Talk Group Call	Yes	Yes	Yes	Yes
Group Call Alert™	Yes	Yes	Yes	Yes
Talk Group Identification (TGID)	Yes	Yes	Yes	Yes
Selective Call (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
PTT ID (Individual Identification)	MDC-1200 Only	Yes	Yes	Yes
Call Alert Encode/Decode	MDC-1200 Only	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	MDC-1200 Only	Yes	Yes	Yes
Telephone Interconnect	Yes	Yes	Yes	Yes
Selective Radio Inhibit	MDC-1200 Only	Yes	Yes	Yes
Radio Check	MDC-1200 Only	Yes	Yes	Yes
Status/Message	MDC-1200 Only	Yes	Yes	Yes
Trunking Type II Only Features				
Maximum Number of Trunked Systems-20	Yes	Yes	Yes	Yes

Talkgroup Calls	Yes	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes	Yes
Analog/Digital Dual Mode Scan	No	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only	Status Only
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes	Yes
Remote Monitor/Radio Trace	Yes	Yes	Yes	Yes
Reprogram Request	Yes	Yes	Yes	Yes

SmartZone				
	Analog Operation	ASTRO Digital	ASTRO Digital	TDMA
		Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	Project 25 (TDMA Operation)
Trunking Type II Only Features				
Voice on Control	-	-	-	-
SmartZone Automatic Site Registration	Yes	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes	Yes
SmartZone Preferred Site	Yes	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the APX 4000 portable series. Separation of frequencies can be as wide as the allowable band per radio model with no degradation of any performance specifications. If an incorrect antenna is used, degraded performance may be experienced.

ZONED OPERATION

This option converts MODE-ONLY ASTRO Digital APX 4000 portables to Zone Operation radios.

For the Limited keypad and Full Keypad radios there is a maximum of 50 zones, with 512 channels per zone.

PROJECT 25 ENCRYPTION

The mode of operation is programmed on a channel-by-channel basis. With the coded/clear switch set to the clear mode, the ASTRO Digital APX4000 radio is capable of transmitting clear analog voice or clear (unencrypted) ASTRO Digital voice, depending on the channel programming. With the coded/clear switch set to the coded

mode, the ASTRO Digital APX 4000 radio will transmit ASTRO Digital encryption depending on the channel programming. ASTRO Digital encryption provides secure communications. ASTRO Digital Encryption (operation in encrypted mode while also operation in 3.6KB or 9.6KB and TDMA ASTRO mode) is capable of XL type encryptions; ASTRO Digital Encryptions does not operate with non-XL encryptions.

An encryption option is not required for either clear analog operation or clear ASTRO Digital operation. Encryption can be ordered with the ASTRO Digital APX 4000 radio either as a factory installed option or separate from the radio for later field installation. ASTRO Digital APX 4000 radio functions include selected ASTRO digital signaling and digital speech coding.

When ordering any of the Encryption Algorithms:

- The AES encryption algorithms offered are compliant with digital Project 25 standards and does not support analog encryption operation.
- **Requires** the ASTRO Digital CAI (Q806) to operate the AES encryption.
- Encryption Algorithms can be ordered later via Flash Port.

FIPS 140-2 Compliance

Encryption Modules equipped with AES are FIPS 140-2 compliant. Details regarding the certification, and copies of the relevant certificates, can be obtained on the NIST website at: http://csrc.nist.gov/groups/STM/cmvp/validation.html.

Further information regarding FIPS 140-2 certification may be found using the following link - FIPS 140-2 Crypto Module Validation Program (CMVP) http://csrc.nist.gov/groups/STM/cmvp/index.html

FM INFORMATION

APX 4000 Portable Radio when properly equipped with NNTN8129 is Factory Mutual (FM/CSA) Approved as intrinsically safe for use in Div 1, Class I , Groups C,D, Class II groups E, F, G, Class III Div 2, Class I A, B,C,D.

ASTRO Text Messaging Service

ASTRO Text Messaging Service will be available on APX 4000 Portable radios. Text Messaging Service (TMS) allows subscriber users to send and receive text messages to other subscribers or dispatch operators. Users can select messages and addresses from a predefined list or enter freeform text messages and addresses via the keypad. Text Messaging Service is available on ASTRO P25 Conventional and Trunked IV&D Systems and Subscribers.

Ordering ASTRO Text Messaging for APX 4000 Portable Requires:

1. APX 4000 Radio
2. P25 Digital Conventional (Q811)
3. Radio Packet Data (Q947

OR

1. APX 4000 Radio
2. 9600 or 3600 Digital Trunking (QA02756)
3. Radio Packet Data (Q947)

NOTE: *There is no specific option to order for the Text Messaging Service on the subscribers as the functionality is included in the Packet Data option.*

Outdoor Personnel Location Global Positioning Satellite (GPS) Feature

The personnel outdoor location tracking GPS feature enables a dispatcher the ability to locate on-foot patrols and out of the vehicle officers who are involved in life threatening situations. The radio user's GPS position information is sent over the ASTRO 25 Integrated Voice & Data (IV&D) network and is delivered to the dispatch operator using a third party mapping display application at the dispatch center *(Mapping Application is not yet available through Motorola at this time, however an Application Developers Tool Kit is available for 3rd party vendors to use to modify existing applications. See link below for more details.)* On the Dual Display model only it is possible to the user to determine their own location (latitude/longitude) through the use of the location menu.

During normal operation the radio battery capacity will be reduced by 10% to 16%.

In order to obtain an initial GPS fix position, the radio must be located in an open sky, outdoor environment with no barriers that could affect the signal around you or above you. During this initial fix, the radio should NOT be worn on the body as this may affect the process of acquiring signal and/or add additional time to first fix.

NOTE LIMITATIONS OF USE:

GPS works best in an open sky (clear view of the sky with no obstructions) environment. Due to the limitations of the technology, there are certain situations which prevent GPS coverage. These situations include but are not limited to:

- Underground locations (tunnels, subways, etc.)
- Inside of buildings, elevators, parking garages, trains, other covered vehicles, etc.
- Under metal or concrete roof structures
- Urban canyons (between tall buildings or under dense tree coverage)

***GPS Performance may be degraded when the radio is worn against the body and/or against the body within a vehicle.

Due to the limitations mentioned above, GPS should only be utilized as a method to assist the user with location information but not as a means for mission critical communication. Therefore, in any emergency situation, the location should always be verbally reported to the dispatcher.

For further information regarding System Requirements, go to the location solutions price pages at: http://ecat.comm.mot.com/ecat/pricebooks/dup/ALOCATION.htm

Ordering GPS for APX 4000 Portable Requires:

- Enable GPS Operation (QA00782)
- Radio Packet Data (Q947)

Frequency Specification Information

VHF, Model 2 and Model 3	Frequency (MHz)
1	144.0000

2	147.4500
3	156.0000
4	168.0000
5	172.0250

*within +/-25kHz of the specified frequency

Self-Quieting Information

VHF (M2 and M3)	
	Quieters
1	144.0000
2	147.4500
3	156.0000
4	168.0000
5	172.0250

CPS INFORMATION

****Please note that a NEW version of CPS (RVN5224) is required for initial customer orders for this product. This new version of CPS is required for the APX radio shipments. ****

FCC Information

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance	Emission Designator
BE EF	**90.210**	**136.0 - 174.0**	**5.5**	**2.0 PM**	**NOTE 1**
BE EF	**90.210(e)**	**136.0 - 174.0**	**5.5**	**2.0 PM**	**8K10F1W**
BE EF	**80**	**136.0 - 174.0**	**5.5**	**2.0 PM**	**16K0F3E**
BE EF	**80**	**136.0 - 174.0**	**5.5**	**2.0 PM**	**20K0F1E**

Ordering Guide

Advanced System Key

Enhancement Level Guide

APX Series Sales Presentation

Fleet Management Ordering Guide

Spec Sheet

APX Family Brochure

RSA

RSA Comprehensive

Portable Accessory Catalog

Models

Description	Nomenclature	APC	Price
APX 4000 VHF MHZ MODEL 2 PORTABLE	H51KDF9PW6 N	426	$1,400.00
APX 4000 VHF MHZ MODEL 3 PORTABLE	H51KDH9PW7 N	426	$1,800.00

Options

Operation Mode

Description	Nomenclature	APC	Price
ENH: SOFTWARE ANALOG 3600 BAUD	Q443	426	$1,100.00
ENH: SOFTWARE P25 CONVENTIONAL	Q811	426	$650.00
ENH: 3600 OR 9600 TRUNKING BAUD SIN	QA02756	426	$1,570.00
ENH: ANALOG CONVENTIONAL	QA02829	426	$400.00

System Enhancement Software

Description	Nomenclature	APC	Price
ADD: PROGRAMMING OVER P25 (OTAP) Compatible with P25 Trunking only. Requires Q947 Data option. To do in field POP25 programming must use Advanced System Key (DVN4046A).	G996	426	$100.00
ADD: TDMA OPERATION Requires P25 Trunking. A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchesed	QA00580	426	$400.00
ADD: ENABLE BLUETOOTH SW	QA00583	426	$150.00
ENH: INTERNAL ACTIVATION AND GPS BAENH: INTERNAL ACTIVATION AND GPS BA Must have IV&D (Q947) enabled.	QA00782	426	$100.00
ADD: ADVANCED SYSTEM KEY - HARDWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA01648	655	$5.00
ADD: ADVANCED SYSTEM KEY - SOFTWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking.	QA01749	655	$0.00
ADD: ADVANCED WACN KEY SUPP DATA A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA02018	655	$5.00

Systems Enhancement Options

Description	Nomenclature	APC	Price
ENH: TRUNKED RADIO TRACE/ REMOTE MO	H43	426	$75.00
ENH: ONE TOUCH/STATUS MSG	H46	426	$75.00
ADD: MULTICAST VOTING SCAN	Q387	426	$200.00
ADD: PACKET DATA (IV&D AND RS232) Requires Digital functionality.	Q947	426	$200.00
ADD: DVRS PSU ACTIVATION Enables DVRS Enhanced PSU functionality on APX Radios. Requires XTL MSU and Digital Operation.	QA00631	655	$100.00
ENH: LINK LAYER RADIO AUTHENTICATION Requires P25 Trunking operation.	QA01767	426	$100.00
ENH: ENHANCEMENT LEVEL 1 Please reference the Enhancement Level Reference Guide for more details. This option allows for a few parameters (ZONES, CHANNELS, SYSTEMS PERSONALITIES, UCL ENTRIES, VOICE ANNOUNCMENT, ENCRYPTION KEYS) on the entry tier to go to a mid tier level.	QA01770	426	$200.00
ADD: EXTREME NOISE REDUCTION	QA01833	426	$25.00
ADD: ACCELEROMETER / MAN-DOWN	QA01843	426	$150.00

Algorithm Options

Description	Nomenclature	APC	Price
ADD: TACTICAL REKEY WITH MULTIKEY Must order IV&D (Q947). Incompatible with MDC/ASTRO P25 OTAR with Multikey (Q498).	H04	426	$350.00
ENH: MULTIKEY	H869	426	$330.00
ENH: AES ENCRYPTION	Q629	426	$475.00

Antenna

Description	Nomenclature	APC	Price
DEL: DELETE STANDARD ANTENNA Deletes the standard UHF antenna(PMAE4065A).	H112	426	($10.00)

Battery

Description	Nomenclature	APC	Price
DEL: DELETE BATTERY (NNTN8128)	H207	426	($47.00)
ALT: IMPRES LI-ION 2300MAH	QA02749	426	$85.00

Belt Clip(s)

Description	Nomenclature	APC	Price
DEL: DELETE STANDARD BELT CLIP	H301	426	($10.00)
ADD: 2.5 INCH BELT CLIP	Q698	426	$12.00

Cable(s)

Description	Nomenclature	APC	Price
ADD: DATA CABLE PMKN4013A-GCAI cable at radio interface and USB connection at other end for computer programming. Please note that the PMKN4012A is NOT compatible with the APX 4000	Q157	655	$75.00

Programming

Description	Nomenclature	APC	Price
ADD: FRONT PANEL PROGRAMMING	Q53	426	$150.00

Service Options

Description	Nomenclature	APC	Price
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	H885BK	185	$84.00

period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ENH: 3 YEAR REPAIR SERVICE ADVANTAGE Provides 3 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	H886AQ	185	$125.00
ADD: 3 YR RSA COMPREHENSIVE Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	HA00022AB	185	$228.00
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	Q884	185	$44.00
ENH:4 YEAR REPAIR SERVICE ADVANTAGE Provides 4 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	Q887	185	$162.00

Manual(s)

Description	Nomenclature	APC	Price
ADD: DATA LINK MANAGER APP CD-PORTABLES Option provides the NVN5424 Data CD. Please order this option if you would like the Data CD, and are unable to obtain it through other sources such as MOL.	QA00205	655	$0.00
DEL: USER GUIDE CD	QA01274	426	$0.00

Packaging

Description	Nomenclature	APC	Price
ADD: SINGLE UNIT PACKAGING	H842	426	$0.00

Test Results

Description	Nomenclature	APC	Price
ADD: TEST RESULTS / RATED AUDIO PRI	H799	426	$0.00

Accessories

Bluetooth, Mission Critical Wireless Replacement

Description	Nomenclature	APC	Price
COMMPORT MAINTENANCE KIT Includes Replacement Ear Tubes (qty 10), Windscreens (qty 2) and Microphone Seal Strips (qty 10).	NTN8821	115	$46.00
COMMPORT EAR STRAP (PACK OF 10)	NTN8988A	115	$17.25

Adapter

Description	Nomenclature	APC	Price
APX SURVEILLANCE KEYLOAD A	NNTN7869A	742	$65.00

Battery

Description	Nomenclature	APC	Price
BATT IMP STD LI ION 1900M 2000T	NNTN8128AR	453	$100.00
BATT IMP FM LI ION 2300M2350T	NNTN8129AR	453	$130.00
BATT IMP LI ION 2300M 2350T	PMNN4424AR	453	$115.00

Battery Maintenance Systems

Description	Nomenclature	APC	Price
IMPRES BATTERY DATA READER	NNTN7392	785	$250.00
Provides IMPRES battery users ability to access key usage data via PC. Compatible w/all IMPRES batteries (HT/PRO,TRBO & APX adapter included)			
FLEET MANAGEMENT RELEASE 1.2	NNTN7676C	785	$10.00
CHARGR INTRFCE UNT GEN1 IMPRES SUC	NNTN8045A	785	$35.00
Single-Unit Charger Interface Unit , attaches to an APX IMPRES single-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to the IMPRES Battery Fleet Management.			

Belt Clip(s)

Description	Nomenclature	APC	Price
BELT CLIP 2"	PMLN4651A	271	$11.00
2.5-INCH BELT CLIP	PMLN7008A	271	$12.00

Bluetooth, Mission Critical Wireless

Description	Nomenclature	APC	Price
WIRELESS 2.0 COMMPORT IC MODULE	NTN2571B	742	$139.00
EARPIECE W/12" CABLE	NTN2572A	742	$151.00
FM Certified; MCW BT; Requires QA00583 to be ordered in the APX radio			
ASSEMBLY,ACCESSORY,WIRELESS ACCY KIT, NFP, 9.5" CABLE	NTN2573B	742	$295.00
FM Certified MCW BT Requires QA00583 to be ordered in the APX radio			

Carrying Case(s)

Description	Nomenclature	APC	Price
APX2000/4000 SW LEATHER CARRY CASE2	PMLN6085A	271	$60.00

Charger

Description	Nomenclature	APC	Price
IMPRES MUC - US/NA PLUG	WPLN4212A	785	$495.00
IMPRES MUC W/DISPLAY - US/NA PLUG	WPLN4219A	785	$650.00
110 VAC 50/60 HZ US IMPRES SUC	WPLN4232A	785	$63.00

Charger Insert

Description	Nomenclature	APC	Price
INSERT, UNIVERSAL SUC	NNTN8169A	453	$45.00
Only compatible with XTS Single Unit Chargers			
INSERT, UNIVERSAL MUC	NNTN8170A	453	$207.00
Only compatible with XTS Multi Unit Chargers			

Commport Integrated Microphone/Receiver

Description	Nomenclature	APC	Price
COMMPORT EAR TUBES (PACK OF 10)	RLN5037	115	$26.00

Earpieces

Description	Nomenclature	APC	Price
RECEIVE-ONLY FOAM EARBUD WITH 3.5MM PLUG - INTRINSICALLY SAFE (FM) When used with MTP3000 models, to be used with remote speaker microphones PMMN4078A, PMMN4072A and PMMN4074A	AARLN4885	742	$25.00
D-SHELL RX-ONLY EARPIECE(3.5MM)	PMLN4620A	742	$19.00
BONE CONDUCTION EAR MIC IMPRES Ear Microphone System with Programmable Button and Large Push-to-Talk: Lightweight earpiece that picks up sound through bone conduction In digital mode, bone conduction can have a bassier (muffled) sound quality depending on the user	PMLN5653A	742	$399.00
RECEIVE ONLY EARPIECE W/TRANSLUCENT TUBE When used with MTP3000 models, to be used with remote speaker microphones PMMN4078A, PMMN4072A and PMMN4074A	RLN4941A	742	$58.00
EAR RCVR W/COIL CBL&3.5MM PLUG	WADN4190B	742	$43.00

Headsets

Description	Nomenclature	APC	Price
IMPRES TEMPLE TRANSDUCER FM Certified	PMLN5101A	742	$228.00
HEAVY DUTY HEADSET PMLN5275B FM Certified	PMLN5275B	742	$485.00
HEAVY DUTY HEADSET PMLN5275C	PMLN5275C	742	$679.00
CORE L/W HEADSET FM Certified	RMN5058A	742	$99.00
RX/TX BOOMLESS TEMPLE TRANSDUCER Temple Transducer Headset will ONLY work with: Microphone Compatibility HMN4101, HMN4103, HMN4104.	RMN5116A	742	$248.00

Microphone Speaker

Description	Nomenclature	APC	Price
LTD IP57 REMOTE SPEAKER MICROPHONE	PMMN4040A	372	$75.00
IMPRES SPEAKER MIC W/VOL, IP57	PMMN4046A	372	$95.00
IMPRES REMOTE SPEAKER MIC, NC	PMMN4050A	372	$95.00

Multi Unit Chargers

Description	Nomenclature	APC	Price
IMPRES MUC US 1-UP DISPLAY	WPLN4239A	785	$495.00

Remote Speaker Microphones - RSM's

Description	Nomenclature	APC	Price
IMPRES RSM NO DSPLY W JACK, NO CHNL	HMN4101B	372	$300.00
IMPRES RSM DSPLY W JACK, NO CHNL	HMN4103B	372	$345.00
IMPRES RSM DSPLY W JACK, W CHNL	HMN4104B	372	$375.00
APX7000 IMPRES RSM, NOISE CANC. EMERGENCY BUTTON 3.5MM JACK IP54	PMMN4062A	795	$107.00
APX IMPRES RSM W/VOL, IP57	PMMN4065A	795	$97.00
IMPRES RSM, 3.5MM AUDIO JACK	PMMN4069A	795	$110.00
IMPRES RSM REPL COIL CORD	RLN6075	372	$85.00

Surveillance

Description	Nomenclature	APC	Price
REPLACEMENT CLEAR ACOUSTIC TUBE	0105954U29	742	$7.90

RUBBER EAR TIP, CLEAR	67009254001	795	$9.95
CORE EARSET - D-SHELL	PMLN5096A	742	$61.75
IMPRES 3 WIRE SURVEILLANCE-BLACK	PMLN5097A	742	$165.00
IMPRES 3 WIRE SURVEILLANCE-BEIGE	PMLN5106A	742	$165.00
IMPRES 3 WR W/TRANS TUBE BLK Kit with date code 0848 and beyond are compatible with APX	PMLN5111A	742	$173.00
IMPRES 3 WR W/TRANS TUBE BEIGE Kit with date code 0848 and beyond are compatible with APX	PMLN5112A	742	$173.00
SURVEILLANCE KITS CORE 1 WIRE BLK	RLN5878A	742	$40.00
SURVEILLANCE KIT 1 WIRE - BGE	RLN5879A	742	$40.00
IMPRES 2 WIRE W/TRANS TUBE BLK	RLN5882A	742	$122.00
IMPRES 2 WIRE W/TRANS TUBE BEIGE	RLN5883A	742	$122.00
SURVEILLANCE LOW NOISE KIT	RLN5886A	742	$20.00
SURVEILLANCE HIGH NOISE KIT	RLN5887A	742	$32.00
3-WIRE SURVEILLANCE KIT WITH MICROPHONE & PTT COMBINED, BEIGE Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8613 adapter	ZMN6031	742	$177.00
2-WIRE SURVEILLANCE KIT WITH MICROPHONE AND PTT COMBINED Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8613 adapter	ZMN6032	476	$143.00
2-WIRE SURVEILLANCE KIT WITH MICROPHONE AND PTT COMBINED - EXTRA LOUD Exceeds OSHA limits. Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8613 adapter	ZMN6038	476	$149.00

Data Compiled 16-May-2013 using DUP and all prices in USD

ASTRO® Digital APX 4000™ Portable Series

700/800 MHz Band

P25 Phase 2 Single Band Capable Radio

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749) OR HARDWARE KEY (QA01648) OR WACN KEY (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error.******

Ship Card

Features

All ASTRO Digital APX 4000 models include the following features:

- Dual Microphone
- 0.5 Watt Rated Audio
- Integrated GPS Hardware Capable*
- Integrated Bluetooth Hardware Capable*
- 2" Belt Clip
- Lilon 1900 mAh Battery (NNTN8128)
- 3 Programmable Side Buttons
- Orange Programmable Button
- Continuous rotary multifunction knob
- Low Battery Alert Tone
- Noise Cancellation Software
- Intelligent Lighting

- Antenna (Dependent on Frequency Band and Type)
- IP67 ships standard with every radio model

ASTRO Digital APX 4000 Limited Keypad and Full Kepad with Dual Display Model also includes:

- Universal Carry Holder
- Unified Call List
- Front Color Display: 2 lines of text, 2 lines of icon
- Radio Profiles
- Full Keypad: 4 x 3 alpha-numeric 3 programmable button, 4 way navigation, home and data buttons

*** Must purchase Software to ENABLE.**

All ASTRO Digital APX 4000 Portables are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the current RF capabilities of the radio)

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749) OR HARDWARE KEY (QA01648) OR WACN KEY (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error.******

http://ecat.comm.mot.com/ecat/pricebooks/dup/ASK.htm

General Information

The ASTRO Digital APX 4000 Portable Line offers **TWO** different radio hardware models:

Hardware Model	Modes	Alphanumeric Display Lines/Characters	Keypad	Navigation Pad
ASTRO APX 4000 Limited Keypad	512	14 (front)	-	Yes
ASTRO APX 4000 Full Keypad	512	14 (front)	4 x 3	Yes

Operating Modes

ASTRO Digital APX 4000 Radio Models are capable of operating in four different voice communication modes:

- Normal Analog (clear voice)
- 3.6KB ASTRO Digital (both clear and coded voice)
- 9.6 KB ASTRO 25 Digital (both Clear and Coded voice)
- 9.6KB 12.5kHz 2 slot digital TDMA (both clear and coded voice).
- Will be capable of APCO25 Phase 2 functionality in future software releases.

TDMA

FDMA (Frequency Division Multiple Access) is a proven technology that is widely used today in radio systems and is part of APCO 25 Project 25 Phase 1 standard. FDMA carries one call per channel. TDMA (Time Division Multiple Access) will be part of P25 Phase 2 standard and provides double the voice capacity as 2 calls can share 1 channel. Customers can add more users to their systems without the need of additional frequencies or infrastructure. The APX radios support both P25 Phase 1 and TDMA technologies seamlessly. Using Motorola's unique Dynamic Dual Mode (DDM) capability, the radios dynamically switch between FDMA and TDMA without the user having to change channels. This provides interoperability on demand with existing and future networks.

FLASHport AFTERMARKET UPGRADES

The ASTRO Digital APX 4000 Portable Series Radios are part of the FLASHport Program. This means that ASTRO Digital APX 4000 hardware models can be loaded with different software packages that provide the features and functionalities that our customers require.

System Enhancement Options can be loaded at the time of radio purchase or at a later date through the use of software field upgrades (a USB cable is required for all software upgrades.) The ASTRO Digital APX 4000 portable can be upgraded electronically in the field with new features in the current system or to new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

Ordering Requirements

Ordering procedure is as follows:

Steps	Required Options	Comments
1	**APX 4000 700/800 MHz Main Model**	APX Digital Portable Radio- a. H51UCF9PW6AN- APX 4000 700/800 MODEL 2 b. H51UCH9PW7AN- APX 4000 700/800 MODEL 3
2	**Operation Mode**	a. QA02756- ENH: 3600 OR 9600 TRUNKING BAUD SINGLE SYSTEM b. Q811- ENH: SOFTWARE P25 CONVENTIONAL c. QA02829- ANALOG CONVENTIONAL

		d. Q443- ENH: SOFTWARE ANALOG 3600 BAUD
		a. G996- ADD: PROGRAMMING OVER P25 (OTAP)
	3 System Enhancement	b. QA00583- ADD: ENABLE BLUETOOTH SW
		c. QA00580- ADD: TDMA OPERATION

1. Order the APX 4000 Portable Series as the main line item.

- Each hardware model MUST be ordered with one operation mode.
- Default battery is LiIon 1900mAh
- Default 2" belt clip
- Default Antenna is the single appropriate antenna for your RF configuration.

2. Select software package for radio.

- Note - APX Radio ships with 12 month standard warranty.

Common Software Features Supported By

H38 "SmartZone"				
	Analog Operation	ASTRO Digital	ASTRO P25 Digital	TDMA
	Non-Project 25 (3600 Baud)	Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	TDMA OPERATION
RADIO WIDE FEATURES				
Maximum Modes				
ASTRO Digital APX 4000 Limited Keypad	512	512	512	512
ASTRO Digital APX 4000 Full Keypad	512	512	512	512
Analog and Digital Operation	Yes	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable	No	Yes (Digital Only)	Yes (Digital Only)	Yes (Digital Only)
One Touch Operation	Yes	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes	Yes
Surveillance Mode	Yes	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes	Yes
Radio Lock	Yes	Yes	Yes	Yes
Smart Battery	Yes	Yes	Yes	Yes

Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified above.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
DTMF Signaling	Future	Future	Future	Future
Quick-Call Signaling	Future	Future	Future	Future
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Conventional Interoperable Features when used in the ASTRO Digital CAI Mode (Q806).				
Unaddressed Voice Call (Dispatch Call)	Yes	Yes	Yes	Yes
Talk Group Call	Yes	Yes	Yes	Yes
Group Call Alert™	Yes	Yes	Yes	Yes
Talk Group Identification (TGID)	Yes	Yes	Yes	Yes
Selective Call (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
PTT ID (Individual Identification)	MDC-1200 Only	Yes	Yes	Yes
Call Alert Encode/Decode	MDC-1200 Only	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	MDC-1200 Only	Yes	Yes	Yes
Telephone Interconnect	Yes	Yes	Yes	Yes
Selective Radio Inhibit	MDC-1200 Only	Yes	Yes	Yes
Radio Check	MDC-1200 Only	Yes	Yes	Yes
Status/Message	MDC-1200 Only	Yes	Yes	Yes
Trunking Type II Only Features				
Maximum Number of Trunked Systems-20	Yes	Yes	Yes	Yes
Talkgroup Calls	Yes	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes	Yes

Analog/Digital Dual Mode Scan	No	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only	Status Only
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes	Yes
Remote Monitor/Radio Trace	Yes	Yes	Yes	Yes
Reprogram Request	Yes	Yes	Yes	Yes

SmartZone				
	Analog Operation	ASTRO Digital	ASTRO Digital	TDMA
		Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	Project 25 (TDMA Operation)
Trunking Type II Only Features				
Voice on Control	-	-	-	-
SmartZone Automatic Site Registration	Yes	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes	Yes
SmartZone Preferred Site	Yes	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the APX 4000 portable series. Separation of frequencies can be as wide as the allowable band per radio model with no degradation of any performance specifications. If an incorrect antenna is used, degraded performance may be experienced.

ZONED OPERATION

This option converts MODE-ONLY ASTRO Digital APX 4000 portables to Zone Operation radios.

For the Limited keypad and Full Keypad radios there is a maximum of 50 zones, with 512 channels per zone.

PROJECT 25 ENCRYPTION

The mode of operation is programmed on a channel-by-channel basis. With the coded/clear switch set to the clear mode, the ASTRO Digital APX4000 radio is capable of transmitting clear analog voice or clear (unencrypted) ASTRO Digital voice, depending on the channel programming. With the coded/clear switch set to the coded mode, the ASTRO Digital APX 4000 radio will transmit ASTRO Digital encryption depending on the channel programming. ASTRO Digital encryption provides secure communications. ASTRO Digital Encryption (operation in encrypted mode while also operation in 3.6KB or 9.6KB and TDMA ASTRO mode) is capable of XL type encryptions; ASTRO Digital Encryptions does not operate with non-XL encryptions.

An encryption option is not required for either clear analog operation or clear ASTRO Digital operation. Encryption can be ordered with the ASTRO Digital APX 4000 radio either as a factory installed option or separate from the radio for later field installation. ASTRO Digital APX 4000 radio functions include selected ASTRO digital signaling and digital speech coding.

When ordering any of the Encryption Algorithms:

- The AES encryption algorithms offered are compliant with digital Project 25 standards and does not support analog encryption operation.
- **Requires** the ASTRO Digital CAI (Q806) to operate the AES encryption.
- Encryption Algorithms can be ordered later via Flash Port.

FIPS 140-2 Compliance

Encryption Modules equipped with AES are FIPS 140-2 compliant. Details regarding the certification, and copies of the relevant certificates, can be obtained on the NIST website at: http://csrc.nist.gov/groups/STM/cmvp/validation.html.

Further information regarding FIPS 140-2 certification may be found using the following link - FIPS 140-2 Crypto Module Validation Program (CMVP) http://csrc.nist.gov/groups/STM/cmvp/index.html

FM INFORMATION

APX 4000 Portable Radio when properly equipped with NNTN8129 is Factory Mutual (FM/CSA) Approved as intrinsically safe for use in Div 1, Class I , Groups C,D, Class II groups E, F, G, Class III Div 2, Class I A, B,C,D.

ASTRO Text Messaging Service

ASTRO Text Messaging Service will be available on APX 4000 Portable radios. Text Messaging Service (TMS) allows subscriber users to send and receive text messages to other subscribers or dispatch operators. Users can select messages and addresses from a predefined list or enter freeform text messages and addresses via the keypad. Text Messaging Service is available on ASTRO P25 Conventional and Trunked IV&D Systems and Subscribers.

Ordering ASTRO Text Messaging for APX 4000 Portable Requires:

1. APX 4000 Radio
2. P25 Digital Conventional (Q811)
3. Radio Packet Data (Q947

OR

1. APX 4000 Radio
2. 9600 or 3600 Digital Trunking (QA02756)
3. Radio Packet Data (Q947)

NOTE: *There is no specific option to order for the Text Messaging Service on the subscribers as the functionality is included in the Packet Data option.*

Outdoor Personnel Location Global Positioning Satellite (GPS) Feature

The personnel outdoor location tracking GPS feature enables a dispatcher the ability to locate on-foot patrols and out of the vehicle officers who are involved in life threatening situations. The radio user's GPS position information is sent over the ASTRO 25 Integrated Voice & Data (IV&D) network and is delivered to the dispatch operator using a third party mapping display application at the dispatch center *(Mapping Application is not yet available through Motorola at this time, however an Application Developers Tool Kit is available for 3rd party vendors to use to modify existing applications. See link below for more details.)* On the Dual Display model only it is possible to the user to determine their own location (latitude/longitude) through the use of the location menu.

During normal operation the radio battery capacity will be reduced by 10% to 16%.

In order to obtain an initial GPS fix position, the radio must be located in an open sky, outdoor environment with no barriers that could affect the signal around you or above you. During this initial fix, the radio should NOT be worn on the body as this may affect the process of acquiring signal and/or add additional time to first fix.

NOTE LIMITATIONS OF USE:

GPS works best in an open sky (clear view of the sky with no obstructions) environment. Due to the limitations of the technology, there are certain situations which prevent GPS coverage. These situations include but are not limited to:

- Underground locations (tunnels, subways, etc.)
- Inside of buildings, elevators, parking garages, trains, other covered vehicles, etc.
- Under metal or concrete roof structures
- Urban canyons (between tall buildings or under dense tree coverage)

***GPS Performance may be degraded when the radio is worn against the body and/or against the body within a vehicle.

Due to the limitations mentioned above, GPS should only be utilized as a method to assist the user with location information but not as a means for mission critical communication. Therefore, in any emergency situation, the location should always be verbally reported to the dispatcher.

For further information regarding System Requirements, go to the location solutions price pages at: http://ecat.comm.mot.com/ecat/pricebooks/dup/ALOCATION.htm

Ordering GPS for APX 4000 Portable Requires:

- Enable GPS Operation (QA00782)
- Radio Packet Data (Q947)

700/800 Models (2, 3)	Frequencies
700 MHz	767.950
700 MHz	772.800
800 MHz	856.800
800 MHz	863.025

*within +/-25kHz of the specified frequency

CPS INFORMATION

****Please note that a NEW version of CPS (RVN5224) is required for initial customer orders for this product. This new version of CPS is required for the APX radio shipments. ****

FCC Information

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance	Emission Designator
AZ489FT7049	**90**	**764.0 - 775.0**	**2.65**	**1.5 PM**	Note 1: 11K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 16K0F3E, 20K0F1E
AZ489FT7049	**90**	**793.0 - 805.0**	**2.65**	**1.5 PM**	Note 1: 11K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 16K0F3E, 20K0F1E
AZ489FT7049	**90**	**806.0 - 824.0**	**3.3**	**1.5 PM**	Note 1: 11K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 16K0F3E, 20K0F1E
AZ489FT7049	**90**	**851.0 - 870.0**	**3.3**	**1.5 PM**	Note 1: 11K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 16K0F3E, 20K0F1E

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance	Emission Designator
BH EF-AZ489FT7050	**90**	**764.0 - 775.0**	**2.65**	**1.5 PM**	Note 1: 11K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 16K0F3E, 20K0F1E
BH EF-AZ489FT7050	**90**	**793.0 - 805.0**	**2.65**	**1.5 PM**	Note 1: 11K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 16K0F3E, 20K0F1E
BH EF-AZ489FT7050	**90**	**806.0 - 824.0**	**3.3**	**1.5 PM**	Note 1: 11K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 16K0F3E, 20K0F1E
BH EF-AZ489FT7050	**90**	**851.0 - 869.0**	**3.3**	**1.5 PM**	Note 1: 11K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 16K0F3E, 20K0F1E

Ordering Guide

Advanced System Key

Enhancement Level Guide

APX Series Sales Presentation

Fleet Management Ordering Guide

Spec Sheet

APX Family Brochure

RSA

RSA Comprehensive

Portable Accessory Catalog

Models

Description	Nomenclature	APC	Price
APX 4000 7/800 MHZ MODEL 2 PORTABLE	H51UCF9PW6 N	426	$1,400.00
APX 4000 7/800 MHZ MODEL 3 PORTABLE	H51UCH9PW7 N	426	$1,800.00

Options

Operation Mode

Description	Nomenclature	APC	Price
ENH: SOFTWARE ANALOG 3600 BAUD	Q443	426	$1,100.00
ENH: SOFTWARE P25 CONVENTIONAL	Q811	426	$650.00
ENH: 3600 OR 9600 TRUNKING BAUD SIN	QA02756	426	$1,570.00
ENH: ANALOG CONVENTIONAL	QA02829	426	$400.00

System Enhancement Software

Description	Nomenclature	APC	Price
ADD: PROGRAMMING OVER P25 (OTAP) Compatible with P25 Trunking only. Requires Q947 Data option. To do in field POP25 programming must use Advanced System Key (DVN4046A).	G996	426	$100.00
ADD: TDMA OPERATION Requires P25 Trunking. A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA00580	426	$400.00
ADD: ENABLE BLUETOOTH SW	QA00583	426	$150.00
ENH: INTERNAL ACTIVATION AND GPS BAENH: INTERNAL ACTIVATION AND GPS BA Must have IV&D (Q947) enabled.	QA00782	426	$100.00
ADD: ADVANCED SYSTEM KEY - HARDWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will naed to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchesad.	QA01648	655	$5.00
ADD: ADVANCED SYSTEM KEY - SOFTWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchesed with eny APX Radio operating in trunking.	QA01749	655	$0.00
ADD: ADVANCED WACN KEY SUPP DATA A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA02018	655	$5.00

Systems Enhancement Options

Description	Nomenclature	APC	Price
ENH: TRUNKED RADIO TRACE/ REMOTE MO	H43	426	$75.00
ENH: ONE TOUCH/STATUS MSG	H46	426	$75.00
ADD: MULTICAST VOTING SCAN	Q387	426	$200.00
ADD: PACKET DATA (IV&D AND RS232) Requires Digital functionality.	Q947	426	$200.00
ADD: DVRS PSU ACTIVATION Enables DVRS Enhanced PSU functionality on APX Radios. Requires XTL MSU and Digital Operation.	QA00631	655	$100.00
ENH: LINK LAYER RADIO AUTHENTICATION Requires P25 Trunking operation.	QA01767	426	$100.00
ENH: ENHANCEMENT LEVEL 1 Please reference the Enhancement Level Reference Guide for more details. This option allows for a few parameters (ZONES, CHANNELS, SYSTEMS PERSONALITIES, UCL ENTRIES, VOICE ANNOUNCMENT, ENCRYPTION KEYS) on the entry tier to go to a mid tier level.	QA01770	426	$200.00
ADD: EXTREME NOISE REDUCTION	QA01833	426	$25.00
ADD: ACCELEROMETER / MAN-DOWN	QA01843	426	$150.00

Algorithm Options

Description	Nomenclature	APC	Price
ADD: TACTICAL REKEY WITH MULTIKEY Must order IV&D (Q947). Incompatible with MDC/ASTRO P25 OTAR with Multikey (Q498).	H04	426	$350.00
ENH: MULTIKEY	H869	426	$330.00
ENH: AES ENCRYPTION	Q629	426	$475.00

Antenna

Description	Nomenclature	APC	Price
DEL: DELETE STANDARD ANTENNA Deletes the standard UHF antenna(PMAE4065A).	H112	426	($10.00)
ALT: 1/4- WAVE 7/800 STUBBY (NAR659)	H122	426	$24.00

Battery

Description	Nomenclature	APC	Price
DEL: DELETE BATTERY (NNTN8128)	H207	426	($47.00)
ALT: IMPRES LI-ION 2300MAH FM (NNTN	QA00582	426	$110.00
ALT: IMPRES LI-ION 2300MAH	QA02749	426	$85.00

Belt Clip(s)

Description	Nomenclature	APC	Price
DEL: DELETE STANDARD BELT CLIP	H301	426	($10.00)
ADD: 2.5 INCH BELT CLIP	Q698	426	$12.00

Cable(s)

Description	Nomenclature	APC	Price
ADD: DATA CABLE PMKN4013A-GCAI cable at radio interface and USB connection at other end for computer programming. Please note that the PMKN4012A is NOT compatible with the APX 4000	Q157	655	$75.00

Programming

Description	Nomenclature	APC	Price
ADD: FRONT PANEL PROGRAMMING	Q53	426	$150.00

Service Options

Description	Nomenclature	APC	Price
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE Provides 2 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	H885BK	185	$84.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE Provides 3 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	H886AQ	185	$125.00
ADD: 3 YR RSA COMPREHENSIVE Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	HA00022AB	185	$228.00
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	Q884	185	$44.00
ENH:4 YEAR REPAIR SERVICE ADVANTAGE Provides 4 years of extended hardware repair coverage baginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	Q887	185	$162.00

Manual(s)

Description	Nomenclature	APC	Price
ADD: DATA LINK MANAGER APP CD-PORTABLES Option provides the NVN5424 Data CD. Please order this option if you would like the Data CD, and are unable to obtain it through other sources such as MOL.	QA00205	655	$0.00
DEL: USER GUIDE CD	QA01274	426	$0.00

Packaging

Description	Nomenclature	APC	Price
ADD: SINGLE UNIT PACKAGING	H842	426	$0.00

Test Results

Description	Nomenclature	APC	Price
ADD: TEST RESULTS / RATED AUDIO PRI	H799	426	$0.00

Accessories

Adapter

Description	Nomenclature	APC	Price
APX SURVEILLANCE KEYLOAD A	NNTN7869A	742	$65.00

Antenna

Description	Nomenclature	APC	Price
APX 7000 700/800- GPS ANTENNA	NAF5085A	555	$45.00

ANT 1/4 WAVE 7/800 STUBBY	NAR6595A	655	$29.00

Battery

Description	Nomenclature	APC	Price
BATT IMP STD LI ION 1900M 2000T	NNTN8128AR	453	$100.00
BATT IMP FM LI ION 2300M2350T	NNTN8129AR	453	$130.00
BATT IMP LI ION 2300M 2350T	PMNN4424AR	453	$115.00

Belt Clip(s)

Description	Nomenclature	APC	Price
BELT CLIP 2"	PMLN4651A	271	$11.00
2.5-INCH BELT CLIP	PMLN7008A	271	$12.00

Bluetooth, Mission Critical Wireless

Description	Nomenclature	APC	Price
WIRELESS 2.0 COMMPORT IC MODULE	NTN2571B	742	$139.00
ASSEMBLY,ACCESSORY,WIRELESS ACCY KIT, NFP, 9.5" CABLE FM Certified MCW BT Requires QA00583 to be ordered in the APX radio	NTN2573B	742	$295.00

Carrying Case(s)

Description	Nomenclature	APC	Price
APX2000/4000 SW LEATHER CARRY CASE2	PMLN6085A	271	$60.00

Charger

Description	Nomenclature	APC	Price
MOTOTRBO TRAVEL CHARGER	RLN6433A	785	$95.00
IMPRES MUC - US/NA PLUG	WPLN4212A	785	$495.00
IMPRES MUC W/DISPLAY - US/NA PLUG	WPLN4219A	785	$650.00
110 VAC 50/60 HZ US IMPRES SUC	WPLN4232A	785	$63.00

Charger Insert

Description	Nomenclature	APC	Price
INSERT, UNIVERSAL SUC Only compatible with XTS Single Unit Chargers	NNTN8169A	453	$45.00
INSERT, UNIVERSAL MUC Only compatible with XTS Multi Unit Chargers	NNTN8170A	453	$207.00

Earpieces

Description	Nomenclature	APC	Price
RECEIVE-ONLY FOAM EARBUD WITH 3.5MM PLUG - INTRINSICALLY SAFE (FM) When used with MTP3000 models, to be used with remote speaker microphones PMMN4078A, PMMN4072A and PMMN4074A	AARLN4885	742	$25.00
D-SHELL RX-ONLY EARPIECE(3.5MM)	PMLN4620A	742	$19.00
BONE CONDUCTION EAR MIC IMPRES Ear Microphone System with Progremmable Button and Large Push-to-Talk: Lightweight earpiece that picks up sound through bone conduction In digital mode, bone conduction can have a bassier (muffled) sound quality depending on the user	PMLN5653A	742	$399.00
RECEIVE ONLY EARPIECE W/TRANSLUCENT TUBE When used with MTP3000 models, to be used with remote speaker microphones PMMN4078A,	RLN4941A	742	$58.00

PMMN4072A and PMMN4074A EAR RCVR W/COIL CBL&3.5MM PLUG	WADN4190B	742	$43.00

Headsets

Description	Nomenclature	APC	Price
IMPRES TEMPLE TRANSDUCER FM Certified	PMLN5101A	742	$228.00
HEAVY DUTY HEADSET PMLN5275B FM Certified	PMLN5275B	742	$485.00
HEAVY DUTY HEADSET PMLN5275C	PMLN5275C	742	$679.00
CORE L/W HEADSET FM Certified	RMN5058A	742	$99.00
RX/TX BOOMLESS TEMPLE TRANSDUCER Temple Transducer Headset will ONLY work with: Microphone Compatibility HMN4101, HMN4103, HMN4104.	RMN5116A	742	$248.00

Microphone Speaker

Description	Nomenclature	APC	Price
LTD IP57 REMOTE SPEAKER MICROPHONE	PMMN4040A	372	$75.00
IMPRES SPEAKER MIC W/VOL, IP57	PMMN4046A	372	$95.00
IMPRES REMOTE SPEAKER MIC, NC	PMMN4050A	372	$95.00

Multi Unit Chargers

Description	Nomenclature	APC	Price
IMPRES MUC US 1-UP DISPLAY	WPLN4239A	785	$495.00

Remote Speaker Microphones - RSM's

Description	Nomenclature	APC	Price
IMPRES RSM NO DSPLY W JACK, NO CHNL	HMN4101B	372	$300.00
IMPRES RSM DSPLY W JACK, NO CHNL	HMN4103B	372	$345.00
IMPRES RSM DSPLY W JACK, W CHNL	HMN4104B	372	$375.00
LTD CORE RSM	PMMN4024A	372	$75.00
LTD SMART RSM	PMMN4025A	372	$90.00

Surveillance

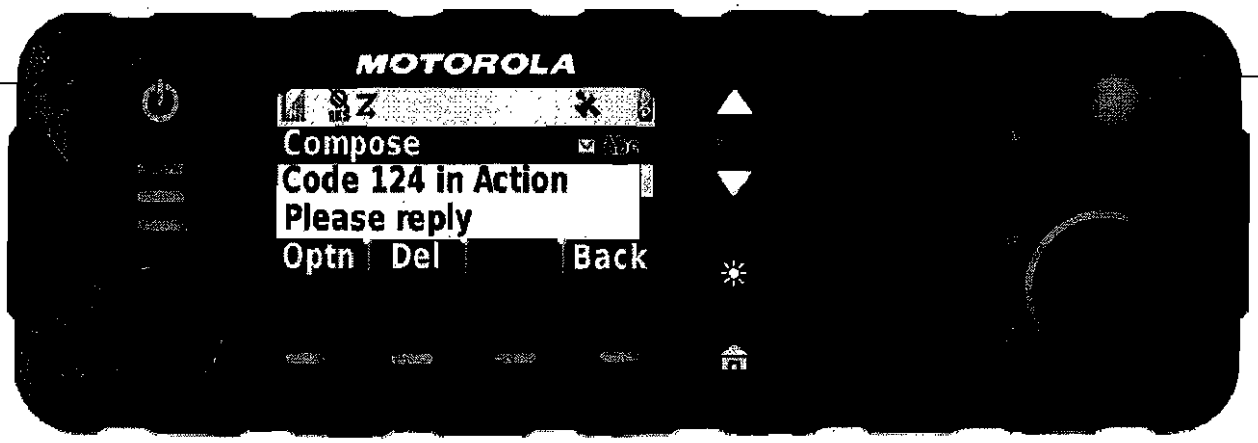
Description	Nomenclature	APC	Price
CORE EARSET - D-SHELL	PMLN5096A	742	$61.75
IMPRES 3 WIRE SURVEILLANCE-BLACK	PMLN5097A	742	$165.00
IMPRES 3 WIRE SURVEILLANCE-BEIGE	PMLN5106A	742	$165.00
IMPRES 3 WR W/TRANS TUBE BLK Kit with date code 0848 and beyond are compatible with APX	PMLN5111A	742	$173.00
IMPRES 3 WR W/TRANS TUBE BEIGE Kit with date code 0848 and beyond are compatible with APX	PMLN5112A	742	$173.00
SURVEILLANCE KITS CORE 1 WIRE BLK	RLN5878A	742	$40.00
SURVEILLANCE KIT 1 WIRE - BGE	RLN5879A	742	$40.00
IMPRES 2 WIRE W/TRANS TUBE BLK	RLN5882A	742	$122.00
IMPRES 2 WIRE W/TRANS TUBE BEIGE	RLN5883A	742	$122.00
SURVEILLANCE LOW NOISE KIT	RLN5886A	742	$20.00
SURVEILLANCE HIGH NOISE KIT	RLN5887A	742	$32.00

Data Compiled 16-May-2013 using DUP and all prices In USD

ASTRO® Digital APX 4500 Mobile Subscriber
700/800 MHz (10-35 Watts)
VHF - 136 -174 (10-50 Watts)
UHFR1 - 380-470 (10-40 Watts)
UHF R2 450-520 (10-45 Watts)

U1 & U2 Available at end of Q3 2013

Secure and Trunked Radio Systems



Guideline

******NOTE: APX 4500 digital radios require either a SOFTWARE KEY (QA01749) OR HARDWARE KEY (QA01648) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. ******

http://ecat.comm.mot.com/ecat/pricebooks/dup/ASK.htm

Online APX4500 Resources:

APX4500 Wiki Page

APX4500 is not approved for use on motorcycle configurations.

Please be sure to use the most current version of Motorola APX Customer Programming Software (CPS) when programming new radios

Section A: Required Main Model and Options

For standard Radio Operation (including Motorcycle) **Steps 1 - 9 must be** selected.

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

1: Main Model *(Must Select One)*

Low/Mid Power

Description	Nomenclature	APC	Price
APX4500 7/800	M22URS9PW1 N	471	$1,399.00
APX4500 VHF	M22KSS9PW1 N	471	$1,399.00
APX4500 UHF R1	M22QSS9PW1 N	471	$1,399.00
APX4500 UHF R2	M22SSS9PW1 N	471	$1,399.00

2: Software Packages *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: 3600 OR 9600 TRUNKING BAUD SINGLE SYSTEM Software Package INCLUDES: Digital 3600 or 9600 Baud (CPS Configurable), SmartZone, and OmniLink.	QA02756	471	$1,570.00
ADD: SOFTWARE ANALOG 3600 BAUD Software Package INCLUDES: 3600 Baud, SmartZone, and OmniLink.	Q443	471	$1,100.00
ADD: SOFTWARE P25 CONVENTIONAL	Q811	471	$650.00
ADD: ANALOG CONVENTIONAL	QA02829	471	$400.00

3: Advanced System Key Options *(Must Select One if Trunking is ordered)*

Description	Nomenclature	APC	Price
ADD: ADVANCED SYSTEM KEY - HARDWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA01648	655	$5.00
ADD: ADVANCED SYSTEM KEY - SOFTWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking.	QA01749	655	$0.00
ADD: ADVANCED WACN KEY SUPP DATA A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA02018	655	$5.00

3b: Optional System Enhancement Software *(Not Required)*

Description	Nomenclature	APC	Price
ADD: TDMA OPERATION Requires QA02756 software package	GA00580	471	$400.00

3c: Optional Data Link Manager CD *(Not Required)*

Description	Nomenclature	APC	Price
ADD: DATA LINK MANAGER	QA00205	471	$0.00
Option provides the NVN5424 Data CD. Please order this option if you would like the Data CD, and ere unable to obtain it through other sources such as MOL.			

4: Control Head Hardware

******O2 Control Head Hardware******

Description	Nomenclature	APC	Price
ADD: APX O2 CONTROL HEAD (Grey)	GA00804	656	$532.00

5: Control Head Software

Description	Nomenclature	APC	Price
ADD: CONTROL HEAD SOFTWARE	G444	656	$0.00

6: Mounting *(Must Select One for Mid Power Models)*

Description	Nomenclature	APC	Price
ADD: DASH MOUNT	G66	500	$125.00
Required for Control Station Operation			

7: RF Antenna

******No Antenna Needed* Is Valid *For All Bands******

Description	Nomenclature	APC	Price
ADD: NO RF ANTENNA NEEDED	G89	656	$0.00

7/800

Description	Nomenclature	APC	Price
ADD: ANT 3DB LOW-PROFILE 762-870	G174	471	$43.00
Corresponding kit: HAF4013			
ADD: ANT 3DB ELEVATED FEED 762-870	G175	471	$75.00
Corresponding kit: HAF4014.			
ADD: ANT 1/4 WAVE 762-870MHZ	G335	471	$14.00
Corresponding kit: HAF4016 **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.**			
ALT: ANT 3DB GAIN 762-870MHZ	W484	471	$38.00
Corresponding kit: HAF4017.			

VHF

Description	Nomenclature	APC	Price
ADD: 3BD ANT 136-174MHZ	G301	471	$38.50
ADD: 1/4 WAVE WHIP ROOF TOP 136-144	G296	471	$13.50
Corresponding kit: HAD4006			
ADD: 1/4 WAVE ROOF TOP 144-150.8	G297	471	$13.50

Corresponding kit: HAD4007

ADD: 1/4 WAVE ROOF TOP 150.8-162	G299	656	$19.50

Corresponding kit: HAD4008
Corresponding Motorcycle kit: RAD4004ARB

ADD: 1/4 WAVE ROOF TOP ANT VHF	G300	471	$13.50

Corresponding kit: HAD4009

ADD: 1/4 WAVE BROADBAND ANT 146-174	G629	471	$64.00

Corrasponding kit: HAD4017.

ADD: VHF ANT WIDEBAND 136-174 MHZ	G792	471	$75.00

Corresponding kit: HAD4021.

ALT: 1/4 WV BDBD ANT 136-162 MHZ	W652	471	$47.75

UHF R1

Description	Nomenclature	APC	Price
ADD: ANT 3.5DB 380-420 MHZ MAXRAD	G427	656	$55.00

Not Compatible with Motorcycle
Corrasponding kit: HAE6010.

ADD: ANT 5.0DB 380-420 MHZ MAXRAD	G429	656	$62.00

Not Compatible with Motorcycle
Corresponding kit: HAE6011.

ADD: ANT 5.0DB 445-470 MHZ	G430	656	$110.00

Not Compatible with Motorcycle
Corresponding kit: RAE4014ARB.

ADD: ANT 1/4 WAVE WHIP 380-420 MHZ	G425	656	$25.00

Not Compatible with Motorcycle
Corresponding kit: HAE6012.
DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.

ADD: ANT 1/4 WAVE WHIP 450-470 MHZ	G426	656	$25.00

Not Compatible with Motorcycle
TEMPORARY: Not compatible with U2-7/800 Bandsplit.
Corresponding kit: HAE4003.

ADD: ANT 3.5DB 450-470 MHZ	G428	656	$50.00

Not Compatible with Motorcycle
Corresponding kit: HAE4011.

ADD: ANT WIDEBAND 380-470 MHZ MAXRA	G431	656	$58.00

Not Compatible with Motorcycle
Corresponding kit: HAE6013.

ADD: ANT 2DB WIDEBAND 380-520 MHZ	GA00505	656	$50.00

TEMPORARY: Not compatible with U2-7/800 Bandsplit.
Corresponding kit: HAE6031_

UHF R2

Description	Nomenclature	APC	Price
ADD: ANT 5.0DB 445-470 MHZ	G430	656	$110.00

Not Compatible with Motorcycle
Corresponding kit: RAE4014ARB.

ADD: ANT 1/4 WAVE WHIP 450-470 MHZ	G426	656	$25.00

Not Compatible with Motorcycle
TEMPORARY: Not compatible with U2-7/800 Bandsplit.
Corresponding kit: HAE4003.

ADD: ANT 3.5DB 450-470 MHZ	G428	656	$50.00

Not Compatible with Motorcycle
Corresponding kit: HAE4011.

ADD: 5DB GAIN ANT 494-512 MHZ	G486	656	$58.00

Not Compatible with Motorcycle
Corresponding kit: RAE4016ARB.

ADD: ANT 1/4 WAVE 470-512 MHZ Not Compatible with Motorcycle TEMPORARY: Not compatible with U2-7/800 Bandsplit. Corresponding kit: HAE4004.	G490	656	$14.00
ADD: ANT 3 DB ROOF TOP 470-495 MHZ Not Compatible with Motorcycle Corresponding kit: HAE4012.	G493	656	$33.00
ADD: ANT 3 DB ROOF TOP 494-512 MHZ Not Compatible with Motorcycle Corresponding kit: HAE4013.	G494	656	$33.00
ADD: ANT LOW PROFILE 450-512 MHZ Corresponding kit: HAE6016 TEMPORARY: Not compatible with U2-7/800 Bandsplit. Corresponding Motorcycle kit: HAE6016	G510	656	$50.00
ADD: 2DB ANT WIDEBAND 450-520 MHZ TEMPORARY: Not compatible with U2-7/800 Bandsplit.Corresponding kit:HAE6015 Corresponding Motorcycle kit:HAE6015	G511	656	$70.00
ADD: ANT 2DB WIDEBAND 380-520 MHZ TEMPORARY: Not compatible with U2-7/800 Bandsplit. Corresponding kit: HAE6031_	GA00505	656	$50.00
ADD: ANT ROOF TOP 5 dB 470-494 MHz	GA00652	656	$81.75

8: Microphones *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED Select this option when ordering O3 Handheld Control Head (G72)	G90	656	$0.00
ADD: PALM MICROPHONE Corresponding kit: HMN1090	W22	656	$72.00
ADD: KEYPAD MIC GCAI Compatible with motorcycle configuration. Supports Remote Monitor. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079	W20	656	$180.00
ADD: CONTROL STATION DESK GCAI MIC Dash Mount Required Corresponding Kit: RMN5070	W382	656	$169.00
ADD: HANDSET/HANGUP COILED CABLE Coiled Cable, No Toggle Switch Accessory Kit: HKN1017	G876	656	$415.00
ADD: VISOR MIC REMOTE MOUNT Requires G235 Footswith PTT. Kit Number: RMN5054_	W872	656	$30.00
ADD: MODEL III GCAI KEYPAD HANDSET Corresponding kit: HMN4097A	GA00221	656	$295.00
ADD: GOOSENECK PTT Requires W872 Visor Mic. Kit Number: HMN1087A	G233	656	$56.00
ADD: HANDSET/HANGUP MIC ARMORED CABLE Armored Cable, No Toggle Switch Accessory Kit: HKN1018	W874	656	$300.00
ADD: PTT FOOTSWITCH Requires W872 Visor Mic. Kit Number: GLN7278_	G235	656	$51.00
ADD: PUSHBUTTON PTT	GA00304	656	$56.00

9: Speakers *(Must Select One)*

******O2 Control Head includes a built in speaker. G142 should always be selected unless additional external speaker is required******

G142 NO SPEAKER Required for Control Station

Description	Nomenclature	APC	Price
ADD: SPKR 15W WATER RESISTANT	G831	656	$60.00
ADD: NO SPEAKER NEEDED	G142	656	$0.00
ADD: AUXILARY SPKR 7.5 WATT Corresponding kit: HSN4031.	B18	656	$60.00
ADD: AUXILARY SPKR 13W (3.2OHM)	W432	656	$71.50

Section B: Control Station Requirements

CONTROL STATION OPERATION

(Dash Mount Only)

I. First, you must review your selection of the following options from "Section 1: Required Options".

- Step 1 *(Note: Main Model)*
- Step 2 *(Note: All listed options are compliant)*
- Step 3 *(Note: All listed options are compliant)*
- Step 4 *(Note: O2 Control Head is compatible with Control Station Application- Must only select one).*
- Step 5 *(Note: Must Select G444. The O2 Control Head Software is compatible with Control Station Application).*
- Step 6 *(Note: Must Select G66. Control Station operation is only offered in Dash mount configuration)*
- Step 7 *(Note: All listed options are compliant)*
- Step 8 *(Note: Some Microphones are **NOT** compatible. Please read option description).*
- Step 9 *(Note: Must Select G142 - No Speaker Needed)*

II. You Must Select W665. G91 is needed for control station operation, but is an optional purchase.

SPECIFIC CONTROL STATION OPTIONS

Control Station Operation and Power Supply

Description	Nomenclature	APC	Price
ADD: CONTROL STATION POWER SUPPLY	G91	656	$269.00
ADD: CONTROL STATION OPERATION	W665	656	$70.00

III. Features listed in "Section C: Optional Features" are optional, if applicable. Please read the option's description to determine compatibility.

ASTRO Text Messaging Service

ASTRO Text Messaging Service is available on the ASTRO 25 APX 4500 mobile radio. Text Messaging Service (TMS) allows subscriber users to send and receive text messages to other subscribers or dispatch operators. Users can select messages and addresses from a predefined list or enter freeform text messages and addresses via the keypad. Text Messaging Service is available on ASTRO P25 IV&D Systems and Subscribers.

For full Text Messaging functionality, including freeform text messaging and addressing, must order an O2 Control Head with Keypad Microphone. O2 without the Keypad Microphone supports Limited Text Messaging functionality such as selecting predefined messages or addresses from a list programmed in the radio.

Ordering requirements for APX 4500 Mobile:

- Requires O2 Control Head (GA00804)
- Full functionality including free form messaging requires the Keypad Microphone (W20) for O2 Control Head
- QA02756 or Q811 must be ordered
- Packet Data Interface (W947)

NOTE: There is no specific option to order for the Text Messaging Service on the subscribers as the functionality is included in the Packet Data option.

Section C: Optional Features

The following options are **optional** and will provide additional capabilities, if required.

System Enhancement Options

Description	Nomenclature	APC	Price
ADD: MULITCAST VOTING SCAN This feature allows for voting of the Conventional Channels ONLY.	G387	656	$200.00
ENH: OVER THE AIR PROVISIONING Compatible with P25 Trunking OR ASTRO Conventional only; There is NO Analog Functionality for this feature. Requires W947 Data option. To do in field POP25 programming must use Advanced System Key (DVN4046A). Single unit POP25 with batch programming for trunking configuration coming in future.	G996	656	$100.00
ADD: RS232 PACKET DATA INTERFACE	W947	656	$200.00
ADD: GPS ACTIVATION Requires IV&D Activation.	GA00229	656	$100.00
ENH: TRUNKED RADIO TRACE/ REMOTE MO Trunked Radio Trace and Remote Monitor	G170	471	$75.00
ADD: ONE TOUCH/STATUS MSG	G683	471	$75.00
ADD: APX 4500 RADIO AUTHENTICATION	QA01767	471	$100.00

Enhancement Level Reference Guide

GPS Antennas

Selection is required when ordering GA00229, GPS Activation

Description	Nomenclature	APC	Price
ADD: NO GPS ANTENNA NEEDED	GA00235	656	$0.00
ADD: GPS ANTENNA	GA00226	656	$75.00
ADD: GPS ANTENNA GLASS MT	GA00270	656	$75.00

GPS Outdoor Location Solution Overview

Encryption Algorithms

All APX4500 Mobile Radios ship standard with Single Key Advanced Digital Privacy (ADP). Multiple algorithms are NOT supported on APX4500.

******ADP Privacy is not FIPS compliant - ADP Privacy not supported by OTAR - ADP is digital P25 conventional / P25 trunking only******

Description	Nomenclature	APC	Price
ADD: MULTIPLE KEY ENCRYPTION OPERATION REQUIRED when using more than one encryption algorithm or encryption key.	W969	656	$330.00
ADD: AES ENCRYPTION APX Requires P25 operation.	G843	656	$475.00

Data Cables

Description	Nomenclature	APC	Price
ADD: RS232 DATA INTFC CBL DASH 6 FT RS232 DATA CABLE Corresponding kit: HKN6160A.	G303	656	$50.00
ADD: USB DATA INTFC CABLE-DASH 6 FT USB W/IGNITION SENSE Corresponding kit: HKN6163B. Can be used to program APX Mobile Radios.	G308	656	$50.00

RF Modem

Description	Nomenclature	APC	Price
ENH: ENABLE RF MODEM The APX mobiles do not support Site Lens or System Watch. Therefore, the APX RF Modem function does not support the legacy System Watch or Site Lens applications. The APX RF Modem supports Conventional or 9600 Trunking only. Enabling the RF Modem in conventional mode allows provisioned APX portables to pass accountability data through the portable option Q445.	G319	656	$0.00

RF ID Tag

Description	Nomenclature	APC	Price
ADD: RFID LABEL	GA00268	656	$15.00

Service Options

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$64.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$246.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00
ENH: 3 YR CANADA EXTND WRNTY APX	GA00314	386	$200.00
ENH: 5 YR CANADA EXT WRNTY APX	GA00317	386	$274.00

Amplifier

(UHF and VHF Only***)***

Description	Nomenclature	APC	Price

ADD: RF PREAMP Options applies only to VHF & UHF radios.	W12	656	$66.00

Test Results

Description	Nomenclature	APC	Price
ADD: PRINTED TEST RESULTS APEX	G799	656	$0.00

Section D: Aftermarket Accessories

Antenna

7/800

Description	Nomenclature	APC	Price
ANTENNA (762-870 MHZ) 3DB LOW-PROFILE	HAF4013	500	$43.00
ANTENNA (762-870 MHZ) 3DB ELEVATED FEED	HAF4014	500	$75.00
ANTENNA (762-870 MHZ) 1/4 WAVE	HAF4016	500	$23.00
ANTENNA (762-870 MHZ) 3DB GAIN COLLINEAR	HAF4017	500	$38.00

VHF

Description	Nomenclature	APC	Price
ANTENNA, VHF (136-144MHZ) 1/4 WAVE ROOF TOP High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohms, nominal	HAD4006	554	$19.50
ANTENNA, VHF (144-150.8 MHZ) 1/4 WAVE ROOF TOP High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohms, nominal	HAD4007	554	$19.50
ANTENNA, VHF (150.8-162 MHZ) 1/4 WAVE ROOF TOP High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohms, nominal	HAD4008	554	$19.50
ANTENNA, VHF (162-174 MHZ) 1/4 WAVE ROOF TOP High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohms, nominal	HAD4009	554	$19.50
ANTENNA VHF 1/4 WAVE	RAD4002ARB	554	$100.00
ANTENNA VHF 1/4 WAVE	RAD4004ARB	554	$100.00
ANTENNA VHF 1/4 WAVE	RAD4005ARB	554	$75.00
ANTENNA 132-174 3DB GAIN	HAD4022A	585	$65.50
ANT ROOF MT WB VHF 146/174	HAD4017A	500	$44.00

Adapters

Description	Nomenclature	APC	Price
AUDIO CABLE ADAPTER	HKN6158	500	$49.00
ADAPTER CABLE DATA	HKN6159	500	$49.00
KEYLOADING CABLE ADAPTER (GCAI)	HKN6182	514	$41.50

Used to adapt keyload cable TKN8531 for all APX 7500, APX,8500, APX4500, XTL 5000 and XTL 2500. Not compatible with XTL1500.

Control Station Tray and Power Supply

Description	Nomenclature	APC	Price
MOBILE DESK TRAY	HLN6042	617	$77.00
PS 14V 10A 117/240 VAC.	HPN4007C	500	$296.00

Programming and Data Cables
(Please see CPS PART NUMBER GUIDE for cable descriptions)

Description	Nomenclature	APC	Price
CABLE CH, PROGRAMMING, USB	HKN6184C	518	$51.00
CABLE, DATA, USB, 4.5M, XTL5000	HKN6172B	500	$85.00

Emergency

Description	Nomenclature	APC	Price
EMERGENCY FOOT SWITCH	HLN5113	604	$61.75

Microphones

Description	Nomenclature	APC	Price
XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00
AS. SPECTRA & XTL5000 DESKTOP MIC	RMN5070A	706	$172.00
HANDSET/HANGUP (HANGUP CUP)	HLN1457	706	$285.00
MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	706	$295.00
PUSH BUTTON PTT	RLN5926A	706	$39.00

Microphone Extension Cable

Description	Nomenclature	APC	Price
CABLE, MOBILE MIC EXTENSION, 10FT Not for use with the W20 GCAI Microphone.	PMKN4033A	706	$42.00

Power

Description	Nomenclature	APC	Price
POWER CABLE, 10 FT. (LOW/MID POWER) 30 & 35 WATT	HKN4191	412	$18.00
POWER CABLE, 20 FOOT TO 12V BATTERY VHF & UHF models.	HKN4192	508	$38.25
CONTROL HEAD / IGNITION SENSE POWER CABLE	HKN6188	514	$20.75

Speakers

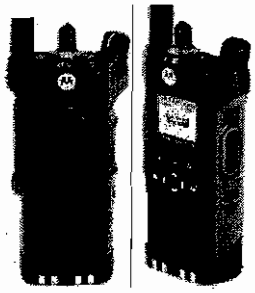
Description	Nomenclature	APC	Price
EXTERNAL WATER RESISTANT SPEAKER 15 WATTS	HSN4040A	795	$76.00
MCS EXT SPKR 13W	HSN4032B	500	$71.50
EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	HSN4038	476	$60.50

Manuals

*** Currently, the APX4500 O2 User Guide and the APX4500 O2 Install Manual can be downloaded from MOL (Motorola Online). ***
*** These documents can be found in Resource Center > Product Information >Manuals >Two-Way Mobile ***

For product questions please contact your Subscriber BDM or Product Planner (GWT846)

Data Compiled 16-May-2013 using DUP and all prices in USD



ASTRO® Digital APX 6000™ Portable Series

UHF Range 1

UHF Range 2

P25 Phase 2 Single Band Capable Radio

Special Note for United States - State & Local Markets only:

In accordance to a FCC mandate, VHF (150-174 MHz) and UHF R1 (421- 450 MHz) products operating on Part 90 frequencies will be restricted to 12.5 kHz or narrower operations on Jan. 1, 2013.

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749), HARDWARE KEY (QA01648), OR WACN KEY SUPPLEMENTAL DATA (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY or QA02018- WACN KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. ******

Ship Card

Features

All ASTRO Digital APX 6000 models include the following features:

- Dual Microphone
- 0.5 Watt Rated Audio
- Integrated GPS Hardware Capable*
- Integrated Bluetooth Hardware Capable*
- Detacheble Belt Clip for Top Display Model
- Lilon 2150 mAh Battery (PMNN4403)
- Antenna (Dependent on Frequency Band and Type)
- Intelligent Lighting
- ADP Privacy - ships standard with Single Key
- 3 Programmable Side Buttons
- Orange Programmable Button
- 16 Position Mode Rotary Select Switch
- Angled On/Off Volume Knob
- Low Battery Alert Tone
- Noise Cancellation Software
- 1 Top Mounted Programmable 3 Position Toggle Switch
- Top Display: 1 line of text, 1 line of icons, 0 menu lines
- IP67 ships standard with every radio model

ASTRO Digital APX 6000 Limited Keypad and Full Kepad with Dual Display Model also Includes:

- Universal Carry Holder
- Unified Call List
- Front Color Display: 4 lines of text, 2 lines of icon
- Radio Profiles
- Full Keypad: 4 x 3 alpha-numeric 3 progremmable button, 4 way navigation, home and data buttons

*** Must purchase Software to ENABLE**

*** All APX6000 Portable Radios ship standard with SW and HW ADP Privacy**

All ASTRO Digital APX 6000 Portables are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the current RF capabilities of the radio)

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749), HARDWARE KEY (QA01648), OR WACN KEY SUPPLEMENTAL DATA (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY or QA02018- WACN KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. Also, an Advanced System Keys**

(ASK- DVN4046) will be required to be ordered. ****

http://ecat.comm.mot.com/ecat/pricebooks/dup/ASK.htm

General Information

The ASTRO Digitel APX 6000 Portable Line offers **THREE** different radio hardwere models:

Hardware Model	Modes	Alphanumeric Display Lines/Characters	Keypad	Navigation Pad
ASTRO APX 6000 Top Display	96	8 (top)	-	No
ASTRO APX 6000 Limited Keypad	870	14 (front) & 8 (top)	-	Yes
ASTRO APX 6000 Full Keypad	870	14 (front) & 8 (top)	4 x 3	Yes

Operating Modes

ASTRO Digital APX 6000 Radio Models are capeble of operating in four different voice communication modes:

- Normal Analog (clear voice)
- 3.6KB ASTRO Digital (both clear and coded voice)
- 9.6 KB ASTRO 25 Digital (both Cleer and Coded voice)
- 9.6KB 12.5kHz 2 slot digital TDMA (both clear and coded voice).
- Will be capable of APCO25 Phase 2 functionality in future software releases.

TDMA

FDMA (Frequency Division Multiple Access) is e proven technology that is widely used today in radio systems and is part of APCO 25 Project 25 Phase 1 standard. FDMA carries one call per channel. TDMA (Time Division Multiple Access) will be part of P25 Phese 2 standard and provides double the voice capacity as 2 calls can share 1 channel. Customers can add more users to their systems without the need of additional frequencies or infrastructure. The APX radios support both P25 Phase 1 and TDMA technologies seamlessly. Using Motorola's unique Dynamic Duel Mode (DDM) capability, the radios dynamically switch between FDMA and TDMA without the user having to chenge channels. This provides interoperability on demand with existing and future networks.

FLASHport AFTERMARKET UPGRADES

The ASTRO Digital APX 6000 Portable Series Radios are part of the FLASHport Program. This means that ASTRO Digital APX 6000 hardware models can be loadad with different software packages that provide the features and functionalities that our customers require.

System Enhancement Options can be loaded at the time of redio purchase or at a later date through the use of software field upgrades (a USB ceble is required for all software upgrades.) The ASTRO Digital APX 6000 portable can be upgraded electronically in the field with new features in the current system or to new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

Ordering Requirements

Ordering procedure is as follows...

Steps	Required Options	Comments
		APX Digital Portable Radio-
1	APX 6000 UHF Main Model	a. H98QDD9PW5AN b. H98QDF9PW6AN c. H98QDH9PW7AN d. H98SDD9PW5AN e. H98SDF9PW6AN f. H98SDH9PW7AN
2	Operation Mode	a. Q241; Analog Operation b. Q806; ASTRO digital CAI operation
3	System Enhancement Software	a. H35; Conventional Operation b. H37; Smartnet Operation c. H36; Smarzone Operation d. Q173; Smartzone Omnilink (non-

P25)
e. Q361; P25 9600 Baud Trunking
f. QA00580; TDMA

1. Order the APX 6000 Portable Series as the main line item.

- Each hardware model MUST be ordered with one operation mode.
- Default battery is LiIon 2150mAh (-20°c)
- Default belt clip for top display models and carry holder for limited keypad and full keypad models
- Default Antenne is the single appropriate antenna for your RF configuration.

2. Select any other system enhancement options you desire.

- Note - APX Radio ships with 12 month standard warranty.

- Note: Model 1.5 comes stenderd with 3" belt clip.

Common Software Features Supported By

	H38 "SmartZone"			
	"Analog Operation"(Q241/H38)	"ASTRO Digital"(Q806/H38)	"ASTRO Digital"(H38/Q806/Q361)	"TDMA"(QA00580AA)
	Non-Project 25 (3600 Baud)	Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	TDMA OPERATION
RADIO WIDE FEATURES				
Maximum Modes				
ASTRO Digital APX 6000 Top Display	96	96	96	96
ASTRO Digital APX 6000 Limited Keypad	870	870	870	870
ASTRO Digital APX 6000 Full Keypad	870	870	870	870
Analog and Digital Operation	Yes	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels* (Ref FCC Note)	Yes	Yes	Yes	Yes
Secure Capable	No	Yes (Digital Only)	Yes (Digital Only)	Yes (Digital Only)
One Touch Operation	Yes	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes	Yes
Surveillance Mode	Yes	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes	Yes
Radio Lock	Yes	Yes	Yes	Yes
Smart Battery	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified above.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
DTMF Signaling	Future	Future	Future	Future
Quick-Call Signaling	Future	Future	Future	Future
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Conventional Interoperable Features when used in the ASTRO Digital CAI Mode (Q806).				
Unaddressed Voice Call (Dispatch Call)	Yes	Yes	Yes	Yes
Talk Group Call	Yes	Yes	Yes	Yes

Group Call Alert™	Yes	Yes	Yes	Yes
Talk Group Identification (TGID)	Yes	Yes	Yes	Yes
Selective Call (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
PTT ID (Individual Identification)	MDC-1200 Only	Yes	Yes	Yes
Call Alert Encode/Decode	MDC-1200 Only	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	MDC-1200 Only	Yes	Yes	Yes
Telephone Interconnect	Yes	Yes	Yes	Yes
Manual Phone Number Entry	Dual Display Only	Dual Display Only	Dual Display Only	Dual Display Only
Selective Radio Inhibit	MDC-1200 Only	Yes	Yes	Yes
Radio Check	MDC-1200 Only	Yes	Yes	Yes
Status/Message	MDC-1200 Only	Yes	Yes	Yes
Trunking Type II Only Features				
Maximum Number of Trunked Systems-20	Yes	Yes	Yes	Yes
Talkgroup Calls	Yes	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes	Yes
Analog/Digital Dual Mode Scan	No	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only	Status Only
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes	Yes
Remote Monitor/Radio Trace	Yes	Yes	Yes	Yes
Reprogram Request	Yes	Yes	Yes	Yes

H38 "SmartZone"				
	"Analog Operation" (Q241)	"ASTRO Digital" (Q806)	"ASTRO Digital" (H37/Q808/Q361)	"TDMA" (QA00580AA)
		Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	Project 25 (TDMA Operation)
Trunking Type II Only Features				
Voice on Control	-	-	-	-
SmartZone Automatic Site Registration	Yes	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes	Yes
SmartZone Preferred Site	Yes	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the APX 6000 portable series. Separation of frequencies can be as wide as the allowable band per radio model with no degredation of any performance specifications. If an incorrect antenna is used, degraded performance may be experisnced.

ZONED OPERATION

This option converts MODE-ONLY ASTRO Digital APX 6000 portables to Zone Operation radios.

For Top Display radios, a maximum of 16 channels (conventional RX and TX pairs or trunking talkgroups) are accessible in a zone. There is a maximum of six accessible zones (96 channels) when zone selection operation is programmed on the 3 position toggle switch and the Zone Bank feature is programmed on a button. The Zone Bank feature allows the 3 position toggle switch to access zones 1-3 or 4-6.

For the Top Display radio there is a maximum of 6 accessible zones, and 16 accessible channels per zone with the overall maximum of 96 channels. For the Dual Display Radios with Limited keypad or Full Keypad, there is a maximum of 50 zones, 625 channels per zone with the overall maximum of 870 channels. These radios provide "ZONE" and "CHAN" menus that allows access to zones and channels not accessible via the switches.

*Note: Top Display Radio codeplugs can be programmed with the same zone/channel configuration as the Dual Display Radios even though not all of the zones and channels are accessible. This is useful for having a common zone/channel template that can be shared between the different radio models.

PROJECT 25 ENCRYPTION

The mode of operation is programmed on a channel-by-channel basis. With the coded/clear switch set to the clear mode, the ASTRO Digital APX6000 radio is capable of transmitting clear analog voice or clear (unencrypted) ASTRO Digital voice, depending on the channel programming. With the coded/clear switch set to

the coded mode, the ASTRO Digital APX 6000 radio will transmit ASTRO Digital encryption depending on the channel programming. ASTRO Digital encryption provides secure communications. ASTRO Digital Encryption (operation in encrypted mode while also operation in 3.6KB or 9.6KB and TDMA ASTRO mode) is capable of XL type encryptions; ASTRO Digital Encryptions does not operate with non-XL encryptions.

An encryption option is not required for either clear analog operation or clear ASTRO Digital operation. Encryption can be ordered with the ASTRO Digital APX 6000 radio either as a factory installed option or separate from the radio for later field installation. ASTRO Digital APX 6000 radio functions include selected ASTRO digital signaling and digital speech coding.

When ordering any of the Encryption Algorithms:

- The DES-OFB and AES encryption algorithms offered are compliant with digital Project 25 standards and does not support analog encryption operation.
- **Requires** the ASTRO Digital CAI (Q606) to operate the DES-OFB and AES encryption.

When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

- Encryption Algorithms can be ordered later via Flash Port.

FIPS 140-2 Compliance

Encryption Modules equipped with AES are FIPS 140-2 compliant. Details regarding the certification, and copies of the relevant certificates, can be obtained on the NIST website at: http://csrc.nist.gov/groups/STM/cmvp/validation.html.

Further information regarding FIPS 140-2 certification may be found using the following link - FIPS 140-2 Crypto Module Validation Program (CMVP) http://csrc.nist.gov/groups/STM/cmvp/index.html

FM INFORMATION

APX 6000 Portable Radio when properly equipped with options Q393 OR QA00581 OR QA00582 OR QA02616 are Factory Mutual (FM/CSA) Approved as intrinsically safe for use in Div 1, Class I , Groups C,D, Class II groups E, F, G, Class III Div 2, Class I A, B,C,D.

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on APX 6000 Dual Display Portable radios. Advanced Messaging is NOT supported on APX 6000 Top Display Portable radios.

Ordering ASTRO Text Messaging for APX 6000 Portable Requires:

- APX 6000 Dual Display
- ASTRO Digital CAI Operation (Q606)
- P25 Conventional (H35)
- Packet Data Interface (Q947)

OR

- APX 6000 Dual Display
- ASTRO Digital CAI Operation (Q606)
- SmartZone Operation (H36)
- ASTRO Project 25 Trunking Software (Q361)
- Packet Data Interface (Q947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

Outdoor Personnel Location Global Positioning Satellite (GPS) Feature

The personnel outdoor location tracking GPS feature enables a dispatcher the ability to locate on-foot patrols and out of the vehicle officers who are involved in life threatening situations. The radio user's GPS position information is sent over the ASTRO 25 Integrated Voice & Data (IV&D) network and is delivered to the dispatch operator using a third party mapping display application at the dispatch center *(Mapping Application is not yet available through Motorola at this time, however an Application Developers Tool Kit is available for 3rd party vendors to use to modify existing applications. See link below for more details.)* On the Dual Display model only it is possible to the user to determine their own location (latitude/longitude) through the use of the location menu.

During normal operation the radio battery capacity will be reduced by 10% to 16%.

In order to obtain an initial GPS fix position, the radio must be located in an open sky, outdoor environment with no berriers thet could affect the signal around you or above you. During this initial fix, the radio should NOT be worn on the body as this may affect the process of acquiring signal and/or add additional time to first fix.

NOTE LIMITATIONS OF USE:

GPS works best in an open sky (clear view of the sky with no obstructions) environment. Due to the limitations of the technology, there are certain situations which prevent GPS coverage. These situations include but are not limited to:

- Underground locations (tunnels, subways, etc.)
- Inside of buildings, elevators, parking garages, trains, other covered vehicles, etc.
- Under metal or concrete roof structures
- Urban canyons (between tall buildings or under dense tree coverage)

***GPS Performance may be degraded when the radio is worn against the body and/or against the body within a vehicle.

Due to the limitations mentioned above, GPS should only be utilized as a method to assist the user with location information but not as a means for mission critical communication. Therefore, in any emergency situation, the location should always be verbally reported to the dispatcher.

For further information regarding System Requirements, go to the location solutions price pages at:
http://ecat.comm.mot.com/ecat/pricebooks/dup/ALOCATION.htm

Ordering GPS for APX 6000 Portable Requires:

- Enable Internal GPS Operation (QA00782)
- Packet Data Interface (Q947)

UHF SELF-QUIETING SPURS	
UHFR1 Models (1.5, 2.5, 3.5)	**Frequencies**
	383.975
	393.2125
	395.975
	432
	456
UHFR2 Models (1.5, 2.5, 3.5)	**Frequencies**
	456
	479.975
	480

CPS INFORMATION

****Please note that a NEW version of CPS (RVN5224) is required for initial customer orders for this product. This new version of CPS is required for the APX radio shipments. ****

FCC Information

Band/Model	Power Output	Transmitter Certification	Emissions	Applicable Rules
UHF Renge 1 (380-470 MHz)	1 to 5 Watts	AZ489FT4892	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W	90
UHF Range 2* (450-520 MHz)	1 to 5 Watts	AZ469FT4903	11K0F3E, 8K10F1D, 8K10F1E, 8K10F1W	90

*The FCC is mandating all Public Safety and Industrial/Business licensees convert existing 25 kHz efficiency operations in the UHF R1 band to minimum 12.5 kHz efficiency analog or digital operation, and that going forward they implement no more 25 kHz efficiency systems. To implement this mandate, the FCC developed rules and deadlines that impact both radio users and equipment providers.

Ordering Guide

Enhancement Level Reference Guide

Fleet Management Ordering Guide

APX Portable Comparison Chart

APX Family Brochure

Spec Sheet

RSA Comprehensive

RSA

Portable Accessories Catalog

- Radio Applications \ Advanced System Key

Models

Description	Nomenclature	APC	Price
APX8000 UHF R2 MODEL 1.5 PORTABLE	H98SDD9PW5 N	461	$1,900.00
APX8000 UHF R2 MODEL 2.5 PORTABLE	H98SDF9PW6 N	461	$2,200.00
APX8000 UHF R2 MODEL 3.5 PORTABLE	H98SDH9PW7 N	461	$2,600.00
APX8000 UHF R1 MODEL 1.5 PORTABLE	H98QDD9PW5 N	461	$1,900.00
APX6000 UHF R1 MODEL 2.5 PORTABLE	H98QDF9PW6 N	461	$2,200.00
APX8000 UHFR1 MODEL 3.5 PORTABLE	H98QDH9PW7 N	461	$2,600.00

Options

Operation Mode

Description	Nomenclature	APC	Price
ADD: ANALOG OPERATION Requires either a H35, H37, or H38	Q241	461	$0.00
ADD: ASTRO DIGITAL CAI OPERATION Requires either a H35, H37, or H38	Q806	461	$515.00

System Enhancement Software

Description	Nomenclature	APC	Price
ADD: CONVENTIONAL OPERATION	H35	461	$500.00
ADD: SMARTZONE OPERATION A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4048 to be purchased.	H38	461	$1,200.00
ADD: SMARTZONE OMNILINK (NON-P25) Requires H38 SmartZone and Q806 Digital Operation (required for 3600 baud only trunked systems.) APX 6000 digital radios require Advanced System Keys (ASK - DVN4048A) to be configured to operate on a trunking system.	Q173	461	$200.00
ADD: P25 9600 BAUD TRUNKING Requires H38 and Q806. INCLUDED at "NO Charge" Q173-OmniLink. APX 6000 digital radios require Advanced System Keys (ASK- DVN4048A) to be configured to operate on a trunking system.	Q381	461	$300.00
ADD: TDMA OPERATION For APX6000 and APX6000XE, QA00560 requires Q806, H38, Q381. If ordering on APX6000U, QA00560 requires QA02756. A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4048 to be purchased.	QA00560	461	$400.00
ADD: ENABLE BLUETOOTH SOFTWARE	QA00563	461	$150.00
ENH: ENABLE INTERNAL ACTIVATION AND GPS BASIC FUNCTIONALITY Must have IV&D (Q947) enabled.	QA00782	461	$100.00
ADD: ADVANCED SYSTEM KEY - HARDWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4048 to be purchased.	QA01846	655	$5.00
ADD: ADVANCED SYSTEM KEY - SOFTWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking.	QA01749	655	$0.00
ADD: ADVANCED WACN KEY SUPP DATA A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4048 to be purchased.	QA02018	655	$5.00

Systems Enhancement Options

Description	Nomenclature	APC	Price
ADD: PROGRAMMING OVER P25 (OTAP) Compatible with P25 Trunking and Conventional Operation. POP25 requires AES encryption for ASTRO Conventional operation. Must have IV&D (Q947) enabled. To do in field POP25 programming must use Advanced System Key (DVN4048A)	G996	461	$100.00
ENH: RADIO TRACE/ REMOTE MONITOR Requires Q806 and either H37, H38, or H35.	H43	461	$75.00
ENH: ONE TOUCH/STATUS MSG Only compatible with Model 2.5 and 3.5 Radios	H46	461	$75.00
ADD: MULTICAST VOTING SCAN	Q387	461	$200.00
ADD: APX Personnel Accountability	Q445	461	$150.00
ADD: RADIO PACKET DATA	Q947	461	$200.00

This option is only capable of being used on P25 Digital Conventional and 9600 Trunking Systems. This option is required for IV & D operation.

ADD: DVRS PSU ACTIVATION Enables DVRS Enhanced PSU functionality on APX Radios. Requires XTL MSU and Digital Operation.	QA00631	655	$100.00
ADD:LINK LAYER RADIO AUTHENTICATION Requires P25 Trunking (Q361)	QA01787	481	$100.00
ENH: ENHANCED ZONE BANK This option will increase the channel/talkgroup capacity on a Model 1 from 96 to 670. Zone Up/Zone Down, Zone Bank Up/Zone Bank Down will be unlocked with this option.	QA01788	481	$75.00
ENH: ENHANCEMENT LEVEL 2 Please reference the Enhancement Level Reference Guide for more details. This option allows for a few parameters (ZONES, CHANNELS, SYSTEMS PERSONALITIES, UCL ENTRIES, VOICE ANNOUNCMENT, ENCRYPTION KEYS) on the mid tier to go to a high tier	QA01771	481	$200.00
ADD: EXTREME 1-SIDED NOISE REDUCTION Compatible with all APX6000 Radios. Comes standard on APX6000XE.	QA01833	481	$25.00
ADD: ACCELEROMETER/ MAN DOWN	QA01843	481	$150.00

Algorithm Options

Description	Nomenclature	APC	Price
ADD: TACTICAL REKEY WITH MULTIKEY Must order IV&D (Q947). Incompatible with MDC/ASTRO P25 OTAR with Multikey	H04	481	$350.00
ENH: DVP-XL ENCRYPTION Compatible with Digital and Analog (25kHZ Only) operations. ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES .	H797	481	$487.00
ENH: MULTIKEY	H869	481	$330.00
ENH: AES/DES,DES-XL,DES-OFB ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES. Incompatible with Q625 and Q829	Q15	481	$799.00
ENH: MDC & ASTRO P25 OTAR W/ MULTIKEY Incompatible with the H04 option since Tactical OTAR is included with the Q498 option. Tactical OTAR can only be utilized when IV&D is purchased.	Q498	481	$740.00
ENH: DES,DES-XL,DES-OFB ENCRYPTION Compatible with Analog 25kHZ/DES-OFB Digital 12.5kHZ Only. ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES	Q625	481	$599.00
ENH: AES ENCRYPTION ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES	Q829	481	$475.00

Antenna

Description	Nomenclature	APC	Price
DEL: DELETE STANDARD ANTENNA	H112	481	($10.00)
ADD: GPS STUBBY ANTENNA (NAG4000) Deletes Standard Antenna and ADDS GPS ONLY antenna.	QA00785	481	$18.00
ALT: UHFR1 GPS STUBBY ANTENNA (FAF5259A) Length: 3.66" Only Compatible with- H98QDD9PW5AN, H98QDF9PW6AN, H98QDH9PW7AN	QA02017	481	$55.00
ALT: UHFR2 GPS STUBBY ANTENNA (FAF5260) Only Compatible with - H98SDD9PW5AN, H98SDF9PW6AN, H98SDH9PW7AN	QA02017	481	$24.00

Battery

Description	Nomenclature	APC	Price
DEL: DELETE STANDARD BATTERY Deletes standard battery PMNN4403 for APX6000 or NNTN8092 for APX6000XE	H207	481	($47.00)
ALT: NIMH IMPRES 2100MAH IP67 BATTERY (NNTN7037) The option will delete the standard option and replace with NIMH IMPRES 2100MAH IP67 BATTERY(NNTN7037)	H335	481	$78.00
ALT: NIMH IMPRES 2000MAH FM/CSA IP67 (NNTN7036) The option will delete the standard battery and replace with NIMH IMPRES 2000MAH FM IP67 BATT (NNTN7036)	Q393	481	$95.00
ALT: NIMH IMPRES 2000 MAH FM/CSA DELTA T (NNTN7035) The option will delete the standard battery and replace with LIIDN 2000 MAH DELTA-T (NNTN7035). This battery is compatible with H469 and meets FM certification.	QA00581	481	$133.00
ALT: LIION IMPRES 4100 MAH FM/CSA IP67 (NNTN7033A) This option will delete the standard battery and replace it with LITHIUM ION 4000MAH IMPRES (NNTN7033). This battery is compatible with H469 and meets FM certification.	QA00562	481	$185.00
ALT: LIION 4200MAH IMPRES DELTA-T This option will delete the standard battery and replace it with LIION 4200MAH IMPRES(NNTN7034). This battery is compatible with H469.	QA00781	481	$115.00
ALT: LIION IMPRES IP67 2900MAH (NNTN7036) This option will delete the standard battery and replace it with LIION IMPRES 2900MAH IP67 (NNTN7038).	QA01837	481	$100.00
ALT: NIMH IMPRES 2000MAH NON-FM DELTA T This battery will delete the standard battery and replace it with NIMH IMPRES 2000MAH (NNTN7573). This battery requires H469 to meet Delta-T standards. This battery option does NOT provide FM certification.	QA02728	481	$83.00
ALT:LIION IMPRES FM/CSA 2300M (NNTN8092) This option will delete the standard battery and replace it with LIION IMPRES 2300M (NNTN8092). This option is compatible with H469 and meets FM certification.	QA02618	481	$50.00

Belt Clip(s)

Description	Nomenclature	APC	Price
DEL: DELETE BELT CLIP/ BASIC CARRY HOLDER	H301	481	($10.00)
ALT: BASIC CARRY HOLDER (PMLN5709) This carry holder equipped with a 2.5" belt clip ships standard with the Dual Display model. It is an alternative to the 2.5" Belt Clip that ships standard with the Top Display model.	QA00779	481	$29.00

Cable(s)

Description	Nomenclature	APC	Price
ADD: DATA CABLE PMKN4013A-GCAI cable at radio interface and USB connection at other end for computer programming. Please note that the PMKN4012A is NOT compatible with the APX 4000	Q157	655	$75.00

Housing

Description	Nomenclature	APC	Price
ALT: PUBLIC SAFETY YELLOW APX6000 comes standard IP67 unless ordered with H499 Delta T option. APX6000XE comes Delta T standard.	H84	481	$25.00
ALT: HIGH IMPACT GREEN APX6000 comes standard IP67 unless the H499 Delta-T option is ordered. APX6000XE comes standard Delta-T.	QA01427	481	$25.00

Programming

Description	Nomenclature	APC	Price
ADD: FRONT PANEL PROGRAMMING (FED GOVT) Compatible with Model 3.5 Radios only.	Q52	481	$150.00
ADD: FRONT PANEL PROGRAMMING Compatible with Model 3.5 Radios only. Requires FPP HW dongle (NNTN7526A)to be purchased.	Q53	481	$150.00

Ruggedized Housing

Description	Nomenclature	APC	Price
ENH: SUBMERSIBLE (DELTA T) Radio Ships with LIION IMPRES 2300MAH DELTA-T Battery. H499 is also compatible with (QA02818AA) LIION IMPRES 2300MAH FM DELTA-T,(QA00581) NIMH IMPRES 2000MAH FM DELTA-T, (QA00582)LIION 4000mAH IMPRES FM Delta-T, (QA00781)LIION 4200mAH IMPRES Delta-T, and (QA02726) NiMH IMPRES 2000MAH NON-FM DELTA-T batteries.	H499	481	$250.00
ENH: APX6000XE RUGGED RADIO This Option will pull in the XE (extreme) control top with larger knobs and a display for fire users. The carry cases are different for this radio so be sure to choose the right APX6000XE case if you do not want to use the plastic carry holder that ships std with the Model 2 and 3 radios. This option will also pull in an FM battery (NNTN8092)and will include radio FM certification. The QA02006 option includes Delta-T standard.	QA02006	758	$800.00

Service Options

Description	Nomenclature	APC	Price
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE Provides 2 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	H885BK	185	$84.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE Provides 3 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	H886AQ	185	$125.00
ADD: 3 YR RSA COMPREHENSIVE Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	HA00022AB	185	$228.00
ENH: CANADA 3 YR ENCR EXT WARR Upgrades the standard warranty period to a full three (3) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.	HA00048	386	$200.00
ENH: CANADA 5 YR ENCR EXT WARR Upgrades the standard warranty period to a full five (5) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.	HA00049	386	$244.00
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	Q884	185	$44.00
ENH:4 YEAR REPAIR SERVICE ADVANTAGE Provides 4 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	Q887	185	$162.00

Manual(s)

Description	Nomenclature	APC	Price
ADD: DATA LINK MANAGER APP CD-PORTABLES Option provides the NVN5424 Data CD. Please order this option if you would like the Data CD, and are unable to obtain it through other sources such as MOL.	QA00205	655	$0.00
DEL: USER GUIDE CD This deletes the user guide CD that ships standard with the radio.	QA01274	481	$0.00

Packaging

Description	Nomenclature	APC	Price
ADD: SINGLE UNIT PACKING	H842	481	$0.00

Test Results

Description	Nomenclature	APC	Price
ADD: TEST RESULTS / RATED AUDIO PRINTOUT	H799	481	$10.00

Accessories

Bluetooth, Mission Critical Wireless Replacement

Description	Nomenclature	APC	Price
EARTIPS, REPLACEMENT	NNTN8299A	742	$3.15
COMMPORT MAINTENANCE KIT Includes Replacement Ear Tubes (qty 10), Windscreens (qty 2) and Microphone Seal Strips (qty 10).	NTN8821	115	$46.00
COMMPORT EAR STRAP (PACK OF 10)	NTN8988A	115	$17.25
ACCY,SMPS,MICRO USB,FIXED,CLP,US	PMPN4009A	903	$21.00

Adapter

Description	Nomenclature	APC	Price
APX FPP HW KEY (DONGLE)	NNTN7526	655	$37.00
APX SURVEILLANCE KEYLOAD A	NNTN7869A	742	$65.00

Antenna

Description	Nomenclature	APC	Price
UHF1 GPS STUBBY ANTENNA	FAF5259A	481	$60.00
UHF (380-520) GPS ANTENNA	PMAE4065A	795	$21.00

Battery

Description	Nomenclature	APC	Price
ASSEMBLY,BATTERY,BATT IMP FM RUGGEDIZED LIION 4100M 4300T BLK Dimensions (HxWxD) 5.12" x 2.34" x 1.65"	NNTN7033A	453	$175.00
ASSEMBLY,BATTERY,BATT IMP STD RUGGEDIZED LIION 4200M 4400T BLK Dimensions (HxWxD) 5.13" x 2.34" x 1.65"	NNTN7034A	798	$160.00
APX 7000 IMPRES NIMH 2000MAH RUGGEDIZED PLUS FM BATTERY Motorola now makes batteries to an even more stringent military standard for customers who require a higher level of submersibility protection - MIL-STD-810E, Method 512.3 Immersion, which are referred to as Ruggedized PLUS. Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	NNTN7035	798	$147.00
APX 7000 IMPRES NIMH 2000MAH SUBMERSIBLE (IP67) FM BATTERY Dimensions (HxWxD) 5.34" x 2.34" x 1.57"	NNTN7038	798	$142.00
APX 7000 IMPRES NIMH 2100MAH SUBMERSIBLE (IP67) BATTERY Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	NNTN7037	798	$125.00
BATT IMP STD IP67 LIION 2900M 3100T BLK Dimensions (HxWxD) 3.07" x 2.34" x 1.65"	NNTN7038	798	$140.00
APX 7000 IMPRES NIMH 2100MAH RUGGEDIZED PLUS BATTERY Motorola now makes batteries to an even more stringent military standard for customers who require a higher level of submersibility protection - MIL-STD-810E, Method 512.3 Immersion, which are referred to as Ruggedized PLUS. Dimensions (HxWxD). 5.07" x 2.34" x 1.57"	NNTN7573	798	$130.00
BATT IMP FM R LI ION 2300M 2350T ***This Impress 2300MAH Lithium Ion battery is both FM certified and Ruggedized PLUS (submersible). The battery is offered in a small form factor. It is the standard battery offered with the XE(eXtrEma) radio products.*** Dimensions (HxWxD): 3.07" x 2.34" x 1.65"	NNTN8092	453	$140.00
LIION IMPRES 2150MAH IP67 BATT Dimensions (HxWxD) 3.39" x 2.34" x 1.46"	PMNN4403	453	$125.00

Battery Maintenance Systems

Description	Nomenclature	APC	Price
NA FLEET MANAGEMENT LICENSE KEY	HKVN4036A	765	$489.00
IMPRES BATTERY DATA READER Provides IMPRES battery users ability to access key usage data via PC. Compatible w/all IMPRES batteries (HT/PRO,TRBO & APX adapter included)	NNTN7392	785	$250.00
FLEET MANAGEMENT RELEASE 1.2	NNTN7676C	785	$10.00
FLEET MANAGEMENT CHRGR INTERFACE UNIT Multi-Unit Charger Interface Unit, attaches to an APX or XTS IMPRES multi-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to IMPRES Battery Fleet Management.	NNTN7677A	785	$80.00
CHARGR INTRFCE UNT GEN1 IMPRES SUC Single-Unit Charger Interface Unit , attaches to an APX IMPRES single-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to the IMPRES Battery Fleet Management.	NNTN8045A	785	$35.00

Belt Clip(s)

Description	Nomenclature	APC	Price
3" PLASTIC BELT CLIP ATTACHMENT	HLN6875A	721	$12.00
2.5" PLASTIC BELT CLIP ATTACHMENT 2.5? Belt Clip is compatible with all APX subscribers except the APX4000 series	NTN8266B	478	$12.00
SWIVEL D CLIP, HIGH ACTIVITY	NTN9212	476	$30.00

Belt Loops

Description	Nomenclature	APC	Price
BELT WAIST BLK	4200865599	271	$20.00
CARRY CASE SHOULDER STRAP To be used with carry-case FMLN5323, PMLN5324, PMLN5326, PMLN5330, PMLN5326, PMLN5322, PMLN4474 or RLN4851.	NTN5243A	795	$23.00
APX 7000 2.5" REPLACEMENT SWIVEL BELT LOOP	PMLN5407	271	$12.00
APX 7000 2.75" REPLACEMENT SWIVEL BELT LOOP	PMLN5408	795	$12.00
APX 7000 3" REPLACEMENT SWIVEL BELT LOOP	PMLN5409	271	$12.00

Bluetooth, Mission Critical Wireless

Description	Nomenclature	APC	Price
1-WIRE EARBUD,29CM CORD,BLACK	NNTN8294A	742	$40.00
1-WIRE EARBUD,116CM CORD,BLACK	NNTN8295A	742	$40.00
ACCY,KIT,EAR PIECE,2W SHORT CORD,BL	NNTN8298A	742	$180.00
WIRELESS 2.0 COMMPORT IC MODULE	NTN2571B	742	$139.00
EARPIECE W/12" CABLE	NTN2572A	742	$151.00

ASSEMBLY,ACCESSORY,WIRELESS ACCY KIT, NFP, 9.5" CABLE FM Certified MCW BT Requires QA00583 to be ordered in the APX radio	NTN2573B	742	$295.00
EARPIECE W/9.5" CABLE	NTN2575A	742	$151.00

Carrying Case(s)

Description	Nomenclature	APC	Price
APX6000 CC 2.75 SWLBL 2900&2150MAH	PMLN5657A	795	$65.00
APX6000 CC 3 FIX BL 2900&2150MAH	PMLN5658A	454	$67.00
APX6000 CC 2.75 SWL BL 4200MAH	PMLN5659A	795	$67.00
APX6000 CC 3 FIX BL 4200MAH	PMLN5660A	795	$69.00
APX6000 UNIVERSAL CARRY HOLDER	PMLN5709A	271	$29.00

Charger

Description	Nomenclature	APC	Price
IMPRES CHG MU MACKINAW US/NA/CA/LA	NNTN7085B	765	$788.00
IMPRES CG MUD MACKINAW US/NA/CA/LA	NNTN7073B	765	$1,350.00
APX DUAL UNIT CHARGER WITHOUT DISPLAY This next generation IMPRES charger provides advanced features, including the ability to turn on/off reconditioning, reduced reconditioning time and improved energy efficiency.	NNTN7586	795	$295.00
CHR IMP DISP DUC EXT US/NA/CA/LA	NNTN7593A	785	$375.00
IMPRES VEHICULAR CHARGER (FULL KIT) APX Portable Vehicular Charger (NNTN7624B supports APX XE subscriber line as well)	NNTN7624B	785	$390.00
APX CHARGER INSERT ADAPTER FOR XTS MULTI-UNIT CHARGER Six inserts will ship in one package. Requires charger containing Software Version 3.4 or greater.	NNTN7686A	795	$207.00
APX CHARGER INSERT ADAPTER FOR XTS SINGLE-UNIT CHARGER Only 1 SUC insert will ship. Requires charger containing Software Version 3.4 or greater.	NNTN7687A	795	$45.00
IMPRES CHARGER DISPLAY MODULE	RLN5382B	785	$95.00
APX TRAVEL CHARGER	RLN6434A	785	$101.00

Commport Integrated Microphone/Receiver

Description	Nomenclature	APC	Price
COMMPORT EAR TUBES (PACK OF 10)	RLN5037	115	$26.00

Earpieces

Description	Nomenclature	APC	Price
RECEIVE-ONLY FOAM EARBUD WITH 3.5MM PLUG - INTRINSICALLY SAFE (FM) When used with MTP3000 models, to be used with remote speaker microphones FMMN4078A, PMMN4072A and PMMN4074A	AARLN4885	742	$25.00
BONE CONDUCTION EAR MIC IMPRES Ear Microphone System with Programmable Button and Large Push-to-Talk: Lightweight earpiece that picks up sound through bone conduction In digital mode, bone conduction can have a baseler (muffled) sound quality depending on the user	PMLN5653A	742	$399.00
RECEIVE ONLY EARPIECE W/TRANSLUCENT TUBE When used with MTP3000 models, to be used with remote speaker microphones PMMN4078A, PMMN4072A and PMMN4074A	RLN4941A	742	$58.00
EAR RCVR W/COIL CBL&3.5MM PLUG	WADN4190B	742	$43.00

Headsets

Description	Nomenclature	APC	Price
IMPRES TEMPLE TRANSDUCER FM Certified	PMLN5101A	742	$228.00
HEAVY DUTY HEADSET PMLN5275B FM Certified	PMLN5275B	742	$485.00
CORE L/W HEADSET FM Certified	RMN5058A	742	$99.00
RX/TX BOOMLESS TEMPLE TRANSDUCER Temple Transducer Headset will ONLY work with: Microphone Compatibility HMN4101, HMN4103, HMN4104.	RMN5116A	742	$248.00

Housing

Description	Nomenclature	APC	Price
KIT, MAIN HOUSING, M1, APX6000 ORG	NHN7070 S	461	$99.00
KIT, MAIN HOUSING, M2, APX6000 ORG	NHN7071 S	481	$83.00
KIT, MAIN HOUSING, M3, APX6000 ORG	NHN7072 S	481	$82.00
KIT, MAIN HOUSING, M1, APX6000 BLU	NHN7073 S	481	$99.00
KIT, MAIN HOUSING, M2, APX6000 BLU	NHN7074 S	481	$86.00
KIT, MAIN HOUSING, M3, APX6000 BLU	NHN7075 S	481	$87.00
KIT, MAIN HOUSING, M1, APX6000 RED	NHN7076 S	481	$99.00
KIT, MAIN HOUSING, M2, APX6000 RED	NHN7077 S	481	$86.00
KIT, MAIN HOUSING, M3, APX6000 RED	NHN7078 S	481	$87.00

Programming Tool(s)

Description	Nomenclature	APC	Price
NEO PORT PROG CABLE APX DMR PORT PROG CABLE	PMKN4012B	037	$75.00

Public Safety Microphones - PSM's

Description	Nomenclature	APC	Price

	PMMN4059B	795	$164.00
The antenna needs to be purchased separately. The only antenna currently qualified to work with UHFR1 PSM is PMAE4065A.			
PSM IP55 WITH 3.5MM JACK RX 24IN	PMMN4060B	795	$164.00
The antenna should be purchased separately. The only antenna currently qualified to work with UHFR1 PSM is PMAE4065A.			
PSM IP55 WITH 3.5MM JACK RX 30IN	PMMN4061B	795	$164.00

Remote Speaker Microphones - RSM's

Description	Nomenclature	APC	Price
DISPLAY RSM GCAI, REPLACEABLE CABLE	3075336B17	372	$90.00
IMPRES RSM NO DSPLY W JACK, NO CHNL	HMN4101B	372	$300.00
IMPRES RSM DSPLY W JACK, NO CHNL	HMN4103B	372	$345.00
IMPRES RSM DSPLY W JACK, W CHNL	HMN4104A	795	$375.00
IMPRES XE RSM, GREEN	NNTN8203A	372	$335.00
The XE RSM is the latest in speaker microphone design. It is equipped with dual microphone noise cancellation technology which improves audio capability in high noise environments. Delta T submersible FM Approved *Radio must be equipped with 7.11 software			
IMPRES XE RSM, BLACK	NNTN8203ABLK	372	$335.00
RSM INTERFACE CABLE, NEXUS 5-POLE	PMKN4107A	795	$53.00
RSM INTERFACE CABLE, NEXUS 4-POLE	PMKN4112A	795	$53.00
RSM INTERFACE CABLE, HIROSE	PMKN4113A	795	$53.00
APX7000 IMPRES RSM, NOISE CANC. EMERGENCY BUTTON 3.5MM JACK IP54	PMMN4062A	795	$107.00
APX IMPRES RSM W/VOL, IP57	PMMN4065A	795	$97.00
IMPRES RSM, 3.5MM AUDIO JACK	PMMN4069A	795	$110.00
IMPRES RSM REPL COIL CORD	RLN6075	372	$85.00

Surveillance

Description	Nomenclature	APC	Price
REPLACEMENT CLEAR ACOUSTIC TUBE	0105954U29	742	$7.90
RUBBER EAR TIP, CLEAR	67009254001	795	$9.95
SURVEILLANCE LOW NOISE KIT	RLN5888A	742	$20.00
SURVEILLANCE HIGH NOISE KIT	RLN5887A	742	$32.00
RX ONLY EARPIECE W/TRANSLUCENT TUBE	RLN6424B	742	$60.00
3-WIRE SURVEILLANCE KIT WITH MICROPHONE & PTT COMBINED, BEIGE	ZMN6031	742	$177.00
Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8613 adapter			
2-WIRE SURVEILLANCE KIT WITH MICROPHONE AND PTT COMBINED	ZMN6032	476	$143.00
Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8613 adapter			
2-WIRE SURVEILLANCE KIT WITH MICROPHONE AND PTT COMBINED - EXTRA LOUD	ZMN6036	476	$149.00
Exceeds OSHA limits. Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8613 adapter			
SPKR MIC W XLOAD EARPIECE	ZMN6039	742	$190.00
Exceeds OSHA limits. REQUIRES NTN5664 Audio Adapter. FACTORY MUTUAL APPROVED.			

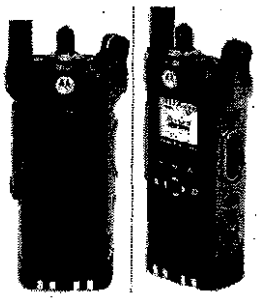
UNDEFINED

Description	Nomenclature	APC	Price
UHFR2 GPS STUBBY ANTENNA	FAF5260A	481	$60.00

Customer Programming Software

Description	Nomenclature	APC	Price
CPS R08.01.00 ASTRO DIG APX POR MOB	RVN5224P	371	$265.00

Data Compiled 16-May-2013 using DUP and all prices in USD



ASTRO® Digital APX 6000™ Portable Series

VHF Band

P25 Phase 2 Single Band Capable Radio

Special Note for United States - State & Local Markets only:

In accordance to a FCC mandate, VHF (150-174 MHz) and UHF R1 (421- 450 MHz) products operating on Part 90 frequencies will be restricted to 12.5 kHz or narrower operations on Jan. 1, 2013.

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749), HARDWARE KEY (QA01648), OR WACN KEY SUPPLEMENTAL DATA (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY or QA02018- WACN KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. Also, an Advanced System Keys (ASK- DVN4046) will be required to be ordered. ******

Ship Card

Features

All ASTRO Digital APX 6000 models include the following features:

- Dual Microphone
- 0.5 Watt Rated Audio
- Integrated GPS Hardware Capable*
- Integrated Bluetooth Hardware Capable*
- Detacheble Belt Clip for Top Display Model
- Lifon 2150 mAh Battery (PMNN4403)
- Antenna (Dependant on Frequency Band and Type)
- Intelligent Lighting
- ADP Privacy - ships standard with Single Key
- 3 Programmable Side Buttons
- Orange Programmable Button
- 16 Position Mode Rotary Select Switch
- Angled On/Off Volume Knob
- Low Battery Alert Tone
- Noise Cancellation Software
- 1 Top Mounted Programmable 3 Position Toggle Switch
- Top Display: 1 line of text, 1 line of icons, 0 menu lines
- IP67 ships standard with every radio model

ASTRO Digital APX 6000 Limited Keypad and Full Kepad with Dual Display Model also includes:

- Universal Carry Holder
- Unified Call List
- Front Color Display: 4 lines of text, 2 lines of icon
- Radio Profiles
- Full Keypad: 4 x 3 alphe-numeric 3 progremmable button, 4 way navigetion, home and data buttons

*** Must purchase Software to ENABLE**

*** All APX6000 Portable Radios ship standard with SW and HW ADP Privacy**

All ASTRO Digital APX 6000 Portables are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the current RF capabilities of the radio)

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749), HARDWARE KEY (QA01648), OR**

WACN KEY SUPPLEMENTAL DATA (QA02018) to be ordered to operate/program on a trunking system. IF QA01648-HARDWARE KEY or QA02018- WACN KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. ****

http://ecat.comm.mot.com/ecat/pricebooks/dup/ASK.htm

General Information

The ASTRO Digital APX 6000 Portable Line offers THREE different radio hardware models:

Hardware Model	Modes	Alphanumeric Display Lines/Characters	Keypad	Navigation Pad
ASTRO APX 6000 Top Display	96	8 (top)	-	No
ASTRO APX 6000 Limited Keypad	670	14 (front) & 8 (top)	-	Yes
ASTRO APX 6000 Full Keypad	870	14 (front) & 8 (top)	4 x 3	Yes

Operating Modes

ASTRO Digital APX 6000 Radio Models are capable of operating in four different voice communication modes:

- Normal Analog (clear voice)
- 3.6KB ASTRO Digital (both clear and coded voice)
- 9.6 KB ASTRO 25 Digital (both Clear and Coded voice)
- 9.6KB 12.5kHz 2 slot digital TDMA (both clear and coded voice).
- Will be capable of APCO25 Phase 2 functionality in future software releases.

TDMA

FDMA (Frequency Division Multiple Access) is a proven technology that is widely used today in radio systems and is part of APCO 25 Project 25 Phase 1 standard. FDMA carries one call per channel. TDMA (Time Division Multiple Access) will be part of P25 Phase 2 standard and provides double the voice capacity as 2 calls can share 1 channel. Customers can add more users to their systems without the need of additional frequencies or infrastructure. The APX radios support both P25 Phase 1 and TDMA technologies seamlessly. Using Motorola's unique Dynamic Dual Mode (DDM) capability, the radios dynamically switch between FDMA and TDMA without the user having to change channels. This provides interoperability on demand with existing and future networks.

FLASHport AFTERMARKET UPGRADES

The ASTRO Digital APX 6000 Portable Series Radios are part of the FLASHport Program. This means that ASTRO Digital APX 6000 hardware models can be loaded with different software packages that provide the features and functionalities that our customers require.

System Enhancement Options can be loaded at the time of radio purchase or at a later date through the use of software field upgrades (a USB cable is required for all software upgrades.) The ASTRO Digital APX 6000 portable can be upgraded electronically in the field with new features in the current system or to new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

Ordering Requirements

Ordering procedure is as follows...

Steps	Required Options	Comments
1	**APX 6000 VHF Main Model**	APX Digital Portable Radio- a. H98KGD9PW5AN b. H98KGF9PW6AN c. H98KGH9PW7AN
2	**Operation Mode**	a. Q241; Analog Operation b. Q806; ASTRO digital CAI operation
3	**System Enhancement Software**	a. H35; Conventional Operation b. H37; Smartnet Operation c. H38; Smarzone Operation d. Q173; Smartzone Omnilink (non-P25) e. Q361; P25 9600 Baud Trunking f. QA00580; TDMA

1. Order the APX 6000 Portable Series as the main line item.

- Each hardware model MUST be ordered with one operation mode.
- Default battery is LiIon 2150mAh (-20°c)
- Default belt clip for top display models and carry holder for limited keypad and full keypad models
- Default Antenna is the single appropriate antenne for your RF configuration.

2. Select any other system enhancement options you desire.

- Note - APX Radio ships with 12 month standerd warranty.

- Note: Model 1.5 comes standard with 2.5" belt clip.

Common Software Features Supported By

	H38 "SmartZone"			
	"Analog Operation"(Q241/H38)	"ASTRO Digital"(Q806/H38)	"ASTRO Digital"(H38/Q806/Q361)	"TDMA"(QA00580AA)
	Non-Project 25 (3600 Baud)	Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	TDMA OPERATION
RADIO WIDE FEATURES				
Maximum Modes				
ASTRO Digital APX 6000 Top Display	96	96	96	96
ASTRO Digital APX 6000 Limited Keypad	870	870	870	870
ASTRO Digital APX 6000 Full Keypad	870	870	870	870
Analog and Digital Operation	Yes	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable	No	Yes (Digital Only)	Yes (Digital Only)	Yes (Digital Only)
One Touch Operation	Yes	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes	Yes
Surveillance Mode	Yes	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes	Yes
Radio Lock	Yes	Yes	Yes	Yes
Smart Battery	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified above.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
DTMF Signaling	Future	Future	Future	Future
Quick-Call Signaling	Future	Future	Future	Future
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Conventional Interoperable Features when used in the ASTRO Digital CAI Mode (Q806).				
Unaddressed Voice Call (Dispatch Call)	Yes	Yes	Yes	Yes
Talk Group Call	Yes	Yes	Yes	Yes
Group Call Alert™	Yes	Yes	Yes	Yes
Talk Group Identification (TGID)	Yes	Yes	Yes	Yes

Selective Call (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
PTT ID (Individual Identification)	MDC-1200 Only	Yes	Yes	Yes
Call Alert Encode/Decode	MDC-1200 Only	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	MDC-1200 Only	Yes	Yes	Yes
Telephone Interconnect	Yes	Yes	Yes	Yes
Manual Phone Number Entry	Dual Display Only	Dual Display Only	Dual Display Only	Dual Display Only
Selective Radio Inhibit	MDC-1200 Only	Yes	Yes	Yes
Radio Check	MDC-1200 Only	Yes	Yes	Yes
Status/Message	MDC-1200 Only	Yes	Yes	Yes
Trunking Type II Only Features				
Maximum Number of Trunked Systems-20	Yes	Yes	Yes	Yes
Talkgroup Calls	Yes	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes	Yes
Analog/Digital Dual Mode Scan	No	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only	Status Only
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes	Yes
Remote Monitor/Radio Trace	Yes	Yes	Yes	Yes
Reprogram Request	Yes	Yes	Yes	Yes

H38 "SmartZone"				
	"Analog Operation" (Q241)	"ASTRO Digital" (Q806)	"ASTRO Digital" (H37/Q806/Q361)	"TDMA" (QA00580AA)
		Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	Project 25 (TDMA Operation)
Trunking Type II Only Features				
Voice on Control	-	-	-	-
SmartZone Automatic Site Registration	Yes	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes	Yes
SmartZone Preferred Site	Yes	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the APX 6000 portable series. Separation of frequencies can be as wide as the allowable band per radio model with no degradation of any performance specifications. If an incorrect antenna is used, degraded performance may be experienced.

ZONED OPERATION

This option converts MODE-ONLY ASTRO Digital APX 6000 portables to Zone Operation radios.

For Top Display radios, a maximum of 16 channels (conventional RX and TX pairs or trunking talkgroups) are accessible in a zone. There is a maximum of six accessible zones (96 channels) when zone selection operation is programmed on the 3 position toggle switch and the Zone Bank feature is programmed on a button. The Zone Bank feature allows the 3 position toggle switch to access zones 1-3 or 4-6.

For the Top Display radio there is a maximum of 6 accessible zones, and 16 accessible channels per zone with the overall maximum of 96 channels. For the Dual Display Radios with Limited keypad or Full Keypad, there is a maximum of 50 zones, 625 channels per zone with the overall maximum of 870 channels. These radios provide "ZONE" and "CHAN" menus that allows access to zones and channels not accessible via the switches.

*Note: Top Display Radio codeplugs can be programmed with the same zone/channel configuration as the Dual Display Radios even though not all of the zones and channels are accessible. This is useful for having a common zone/channel template that can be shared between the different radio models.

PROJECT 25 ENCRYPTION

The mode of operation is programmed on a channel-by-channel basis. With the coded/clear switch set to the clear mode, the ASTRO Digital APX6000 radio is capable of transmitting clear analog voice or clear (unencrypted) ASTRO Digital voice, depending on the channel progremming. With the coded/clear switch set to the coded mode, the ASTRO Digital APX 8000 radio will transmit ASTRO Digital encryption depending on the channel programming. ASTRO Digital

encryption provides secure communicetions. ASTRO Digital Encryption (operetion in encrypted mode while also operation in 3.6KB or 9.6KB and TDMA ASTRO mode) is capable of XL type encryptions; ASTRO Digital Encryptions does not operate with non-XL encryptions.

An encryption option is not required for either clear analog operetion or cleer ASTRO Digital operation. Encryption can be ordered with the ASTRO Digital APX 6000 radio either es e factory installed option or separate from the radio for later field installation. ASTRO Digitel APX 6000 radio functions include selected ASTRO digital signeling and digital speech coding.

When ordering any of the Encryption Algorithms:

- The DES-OFB and AES encryption algorithms offered are complient with digital Project 25 standards and does not support enelog encryption operation.
- **Requires** the ASTRO Digital CAI (Q806) to operete the DES-OFB and AES encryption.

When used in CAI mods, the non-OFB Encryption will not be Project 25 complient.

- Encryption Algorithms can be ordered leter via Flesh Port.

FIPS 140-2 Compliance

Encryption Modules equipped with AES are FIPS 140-2 compliant. Details regarding the certification, end copies of the relevant certificates, can be obtained on the NIST website at: http://csrc.nist.gov/groups/STM/cmvp/validation.html.

Further information regarding FIPS 140-2 certification may be found using the following link - FIPS 140-2 Crypto Module Valideticn Program (CMVP) http://csrc.nist.gov/groups/STM/cmvp/index.html

FM INFORMATION

APX 6000 Portable Radio when properly equipped with options Q393 OR QA00581 OR QA00582 OR QA02616 are Factory Mutual (FM/CSA) Approved es intrinsically safe for use in Div 1, Cless I , Groups C,D, Class II groups E, F, G, Class III Div 2, Cless I A, B,C,D.

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advenced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages end run database queries from ASTRO 25 data enabled portable radios, extending real time informetion access to the field so dispatchers and first responders can be more efficient and echieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advenced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispetch) and vehicles equipped with MDT's. With ASTRO 25 Advenced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advenced Messaging Solution will be available on APX 6000 Dual Display Portable radios. Advencsd Messaging is NOT supported on APX 6000 Top Display Portable radios.

Ordering ASTRO Text Messaging for APX 6000 Portable Requires:

- APX 6000 Duel Display
- ASTRO Digital CAI Operation (Q806)
- P25 Conventional (H35)
- Packet Data Interface (Q947)

OR

- APX 6000 Dual Display
- ASTRO Digital CAI Operation (Q806)
- SmartZone Operation (H38)
- ASTRO Project 25 Trunking Software (Q361)
- Packet Deta Interface (Q947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding quary the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

Outdoor Personnel Location Global Positioning Satellite (GPS) Feature

The personnel outdoor location tracking GPS feature enables a dispatcher the ability to locate on-foot patrols and out of the vehicle officers who are involved in life threatening situations. The radio user's GPS position information is sent over the ASTRO 25 Integreted Voice & Data (IV&D) network and is deliverad to the dispatch operator using a third party mapping display application at the dispatch canter *(Mapping Application is not yet available through Motorole at this time, however an Application Developers Tool Kit is available for 3rd party vendors to use to modify existing*

applications. See link below for more details.) On the Dual Display model only it is possible to the user to determine their own location (latitude/longitude) through the use of the location menu.

During normal operation the radio battery capacity will be reduced by 10% to 16%.

In order to obtain an initial GPS fix position, the radio must be located in an open sky, outdoor environment with no barriers that could effect the signal around you or above you. During this initial fix, the radio should NOT be worn on the body as this may affect the process of acquiring signal and/or add additional time to first fix.

NOTE LIMITATIONS OF USE:

GPS works best in an open sky (clear view of the sky with no obstructions) environment. Due to the limitations of the technology, there are certain situations which prevent GPS coverage. These situations include but are not limited to:

- Underground locations (tunnels, subways, etc.)
- Inside of buildings, elevators, parking garages, trains, other covered vehicles, etc.
- Under metal or concrete roof structures
- Urban canyons (between tall buildings or under dense tree coverage)

***GPS Performance may be degraded when the radio is worn against the body and/or against the body within a vehicle.

Due to the limitations mentioned above, GPS should only be utilized as a method to assist the user with location information but not as a means for mission critical communication. Therefore, in any emergency situation, the location should always be verbally reported to the dispatcher.

For further information regarding System Requirements, go to the location solutions price pages at:
http://ecat.comm.mot.com/ecat/pricebooks/dup/ALOCATION.htm

Ordering GPS for APX 6000 Portable Requires:

- Enable Internal GPS Operation (QA00782)
- Packet Data Interface (Q947)

VHF SELF-QUIETING SPURS	
VHF Models (1.5, 2.5, 3.5)	Frequencies
	143.9875
	144
	152.8625
	152.9
	152.9375
	152.975
	155.9875
	159.575
	150.575

CPS INFORMATION

****Please note that a NEW version of CPS (RVN5224) is required for initial customer orders for this product. This new version of CPS is required for the APX radio shipments. ****

FCC Information

Band/Model	Power Output	Transmitter Certification	Emissions	Applicable Rules
VHF (136-174 MHz)	1 to 6 Watts	AZ489FT3829	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 20K0F1E	90

SUB-BAND PERFORMANCE

VHF 136-174MHz in all models

Ordering Guide

Enhancement Level Reference Guide

Fleet Management Ordering Guide

APX Portable Comparison Chart

APX Family Brochure

Spec Sheet

RSA Comprehensive

RSA

Portable Accessories Catalog

- Radio Applications \ Advanced System Key

Models

Description	Nomenclature	APC	Price
APX6000 VHF MHZ MODEL 1.5 PORTABLE	H98KGD9PW5 N	481	$1,900.00
APX6000 VHF MHZ MODEL 2.5 PORTABLE	H98KGF9PW6 N	481	$2,200.00
APX6000 VHF MHZ MODEL 3.5 PORTABLE	H98KGH9PW7 N	481	$2,600.00

Options

Operation Mode

Description	Nomenclature	APC	Price
ADD: ANALOG OPERATION Requires either a H35, H37, or H38	Q241	481	$0.00
ADD: ASTRO DIGITAL CAI OPERATION Requires either a H35, H37, or H38	Q806	481	$515.00

System Enhancement Software

Description	Nomenclature	APC	Price
ADD: CONVENTIONAL OPERATION	H35	481	$500.00
ADD: SMARTZONE OPERATION A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	H38	481	$1,200.00
ADD: SMARTZONE OMNILINK (NON-P25) Requires H38 SmartZone and Q806 Digital Operation (required for 3600 baud only trunked systems.) APX 6000 digital radios require Advanced System Keys (ASK - DVN4046A) to be configured to operate on a trunking system.	Q173	481	$200.00
ADD: P25 9600 BAUD TRUNKING Requires H38 and Q806. INCLUDED at "NO Charge" Q173-OmniLink. APX 6000 digital radios require Advanced System Keys (ASK- DVN4046A) to be configured to operate on a trunking system.	Q361	481	$300.00
ADD: TDMA OPERATION For APX6000 and APX6000XE, QA00580 requires Q806, H38, Q361. If ordering an APX6000LI, QA00580 requires QA02756. A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA00580	481	$400.00
ADD: ENABLE BLUETOOTH SOFTWARE	QA00583	481	$150.00
ENH: ENABLE INTERNAL ACTIVATION AND GPS BASIC FUNCTIONALITY Must have IV&D (Q847) enabled.	QA00762	481	$100.00
ADD: ADVANCED SYSTEM KEY - HARDWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA01648	855	$5.00
ADD: ADVANCED SYSTEM KEY - SOFTWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking.	QA01749	655	$0.00
ADD: ADVANCED WACN KEY SUPP DATA A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA02018	655	$5.00

Systems Enhancement Options

Description	Nomenclature	APC	Price
ADD: PROGRAMMING OVER P25 (OTAP) Compatible with P25 Trunking and Conventional Operation. POP25 requires AES encryption for ASTRO Conventional operation. Must have IV&D (Q847)	G996	481	$100.00

enabled. To do in field POP25 programming must use Advanced System Key (OVN4046A)			
ENH: RADIO TRACE/ REMOTE MONITOR	H43	481	$75.00
Requires Q806 and either H37, H38, or H35.			
ENH: ONE TOUCH/STATUS MSG	H48	481	$75.00
Only compatible with Model 2.5 and 3.5 Radios			
ADD: MULTICAST VOTING SCAN	Q387	481	$200.00
ADD: APX Personnel Accountability	Q445	481	$150.00
ADD: RADIO PACKET DATA	Q947	481	$200.00
This option is only capable of being used on P25 Digital Conventional and 9600 Trunking Systems. This option is required for IV & D operation.			
ADD: DVRS PSU ACTIVATION	QA00631	855	$100.00
Enables DVRS Enhanced PSU functionality on APX Radios. Requires XTL MSU and Digital Operation.			
ADD:LINK LAYER RADIO AUTHENTICATION	QA01767	481	$100.00
Requires P25 Trunking (Q361)			
ENH: ENHANCED ZONE BANK	QA01768	481	$75.00
This option will increase the channel/talkgroup capacity on a Model 1 from 96 to 670. Zone Up/Zone Down, Zone Bank Up/Zone Bank Down will be unlocked with this option.			
ENH: ENHANCEMENT LEVEL 2	QA01771	481	$200.00
Please reference the Enhancement Level Reference Guide for more details. This option allows for a few parameters (ZONES, CHANNELS, SYSTEMS PERSONALITIES, UCL ENTRIES, VOICE ANNOUNCMENT, ENCRYPTION KEYS) on the mid tier to go to a high tier			
ADD: EXTREME 1-SIDED NOISE REDUCTION	QA01833	481	$25.00
Compatible with all APX6000 Radios. Comes standard on APX6000XE.			
ADD: ACCELEROMETER/ MAN DOWN	QA01849	481	$150.00

Algorithm Options

Description	Nomenclature	APC	Price
ADD: TACTICAL REKEY WITH MULTIKEY	H04	481	$350.00
Must order IV&D (Q947). Incompatible with MDC/ASTRO P25 OTAR with Multikey			
ENH: DVP-XL ENCRYPTION	H797	481	$487.00
Compatible with Digital and Analog (25kHZ Only) operations. ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES .			
ENH: MULTIKEY	H869	481	$330.00
ENH: AES/DES,DES-XL,DES-OFB	Q15	481	$799.00
ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES. Incompatible with Q825 and Q529			
ENH: MDC & ASTRO P25 OTAR W/ MULTIKEY	Q498	481	$740.00
Incompatible with the H04 option since Tactical OTAR is included with the Q498 option. Tactical OTAR can only be utilized when IV&D is purchased.			
ENH: DES,DES-XL,DES-OFB ENCRYPTION	Q625	481	$599.00
Compatible with Analog 25kHZ/DES-OFB Digital 12.5kHZ Only. ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES			
ENH: AES ENCRYPTION	Q629	481	$475.00
ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES			

Antenna

Description	Nomenclature	APC	Price
DEL: DELETE STANDARD ANTENNA	H112	481	($10.00)

Battery

Description	Nomenclature	APC	Price
DEL: DELETE STANDARD BATTERY	H207	481	($47.00)
Deletes standard battery PMNN4403 for APX6000 or NNTN8092 for APX6000XE			
ALT: NIMH IMPRES 2100MAH IP67 BATTERY (NNTN7037)	H335	481	$78.00
The option will delete the standard option and replace with NIMH IMPRES 2100MAH IP67 BATTERY(NNTN7037)			
ALT: NIMH IMPRES 2000MAH FM/CSA IP67 (NNTN7036)	Q393	481	$95.00
The option will delete the standard battery and replace with NIMH IMPRES 2000MAH FM IP67 BATT (NNTN7036)			
ALT: NIMH IMPRES 2000 MAH FM/CSA DELTA T (NNTN7035)	QA00581	481	$133.00
The option will delete the standard battery and replace with LIION 2000 MAH DELTA-T (NNTN7035). This battery is compatible with H499 and meets FM certification.			
ALT: LIION IMPRES 4100 MAH FM/CSA IP67 (NNTN7033A)	QA00582	481	$165.00
This option will delete the standard battery and replace it with LITHIUM ION 4000MAH IMPRES (NNTN7033). This battery is compatible with H499 and meets FM certification.			
ALT: LIION 4200MAH IMPRES DELTA-T	QA00781	481	$115.00
This option will delete the standard battery and replace it with LIION 4200MAH IMPRES(NNTN7034). This battery is compatible with H499.			
ALT: LIION IMPRES IP67 2900MAH (NNTN7038)	QA01837	481	$100.00
This option will delete the standard battery and replace it with LIION IMPRES 2900MAH IP67 (NNTN7038).			
ALT: NIMH IMPRES 2000MAH NON-FM DELTA T	QA02726	481	$83.00
This battery will delete the standard battery and replace it with NIMH IMPRES 2000MAH (NNTN7573). This battery requires H499 to meet Delta-T standards. This battery option does NOT provide FM certification.			
ALT:LIION IMPRES FM/CSA 2300M (NNTN8092)	QA02818	481	$50.00
This option will delete the standard battery and replace it with LIION IMPRES 2300M (NNTN8092). This option is compatible with H499 and meets FM certification.			

Belt Clip(s)

Description	Nomenclature	APC	Price
DEL: DELETE BELT CLIP/ BASIC CARRY HOLDER	H301	481	($10.00)
ALT: BASIC CARRY HOLDER (PMLN5709)	QA00779	481	$29.00
This carry holder equipped with a 2.5" belt clip ships standard with the Dual Display model. It is an alternative to the 2.5" Belt Clip that ships standard with the Top Display model.			
ADD: BELT CLIP 3.0" (HLN8875)	QA01222	481	$12.00
Replaces the standard 2.5" belt clip that ships with the Model 1.5 radio with a 3". Model 1.5 radios in 700/800 and VHF will ship standard with the 2.5" belt clip, and UHF radios will ship with the 3" belt clip.			

Cable(s)

Description	Nomenclature	APC	Price

	Q157	655	$75.00

PMKN4013A-GCAI cable at radio interface and USB connection at other end for computer programming. Please note that the PMKN4012A is NOT compatible with the APX 4000

Housing

Description	Nomenclature	APC	Price
ALT: PUBLIC SAFETY YELLOW	H64	481	$25.00
APX6000 comes standard IP67 unless ordered with H499 Delta T option. APX6000XE comes Delta T standard.			
ALT: HIGH IMPACT GREEN	QA01427	481	$25.00
APX6000 comes standard IP67 unless the H499 Delta-T option is ordered. APX6000XE comes standard Delta-T.			

Programming

Description	Nomenclature	APC	Price
ADD: FRONT PANEL PROGRAMMING (FED GOVT)	Q52	481	$150.00
Compatible with Model 3.5 Radios only.			
ADD: FRONT PANEL PROGRAMMING	Q53	481	$150.00
Compatible with Model 3.5 Radios only. Requires FPP HW dongle (NNTN7526A)to be purchased.			

Ruggedized Housing

Description	Nomenclature	APC	Price
ENH: SUBMERSIBLE (DELTA T)	H499	481	$250.00
Radio Ships with LIION IMPRES 2300MAH DELTA-T Battery.			
H499 is also compatible with (QA02818AA) LIION IMPRES 2300MAH FM DELTA-T,(QA00581) NIMH IMPRES 2000MAH FM DELTA-T, (QA00592)LIION 4000mAH IMPRES FM Delta-T, (QA00761)LIION 4200mAH IMPRES Delta-T, and (QA02726) NIMH IMPRES 2000MAH NON-FM DELTA-T batteries.			
ENH: APX6000XE RUGGED RADIO	QA02006	756	$800.00
This Option will pull in the XE (extreme) control top with larger knobs and a display for fire users. The carry cases are different for this radio so be sure to choose the right APX5000XE case if you do not want to use the plastic carry holder that ships std with the Model 2 and 3 radios. This option will also pull in an FM battery (NNTN8092)and will include radio FM certification. The QA02006 option includes Delta-T standard.			

Service Options

Description	Nomenclature	APC	Price
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	H885BK	185	$84.00
Provides 2 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	H888AQ	185	$125.00
Provides 3 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ADD: 3 YR RSA COMPREHENSIVE	HA00022AB	185	$228.00
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: CANADA 3 YR ENCR EXT WARR	HA00048	388	$200.00
Upgrades the standard warranty period to a full three (3) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.			
ENH: CANADA 5 YR ENCR EXT WARR	HA00049	386	$244.00
Upgrades the standard warranty period to a full five (5) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.			
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	Q884	185	$44.00
Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH:4 YEAR REPAIR SERVICE ADVANTAGE	Q887	185	$162.00
Provides 4 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			

Manual(s)

Description	Nomenclature	APC	Price
ADD: DATA LINK MANAGER APP CD-PORTABLES	QA00205	655	$0.00
Option provides the NVN5424 Data CD. Please order this option if you would like the Data CD, and are unable to obtain it through other sources such as MOL.			
DEL: USER GUIDE CD	QA01274	481	$0.00
This deletes the user guide CD that ships standard with the radio.			

Packaging

Description	Nomenclature	APC	Price
ADD: SINGLE UNIT PACKING	H842	481	$0.00

Test Results

Description	Nomenclature	APC	Price
ADD: TEST RESULTS / RATED AUDIO PRINTOUT	H799	481	$10.00

Accessories

Bluetooth, Mission Critical Wireless Replacement

Description	Nomenclature	APC	Price
EARTIPS, REPLACEMENT	NNTN8299A	742	$3.15

	NTN8821	115	$46.00
Includes Replacement Ear Tubes (qty 10), Windscreens (qty 2) and Microphone Seal Strips (qty 10).			
COMMPORT EAR STRAP (PACK OF 10)	NTN8988A	115	$17.25
ACCY,SMPS,MICRO USB,FIXED,CLP,US	PMPN4009A	903	$21.00

Adapter

Description	Nomenclature	APC	Price
APX FPP HW KEY (DONGLE)	NNTN7528	655	$37.00
APX SURVEILLANCE KEYLOAD A	NNTN7869A	742	$85.00

Antenna

Description	Nomenclature	APC	Price
VHF/GPS ANTENNA	NAR6593A	555	$38.00

Battery

Description	Nomenclature	APC	Price
ASSEMBLY,BATTERY,BATT IMP FM RUGGEDIZED LIION 4100M 4300T BLK Dimensions (HxWxD) 5.12" x 2.34" x 1.65"	NNTN7033A	453	$175.00
ASSEMBLY,BATTERY,BATT IMP STD RUGGEDIZED LIION 4200M 4400T BLK Dimensions (HxWxD) 5.13" x 2.34" x 1.65"	NNTN7034A	798	$180.00
APX 7000 IMPRES NIMH 2000MAH RUGGEDIZED PLUS FM BATTERY Motorola now makes batteries to an even more stringent military standard for customers who require a higher level of submersibility protection - MIL-STD-810E, Method 512.3 Immersion, which are referred to as Ruggedized PLUS. Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	NNTN7035	798	$147.00
APX 7000 IMPRES NIMH 2000MAH SUBMERSIBLE (IP67) FM BATTERY Dimensions (HxWxD) 5.34" x 2.34" x 1.57"	NNTN7036	798	$142.00
APX 7000 IMPRES NIMH 2100MAH SUBMERSIBLE (IP67) BATTERY Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	NNTN7037	798	$125.00
BATT IMP STD IP67 LiION 2900M 3100T BLK Dimensions (HxWxD) 3.07" x 2.34" x 1.65"	NNTN7038	798	$140.00
APX 7000 IMPRES NIMH 2100MAH RUGGEDIZED PLUS BATTERY Motorola now makes batteries to an even more stringent military standard for customers who require a higher level of submersibility protection - MIL-STD-810E, Method 512.3 Immersion, which are referred to as Ruggedized PLUS. Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	NNTN7573	798	$130.00
BATT IMP FM R LI ION 2300M 2350T ***This Impress 2300MAH Lithium Ion battery is both FM certified and Ruggedized PLUS (submersible). The battery is offered in a small form factor. It is the standard battery offered with the XE(eXtrEme) radio products.*** Dimensions (HxWxD): 3.07" x 2.34" x 1.65"	NNTN8092	453	$140.00
LIION IMPRES 2150MAH IP67 BATT Dimensions (HxWxD) 3.38" x 2.34" x 1.46"	PMNN4403	453	$125.00

Battery Maintenance Systems

Description	Nomenclature	APC	Price
NA FLEET MANAGEMENT LICENSE KEY	HKVN4036A	785	$469.00
IMPRES BATTERY DATA READER Provides IMPRES battery users ability to access key usage data via PC. Compatible w/all IMPRES batteries (HT/PRO,TRBO & APX adapter included)	NNTN7392	785	$250.00
FLEET MANAGEMENT RELEASE 1.2	NNTN7676C	785	$10.00
FLEET MANAGEMENT CHRGR INTERFACE UNIT Multi-Unit Charger Interface Unit, attaches to an APX or XTS IMPRES multi-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to IMPRES Battery Fleet Management.	NNTN7877A	785	$60.00
CHARGR INTRFCE UNT GEN1 IMPRES SUC Single-Unit Charger Interface Unit , attaches to an APX IMPRES single-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to the IMPRES Battery Fleet Management.	NNTN8045A	765	$35.00

Belt Clip(s)

Description	Nomenclature	APC	Price
3" PLASTIC BELT CLIP ATTACHMENT	HLN6675A	721	$12.00
2.5" PLASTIC BELT CLIP ATTACHMENT 2.5? Belt Clip is compatible with all APX subscribers except the APX4000 series	NTN8288B	476	$12.00
SWIVEL D CLIP, HIGH ACTIVITY	NTN9212	476	$30.00

Belt Loops

Description	Nomenclature	APC	Price
BELT WAIST BLK	4200865599	271	$20.00
CARRY CASE SHOULDER STRAP To be used with carry-case PMLN5323, PMLN5324, PMLN5329, PMLN5330, PMLN5328, PMLN5322, PMLN4474 or RLN4851.	NTN5243A	795	$23.00
APX 7000 2.5" REPLACEMENT SWIVEL BELT LOOP	PMLN5407	271	$12.00
APX 7000 2.75" REPLACEMENT SWIVEL BELT LOOP	PMLN5406	795	$12.00
APX 7000 3" REPLACEMENT SWIVEL BELT LOOP	PMLN5409	271	$12.00

Bluetooth, Mission Critical Wireless

Description	Nomenclature	APC	Price

	NNTN8294A	742	$40.00
1-WIRE EARBUD,116CM CORD,BLACK	NNTN8295A	742	$40.00
ACCY,KIT,EAR PIECE,2W SHORT CORD,BL	NNTN8296A	742	$180.00
WIRELESS 2.0 COMMPORT IC MODULE	NTN2571B	742	$139.00
EARPIECE W/12" CABLE FM Certified; MCW BT; Requires QA00563 to be ordered in the APX radio	NTN2572A	742	$151.00
ASSEMBLY,ACCESSORY,WIRELESS ACCY KIT, NFP, 9.5" CABLE FM Certified MCW BT Requires QA00563 to be ordered in the APX radio	NTN2573B	742	$295.00
EARPIECE W/9.5" CABLE	NTN2575A	742	$151.00

Carrying Case(s)

Description	Nomenclature	APC	Price
APX6000 CC 2.75 SWLBL 2900&2150MAH	PMLN5657A	795	$65.00
APX6000 CC 3 FIX BL 2900&2150MAH	PMLN5658A	454	$67.00
APX6000 CC 2.75 SWL BL 4200MAH	PMLN5659A	795	$67.00
APX6000 CC 3 FIX BL 4200MAH	PMLN5660A	795	$89.00
APX6000 UNIVERSAL CARRY HOLDER	PMLN5709A	271	$29.00

Charger

Description	Nomenclature	APC	Price
IMPRES CHG MU MACKINAW US/NA/CA/LA	NNTN7065B	785	$768.00
IMPRES CG MUD MACKINAW US/NA/CA/LA	NNTN7073B	785	$1,350.00
APX DUAL UNIT CHARGER WITHOUT DISPLAY This next generation IMPRES charger provides advanced features, including the ability to turn on/off reconditioning, reduced reconditioning time and improved energy efficiency.	NNTN7586	795	$295.00
CHR IMP DISP DUC EXT US/NA/CA/LA	NNTN7593A	785	$375.00
IMPRES VEHICULAR CHARGER (FULL KIT) APX Portable Vehicular Charger (NNTN7624B supports APX XE subscriber line as well)	NNTN7624B	785	$390.00
APX CHARGER INSERT ADAPTER FOR XTS MULTI-UNIT CHARGER Six inserts will ship in one package. Requires charger containing Software Version 3.4 or greater.	NNTN7686A	795	$207.00
APX CHARGER INSERT ADAPTER FOR XTS SINGLE-UNIT CHARGER Only 1 SUC insert will ship. Requires charger containing Software Version 3.4 or greater.	NNTN7687A	795	$45.00
ACCESSORY IMPRES CHARGER DISPLAY SALES MODULE (CDM)	RLN5382C	785	$95.00
APX TRAVEL CHARGER	RLN6434A	785	$101.00

Commport Integrated Microphone/Receiver

Description	Nomenclature	APC	Price
COMMPORT EAR TUBES (PACK OF 10)	RLN5037	115	$26.00

Earpieces

Description	Nomenclature	APC	Price
RECEIVE-ONLY FOAM EARBUD WITH 3.5MM PLUG - INTRINSICALLY SAFE (FM) When used with MTP3000 models, to be used with remote speaker microphones PMMN4078A, PMMN4072A and PMMN4074A	AARLN4885	742	$25.00
BONE CONDUCTION EAR MIC IMPRES Ear Microphone System with Programmable Button and Large Push-to-Talk: Lightweight earpiece that picks up sound through bone conduction In digital mode, bone conduction can have a bassier (muffled) sound quality depending on the user	PMLN5653A	742	$399.00
RECEIVE ONLY EARPIECE W/TRANSLUCENT TUBE When used with MTP3000 models, to be used with remote speaker microphones PMMN4078A, PMMN4072A and PMMN4074A	RLN4941A	742	$58.00
EAR RCVR W/COIL CBL&3.5MM PLUG	WADN4190B	742	$43.00

Headsets

Description	Nomenclature	APC	Price
IMPRES TEMPLE TRANSDUCER FM Certified	PMLN5101A	742	$228.00
HEAVY DUTY HEADSET PMLN5275B FM Certified	PMLN5275B	742	$485.00
CORE L/W HEADSET FM Certified	RMN5058A	742	$99.00
RX/TX BOOMLESS TEMPLE TRANSDUCER Temple Transducer Headset will ONLY work with: Microphone Compatibility HMN4101, HMN4103, HMN4104.	RMN5118A	742	$248.00

Housing

Description	Nomenclature	APC	Price
KIT, MAIN HOUSING, M1, APX6000 ORG	NHN7070 S	481	$99.00
KIT, MAIN HOUSING, M2, APX6000 ORG	NHN7071 S	481	$83.00
KIT, MAIN HOUSING, M3, APX6000 ORG	NHN7072 S	481	$82.00
KIT, MAIN HOUSING, M1, APX6000 BLU	NHN7073 S	481	$99.00
KIT, MAIN HOUSING, M2, APX6000 BLU	NHN7074 S	481	$86.00
KIT, MAIN HOUSING, M3, APX6000 BLU	NHN7075 S	481	$87.00
KIT, MAIN HOUSING, M1, APX6000 RED	NHN7076 S	481	$99.00
KIT, MAIN HOUSING, M2, APX6000 RED	NHN7077 S	481	$86.00
KIT, MAIN HOUSING, M3, APX6000 RED	NHN7078 S	481	$87.00

Programming Tool(s)

	Nomenclature	APC	Price
NEO PORT PROG CABLE APX DMR PORT PROG CABLE	PMKN4012B	037	$75.00

Remote Speaker Microphones - RSM's

Description	Nomenclature	APC	Price
DISPLAY RSM GCAI, REPLACEABLE CABLE	3075336B17	372	$90.00
IMPRES RSM NO DSPLY W JACK, NO CHNL	HMN4101B	372	$300.00
IMPRES RSM DSPLY W JACK, NO CHNL	HMN4103B	372	$345.00
IMPRES RSM DSPLY W JACK, W CHNL	HMN4104B	372	$375.00
IMPRES XE RSM, GREEN The XE RSM is the latest in speaker microphone design. It is equipped with dual microphone noise cancellation technology which improves audio capability in high noise environments. Delta T submersible FM Approved *Radio must be equipped with 7.11 software	NNTN8203A	372	$335.00
IMPRES XE RSM, BLACK	NNTN8203ABLK	372	$335.00
RSM INTERFACE CABLE, NEXUS 5-POLE	PMKN4107A	795	$53.00
RSM INTERFACE CABLE, NEXUS 4-POLE	PMKN4112A	795	$53.00
RSM INTERFACE CABLE, HIROSE	PMKN4113A	795	$53.00
APX7000 IMPRES RSM, NOISE CANC. EMERGENCY BUTTON 3.5MM JACK IP54	PMMN4062A	795	$107.00
APX IMPRES RSM W/VOL, IP57	PMMN4085A	795	$97.00
IMPRES RSM, 3.5MM AUDIO JACK	PMMN4069A	795	$110.00
IMPRES RSM REPL COIL CORD	RLN6075	372	$65.00

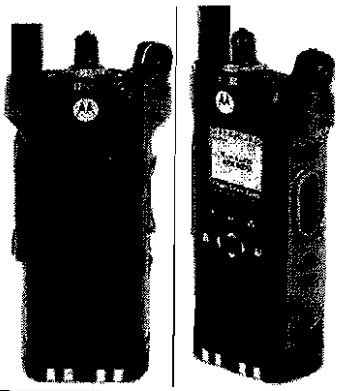
Surveillance

Description	Nomenclature	APC	Price
REPLACEMENT CLEAR ACOUSTIC TUBE	0105954U29	742	$7.90
RUBBER EAR TIP, CLEAR	67009254001	795	$9.95
IMPRES 3 WIRE W/ TRANS TUBE-BLK	PMLN6123A	742	$173.00
IMPRES 3 WIRE W/ TRANS TUBE-BGE	PMLN6124A	742	$173.00
1 WIRE SURVEILLANCE KIT-BLK	PMLN6125A	742	$40.00
1 WIRE SURVEILLANCE KIT -BGE	PMLN6126A	742	$40.00
IMPRES 2 WIRE SURVEILLANCE -BLK	PMLN6127A	742	$105.00
IMPRES 2 WIRE SURVEILLANCE-BGE	PMLN6126A	742	$105.00
SMART 2 WIRE W/TRANS TUBE BLK	PMLN6129A	742	$122.00
SMART 2 WIRE W/TRANS TUBE BIEGE	PMLN6130A	742	$122.00
SURVEILLANCE LOW NOISE KIT	RLN5686A	742	$20.00
SURVEILLANCE HIGH NOISE KIT	RLN5887A	742	$32.00
RX ONLY EARPIECE W/TRANSLUCENT TUBE	RLN6424B	742	$80.00
3-WIRE SURVEILLANCE KIT WITH MICROPHONE & PTT COMBINED, BEIGE Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN6613 adapter	ZMN6031	742	$177.00
2-WIRE SURVEILLANCE KIT WITH MICROPHONE AND PTT COMBINED Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN6613 adapter	ZMN6032	476	$143.00
2-WIRE SURVEILLANCE KIT WITH MICROPHONE AND PTT COMBINED - EXTRA LOUD Exceeds OSHA limits. Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN6613 adapter	ZMN6038	476	$149.00
SPKR MIC W XLOAD EARPIECE Exceeds OSHA limits. REQUIRES NTN5664 Audio Adapter. FACTORY MUTUAL APPROVED.	ZMN6039	742	$190.00

Customer Programming Software

Description	Nomenclature	APC	Price
CPS R08.01.00 ASTRO DIG APX POR MOB	RVN5224P	371	$265.00

Data Compiled 16-May-2013 using DUP and all prices in USD



ASTRO® Digital APX 6000™ Portable Series

700/800 MHz Band

P25 Phase 2 Single Band Capable Radio

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749), HARDWARE KEY (QA01648), OR WACN KEY SUPPLEMENTAL DATA (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY or QA02018- WACN KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. ******

Ship Card

Features

All ASTRO Digital APX 6000 models include the following features:

- Dual Microphone
- 0.5 Watt Rated Audio
- Integrated GPS Hardware Capable*
- Integrated Bluetooth Hardware Capable*
- Detachable Belt Clip for Top Display Model
- Lilon 2150 mAh Battery (PMNN4403)
- Antenna (Dependent on Frequency Band and Type)
- Intelligent Lighting
- ADP Privacy - ships standard with Single Key
- 3 Programmable Side Buttons
- Orange Programmable Button
- 16 Position Mode Rotary Select Switch
- Angled On/Off Volume Knob
- Low Battery Alert Tone
- Noise Cancellation Software
- 1 Top Mounted Programmable 3 Position Toggle Switch
- Top Display: 1 line of text, 1 line of icons, 0 menu lines
- IP67 ships standard with every radio model

ASTRO Digital APX 6000 Limited Keypad and Full Kepad with Dual Display Model also includes:

- Universal Carry Holder
- Unified Call List
- Radio Profiles
- Full Keypad: 4 x 3 alpha-numeric 3 programmable button, 4 way navigation, home and data buttons

- Front Color Display: 4 lines of text, 2 lines of icon

*** Must purchase Software to ENABLE**

*** All APX6000 Portable Radios ship standard with SW and HW ADP Privacy**

All ASTRO Digital APX 6000 Portables are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the current RF capabilities of the radio)

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749), HARDWARE KEY (QA01648), OR WACN KEY SUPPLEMENTAL DATA (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY or QA02018- WACN KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. Also, an Advanced System Keys (ASK- DVN4046) will be required to be ordered. ******

http://ecat.comm.mot.com/ecat/pricebooks/dup/ASK.htm

General Information

The ASTRO Digital APX 6000 Portable Line offers **THREE** different radio hardware models:

Hardware Model	Modes	Alphanumeric Display Lines/Characters	Keypad	Navigation Pad
ASTRO APX 6000 Top Display	96	8 (top)	-	No
ASTRO APX 6000 Limited Keypad	870	14 (front) & 8 (top)	-	Yes
ASTRO APX 6000 Full Keypad	870	14 (front) & 8 (top)	4 x 3	Yes

Operating Modes

ASTRO Digital APX 6000 Radio Models are capable of operating in four different voice communication modes:

- Normal Analog (clear voice)
- 3.6KB ASTRO Digital (both clear and coded voice)
- 9.6 KB ASTRO 25 Digital (both Clear and Coded voice)
- 9.6KB 12.5kHz 2 slot digital TDMA (both clear and coded voice).
- Will be capable of APCO25 Phase 2 functionality in future software releases.

TDMA

FDMA (Frequency Division Multiple Access) is a proven technology that is widely used today in radio systems and is part of APCO 25 Project 25 Phase 1 standard. FDMA carries one call per channel. TDMA (Time Division Multiple Access) will be part of P25 Phase 2 standard and provides double the voice capacity as 2 calls can share 1 channel. Customers can add more users to their systems without the need of additional frequencies or infrastructure. The APX radios support

both P25 Phase 1 and TDMA technologies seamlessly. Using Motorola's unique Dynamic Dual Mode (DDM) capability, the radios dynamically switch between FDMA and TDMA without the user having to change channels. This provides interoperability on demand with existing and future networks.

FLASHport AFTERMARKET UPGRADES

The ASTRO Digital APX 6000 Portable Series Radios are part of the FLASHport Program. This means that ASTRO Digital APX 6000 hardware models can be loaded with different software packages that provide the features and functionalities that our customers require.

System Enhancement Options can be loaded at the time of radio purchase or at a later date through the use of software field upgrades (a USB cable is required for all software upgrades.) The ASTRO Digital APX 6000 portable can be upgraded electronically in the field with new features in the current system or to new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

Ordering Requirements

Ordering procedure is as follows...

Steps	Required Options	Comments
		APX Digital Portable Radio-
1	**APX 6000 700/800 MHz Main Model**	a. H98UCD9PW5AN b. H98UCF9PW6AN c. H98UCH9PW7AN
2	**Operation Mode**	a. Q241; Analog Operation b. Q806; ASTRO digital CAI operation
3	**System Enhancement Software**	a. H35; Conventional Operation b. H37; Smartnet Operation c. H38; Smarzone Operation d. Q173; Smartzone Omnilink (non-P25) e. Q361; P25 9600 Baud Trunking f. QA00580; TDMA

1. Order the APX 6000 Portable Series as the main line item.

- Each hardware model MUST be ordered with one operation mode.
- Default battery is LiIon 2150mAh (-20°c)
- Default belt clip for top display models and carry holder for limited keypad and full keypad models
- Default Antenna is the single appropriate antenna for your RF configuration.

2. Select any other system enhancement options you desire.

- Note - APX Radio ships with 12 month standard warranty.

- Note: Model 1.5 comes standard with 2.5" belt clip.

Common Software Features Supported By

	H38 "SmartZone"			
	"Analog Operation"(Q241/H38)	"ASTRO Digital"(Q806/H38)	"ASTRO Digital"(H38/Q806/Q361)	"TDMA"(QA00580AA)
	Non-Project 25 (3600 Baud)	Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	TDMA OPERATION
RADIO WIDE FEATURES				
Maximum Modes				
ASTRO Digital APX 6000 Top Display	96	96	96	96
ASTRO Digital APX 6000 Limited Keypad	870	870	870	870
ASTRO Digital APX 6000 Full Keypad	870	870	870	870
Analog and Digital Operation	Yes	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable	No	Yes (Digital Only)	Yes (Digital Only)	Yes (Digital Only)
One Touch Operation	Yes	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes	Yes
Surveillance Mode	Yes	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes	Yes
Radio Lock	Yes	Yes	Yes	Yes
Smart Battery	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified above.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
DTMF Signaling	Future	Future	Future	Future

Quick-Call Signaling	Future	Future	Future	Future
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Conventional Interoperable Features when used in the ASTRO Digital CAI Mode (Q806).				
Unaddressed Voice Call (Dispatch Call)	Yes	Yes	Yes	Yes
Talk Group Call	Yes	Yes	Yes	Yes
Group Call Alert™	Yes	Yes	Yes	Yes
Talk Group Identification (TGID)	Yes	Yes	Yes	Yes
Selective Call (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
PTT ID (Individual Identification)	MDC-1200 Only	Yes	Yes	Yes
Call Alert Encode/Decode	MDC-1200 Only	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	MDC-1200 Only	Yes	Yes	Yes
Telephone Interconnect	Yes	Yes	Yes	Yes
Manual Phone Number Entry	Dual Display Only	Dual Display Only	Dual Display Only	Dual Display Only
Selective Radio Inhibit	MDC-1200 Only	Yes	Yes	Yes
Radio Check	MDC-1200 Only	Yes	Yes	Yes
Status/Message	MDC-1200 Only	Yes	Yes	Yes
Trunking Type II Only Features				
Maximum Number of Trunked Systems-20	Yes	Yes	Yes	Yes
Talkgroup Calls	Yes	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes	Yes
Analog/Digital Dual Mode Scan	No	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only	Status Only
Private/Enhanced				

Conversation Encode/Decode	Yes	Yes	Yes	Yes
Remote Monitor/Radio Trace	Yes	Yes	Yes	Yes
Reprogram Request	Yes	Yes	Yes	Yes

H38 "SmartZone"				
	"Analog Operation" (Q241)	"ASTRO Digital" (Q806)	"ASTRO Digital" (H37/Q806/Q361)	"TDMA" (QA00580AA)
		Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	Project 25 (TDMA Operation)
Trunking Type II Only Features				
Voice on Control	-	-	-	-
SmartZone Automatic Site Registration	Yes	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes	Yes
SmartZone Preferred Site	Yes	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the APX 6000 portable series. Separation of frequencies can be as wide as the allowable band per radio model with no degradation of any performance specifications. If an incorrect antenna is used, degraded performance may be experienced.

ZONED OPERATION

This option converts MODE-ONLY ASTRO Digital APX 6000 portables to Zone Operation radios.

For Top Display radios, a maximum of 16 channels (conventional RX and TX pairs or trunking talkgroups) are accessible in a zone. There is a maximum of six accessible zones (96 channels) when zone selection operation is programmed on the 3 position toggle switch and the Zone Bank feature is programmed on a button. The Zone Bank feature allows the 3 position toggle switch to access zones 1-3 or 4-6.

For the Top Display radio there is a maximum of 6 accessible zones, and 16 accessible channels per zone with the overall maximum of 96 channels. For the Dual Display Radios with Limited keypad or Full Keypad, there is a maximum of 50 zones, 625 channels per zone with the overall maximum of 870 channels. These radios provide "ZONE" and "CHAN" menus that allows access to zones and channels not accessible via the switches.

*Note: Top Display Radio codeplugs can be programmed with the same zone/channel configuration as the Dual Display Radios even though not all of the zones and channels are accessible. This is useful for having a common zone/channel template that can be shared between the different radio models.

PROJECT 25 ENCRYPTION

The mode of operation is programmed on a channel-by-channel basis. With the coded/clear switch set to the clear mode, the ASTRO Digital APX6000 radio is capable of transmitting clear analog voice or clear (unencrypted) ASTRO Digital

voice, depending on the channel programming. With the coded/clear switch set to the coded mode, the ASTRO Digital APX 6000 radio will transmit ASTRO Digital encryption depending on the channel programming. ASTRO Digital encryption provides secure communications. ASTRO Digital Encryption (operation in encrypted mode while also operation in 3.6KB or 9.6KB and TDMA ASTRO mode) is capable of XL type encryptions; ASTRO Digital Encryptions does not operate with non-XL encryptions.

An encryption option is not required for either clear analog operation or clear ASTRO Digital operation. Encryption can be ordered with the ASTRO Digital APX 6000 radio either as a factory installed option or separate from the radio for later field installation. ASTRO Digital APX 6000 radio functions include selected ASTRO digital signaling and digital speech coding.

When ordering any of the Encryption Algorithms:

- The DES-OFB and AES encryption algorithms offered are compliant with digital Project 25 standards and does not support analog encryption operation.
- **Requires** the ASTRO Digital CAI (Q806) to operate the DES-OFB and AES encryption.

When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

- Encryption Algorithms can be ordered later via Flash Port.

FIPS 140-2 Compliance

Encryption Modules equipped with AES are FIPS 140-2 compliant. Details regarding the certification, and copies of the relevant certificates, can be obtained on the NIST website at: http://csrc.nist.gov/groups/STM/cmvp/validation.html.

Further information regarding FIPS 140-2 certification may be found using the following link - FIPS 140-2 Crypto Module Validation Program (CMVP) http://csrc.nist.gov/groups/STM/cmvp/index.html

FM INFORMATION

APX 6000 Portable Radio when properly equipped with options Q393 OR QA00581 OR QA00582 OR QA02818 are Factory Mutual (FM/CSA) Approved as intrinsically safe for use in Div 1, Class I , Groups C,D, Class II groups E, F, G, Class III Div 2, Class I A, B,C,D.

ASTRO Text Messaging Service

ASTRO Text Messaging Service will be available on APX 6000 Dual Display Portable radios. Text Messaging Service (TMS) allows subscriber users to send and receive text messages to other subscribers or dispatch operators. Users can select messages and addresses from a predefined list or enter freeform text messages and addresses via the keypad. Text Messaging Service is available on ASTRO P25 Conventional and Trunked IV&D Systems and Subscribers.

Text Message is NOT supported on APX 6000 Top Display (Model I) Portable radio.

Ordering ASTRO Text Messaging for APX 6000 Portable Requires:

- APX 6000 Dual Display
- ASTRO Digital CAI Operation (Q806)
- P25 Conventional (H35)
- Packet Data Interface (Q947)

OR

- APX 6000 Dual Display
- ASTRO Digital CAI Operation (Q806)

- SmartZone Operation (H38)
- ASTRO Project 25 Trunking Software (Q361)
- Packet Data Interface (Q947)

NOTE: *There is no specific option to order for the Text Messaging Service on the subscribers as the functionality is included in the Packet Data option.*

Outdoor Personnel Location Global Positioning Satellite (GPS) Feature

The personnel outdoor location tracking GPS feature enables a dispatcher the ability to locate on-foot patrols and out of the vehicle officers who are involved in life threatening situations. The radio user's GPS position information is sent over the ASTRO 25 Integrated Voice & Data (IV&D) network and is delivered to the dispatch operator using a third party mapping display application at the dispatch center *(Mapping Application is not yet available through Motorola at this time, however an Application Developers Tool Kit is available for 3rd party vendors to use to modify existing applications. See link below for more details.)* On the Dual Display model only it is possible to the user to determine their own location (latitude/longitude) through the use of the location menu.

During normal operation the radio battery capacity will be reduced by 10% to 16%.

In order to obtain an initial GPS fix position, the radio must be located in an open sky, outdoor environment with no barriers that could affect the signal around you or above you. During this initial fix, the radio should NOT be worn on the body as this may affect the process of acquiring signal and/or add additional time to first fix.

NOTE LIMITATIONS OF USE:

GPS works best in an open sky (clear view of the sky with no obstructions) environment. Due to the limitations of the technology, there are certain situations which prevent GPS coverage. These situations include but are not limited to:

- Underground locations (tunnels, subways, etc.)
- Inside of buildings, elevators, parking garages, trains, other covered vehicles, etc.
- Under metal or concrete roof structures
- Urban canyons (between tall buildings or under dense tree coverage)

***GPS Performance may be degraded when the radio is worn against the body and/or against the body within a vehicle.

Due to the limitations mentioned above, GPS should only be utilized as a method to assist the user with location information but not as a means for mission critical communication. Therefore, in any emergency situation, the location should always be verbally reported to the dispatcher.

For further information regarding System Requirements, go to the location solutions price pages at: http://ecat.comm.mot.com/ecat/pricebooks/dup/ALOCATION.htm

Ordering GPS for APX 6000 Portable Requires:

- Enable Internal GPS Operation (QA00782)
- Packet Data Interface (Q947)

700/800 MHz SELF-QUIETING SPURS				

700/800 Models (1.5, 2.5, 3.5)	Frequencies	Model 1.5	Model 2.5	Model 3.5
700 MHz	767.95	X	X	X
800 MHz	855.95		X	X
	863.95	X	X	X

CPS INFORMATION

****Please note that a NEW version of CPS (RVN5224) is required for initial customer orders for this product. This new version of CPS is required for the APX radio shipments.****

FCC Information

Band/Model	Power Output	Transmitter Certification	Emissions	Applicable Rules
700/800 (764-870MHz)	700 - 1 to 2.5W 800 - 1 to 3W	AZ489FT5863	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 20K0F1E	90

Ordering Guide

Enhancement Level Reference Guide

Fleet Management Ordering Guide

APX Portable Comparison Chart

APX Family Brochure

Spec Sheet

RSA Comprehensive

RSA

Portable Accessories Catalog

PSM User Guide

Radio Applications \ Advanced System Key

Models

Description	Nomenclature	APC	Price
APX6000 7/800 MHZ MODEL 1.5 PORTABLE	H98UCD9PW5 N	481	$1,900.00
APX6000 700/800 MODEL 2.5 PORTABLE	H98UCF9PW6 N	481	$2,200.00
APX6000 700/800 MODEL 3.5 PORTABLE	H98UCH9PW7 N	481	$2,600.00

Options

Operation Mode

Description	Nomenclature	APC	Price
ADD: ANALOG OPERATION Requires either a H35, H37, or H38	Q241	481	$0.00
ADD: ASTRO DIGITAL CAI OPERATION Requires either a H35, H37, or H38	Q806	481	$515.00

System Enhancement Software

Description	Nomenclature	APC	Price
ADD: CONVENTIONAL OPERATION	H35	481	$500.00
ADD: SMARTZONE OPERATION A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	H38	481	$1,200.00
ADD: SMARTZONE OMNILINK (NON-P25) Requires H38 SmartZone and Q806 Digitel Operation (required for 3600 baud only trunked systems.) APX 6000 digital radios require Advanced System Keys (ASK - DVN4046A) to be configured to operate on a trunking system.	Q173	481	$200.00
ADD: P25 9600 BAUD TRUNKING Requires H38 and Q806. INCLUDED at "NO Charge" Q173-OmniLink. APX 6000 digitel radios require Advanced System Keys (ASK- DVN4046A) to be configured to operate on a trunking system.	Q361	481	$300.00
ADD: TDMA OPERATION For APX6000 and APX6000XE, QA00580 requires Q806, H36, Q361. If ordering an APX6000Li, QA00580 requires QA02756. A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA00580	481	$400.00
ADD: ENABLE BLUETOOTH SOFTWARE	QA00583	481	$150.00
ENH: ENABLE INTERNAL ACTIVATION AND GPS BASIC FUNCTIONALITY Must have IV&D (Q947) enabled.	QA00782	481	$100.00
ADD: ADVANCED SYSTEM KEY - HARDWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA01648	655	$5.00
ADD: ADVANCED SYSTEM KEY - SOFTWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking.	QA01749	655	$0.00
ADD: ADVANCED WACN KEY SUPP DATA A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA02018	655	$5.00

Systems Enhancement Options

Description	Nomenclature	APC	Price
ADD: PROGRAMMING OVER P25 (OTAP) Compatible with P25 Trunking and Conventional Operation. POP25 requires AES encryption for ASTRO Conventional operation. Must have IV&D (Q947) enabled. To do in field POP25 programming must use Advanced System Key (DVN4046A)	G996	481	$100.00
ENH: RADIO TRACE/ REMOTE MONITOR Requires Q806 and either H37, H36, or H35.	H43	481	$75.00
ENH: ONE TOUCH/STATUS MSG Only compatible with Model 2.5 and 3.5 Radios	H46	481	$75.00
ADD: MULTICAST VOTING SCAN	Q387	481	$200.00

	Q445	481	$150.00
ADD: RADIO PACKET DATA This option is only capable of being used on P25 Digital Conventional and 9600 Trunking Systems. This option is required for IV & D operation.	Q947	481	$200.00
ADD: DVRS PSU ACTIVATION Enables DVRS Enhanced PSU functionality on APX Radios. Requires XTL MSU end Digital Operation.	QA00631	655	$100.00
ADD:LINK LAYER RADIO AUTHENTICATION Requires P25 Trunking (Q361)	QA01767	481	$100.00
ENH: ENHANCED ZONE BANK This option will increase the channel/talkgroup capacity on a Model 1 from 96 to 870. Zone Up/Zone Down, Zone Bank Up/Zone Bank Down will be unlocked with this option.	QA01768	481	$75.00
ENH: ENHANCEMENT LEVEL 2 Please refsrence the Enhancemant Level Referance Guide for more details. This option allows for a few parameters (ZONES, CHANNELS, SYSTEMS PERSONALITIES, UCL ENTRIES, VOICE ANNOUNCMENT, ENCRYPTION KEYS) on the mid tier to go to a high tier	QA01771	481	$200.00
ADD: EXTREME 1-SIDED NOISE REDUCTION Compatible with all APX6000 Radios. Comes standerd on APX6000XE.	QA01833	481	$25.00
ADD: ACCELEROMETER/ MAN DOWN	QA01843	481	$150.00

Algorithm Options

Description	Nomenclature	APC	Price
ADD: TACTICAL REKEY WITH MULTIKEY Must order IV&D (Q947). Incompatible with MDC/ASTRO P25 OTAR with Multikey	H04	481	$350.00
ENH: DVP-XL ENCRYPTION Compatible with Digital and Analog (25kHZ Only) operations. ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES .	H797	481	$487.00
ENH: MULTIKEY	H869	481	$330.00
ENH: AES/DES,DES-XL,DES-OFB ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES. Incompatible with Q625 and Q629	Q15	481	$799.00
ENH: MDC & ASTRO P25 OTAR W/ MULTIKEY Incompatible with the H04 option since Tactical OTAR is included with the Q498 option. Tactical OTAR can only be utilized when IV&D is purchased.	Q498	481	$740.00
ENH: DES,DES-XL,DES-OFB ENCRYPTION Compatible with Analog 25kHZ/DES-OFB Digital 12.5kHZ Only. ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES	Q625	481	$599.00
ENH: AES ENCRYPTION ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES	Q629	481	$475.00

Antenna

Description	Nomenclature	APC	Price
DEL: DELETE STANDARD ANTENNA	H112	481	($10.00)
ALT: 1/4- WAVE 7/800 GPS STUBBY (NAR6595A Length: 3.93"	H122	481	$24.00
ADD: GPS STUBBY ANTENNA (NAG4000) Deletes Standard Antenna and ADDS GPS ONLY antenna.	QA00785	481	$18.00

Battery

Description	Nomenclature	APC	Price
DEL: DELETE STANDARD BATTERY Deletes standard battery PMNN4403 for APX6000 or NNTN8092 for APX8000XE	H207	481	($47.00)
ALT: NIMH IMPRES 2100MAH IP67 BATTERY (NNTN7037) The option will delete the standard option and replace with NIMH IMPRES 2100MAH IP67 BATTERY (NNTN7037)	H335	481	$78.00
ALT: NIMH IMPRES 2000MAH FM/CSA IP67 (NNTN7036) The option will delete the standard battery and replace with NIMH IMPRES 2000MAH FM IP67 BATT (NNTN7038)	Q393	481	$95.00
ALT: NIMH IMPRES 2000 MAH FM/CSA DELTA T (NNTN7035) The option will delete the standard battery and replace with LIION 2000 MAH DELTA-T (NNTN7035). This battery is compatible with H499 and meets FM certification.	QA00581	481	$133.00
ALT: LIION IMPRES 4100 MAH FM/CSA IP67 (NNTN7033A) This option will delete the standard battery and replace it with LITHIUM ION 4000MAH IMPRES (NNTN7033). This battery is compatible with H499 and meets FM certification.	QA00582	481	$165.00
ALT: LIION 4000MAH IMPRES DELTA T			

	QA00781	481	$115.00
This option will delete the standard battery end replace it with LIION 4200MAH IMPRES(NNTN7034). This battery is compatible with H499.			
ALT: LIION IMPRES IP67 2900MAH (NNTN7038)	QA01837	481	$100.00
This option will delete the standard battery and replace it with LIION IMPRES 2900MAH IP67 (NNTN7038).			
ALT: NIMH IMPRES 2000MAH NON-FM DELTA T	QA02726	481	$83.00
This battery will delete the standard battery end replace it with NIMH IMPRES 2000MAH (NNTN7573). This battery requires H499 to meet Delta-T standards. This battery option does NOT provide FM certificetion.			
ALT:LIION IMPRES FM/CSA 2300M (NNTN8092)	QA02818	481	$50.00
This option will delete the standard battery end replace it with LIION IMPRES 2300M (NNTN6092). This option is compatible with H499 and meets FM certificetion.			

Belt Clip(s)

Description	Nomenclature	APC	Price
DEL: DELETE BELT CLIP/ BASIC CARRY HOLDER	H301	481	($10.00)
ALT: BASIC CARRY HOLDER (PMLN5709)	QA00779	481	$29.00
This carry holder equipped with a 2.5" belt clip ships standard with the Dual Display model. It is an alternative to the 2.5" Belt Clip that ships standard with the Top Display model.			
ADD: BELT CLIP 3.0" (HLN6875)	QA01222	481	$12.00
Replaces the standard 2.5" belt clip that ships with the Model 1.5 radio with a 3". Model 1.5 radios in 700/800 and VHF will ship standard with the 2.5" belt clip, and UHF radios will ship with the 3" belt clip.			

Cable(s)

Description	Nomenclature	APC	Price
ADD: DATA CABLE	Q157	655	$75.00
PMKN4013A-GCAI cable at radio interface and USB connection at other end for computer programming. Please note that the PMKN4012A is NOT compatible with the APX 4000			

Housing

Description	Nomenclature	APC	Price
ALT: PUBLIC SAFETY YELLOW	H64	481	$25.00
APX6000 comes standard IP67 unless ordered with H499 Delta T option. APX6000XE comes Delta T standard.			
ALT: HIGH IMPACT GREEN	QA01427	481	$25.00
APX6000 comes standard IP67 unless the H499 Delta-T option is ordered. APX6000XE comes standard Delta-T.			

Programming

Description	Nomenclature	APC	Price
ADD: FRONT PANEL PROGRAMMING (FED GOVT)	Q52	481	$150.00
Compatible with Model 3.5 Radios only.			
ADD: FRONT PANEL PROGRAMMING	Q53	481	$150.00
Compatible with Model 3.5 Radios only. Requires FPP HW dongle (NNTN7526A)to be purchased.			

Ruggedized Housing

Description	Nomenclature	APC	Price
ENH: SUBMERSIBLE (DELTA T)	H499	481	$250.00
Radio Ships with LIION IMPRES 2300MAH DELTA-T Battery.			

H499 is also compatible with (QA02818AA) LIION IMPRES 2300MAH FM DELTA-T,(QA00581) NIMH IMPRES 2000MAH FM DELTA-T, (QA00582)LIION 4000mAH IMPRES FM Delta-T, (QA00761)LIION 4200mAH IMPRES Datta-T, and (QA02726) NIMH IMPRES 2000MAH NON-FM DELTA-T batteries.

Service Options

Description	Nomenclature	APC	Price
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	H885BK	185	$84.00

Provides 2 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be mede only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorole's normal shipping methods. No discounts are allowed

on this option.

ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	H886AQ	185	$125.00
Provides 3 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ADD: 3 YR RSA COMPREHENSIVE	HA00022AB	185	$228.00
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	Q884	185	$44.00
Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH:4 YEAR REPAIR SERVICE ADVANTAGE	Q887	185	$162.00
Provides 4 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			

Manual(s)

Description	Nomenclature	APC	Price
ADD: DATA LINK MANAGER APP CD-PORTABLES	QA00205	655	$0.00
Option provides the NVN5424 Data CD. Please order this option if you would like the Date CD, and are unable to obtain it through other sources such as MOL.			
DEL: USER GUIDE CD	QA01274	481	$0.00
This deletes the user guide CD that ships standard with the radio.			

Packaging

Description	Nomenclature	APC	Price
ADD: SINGLE UNIT PACKING	H842	481	$0.00

Test Results

Description	Nomenclature	APC	Price
ADD: TEST RESULTS / RATED AUDIO PRINTOUT	H799	481	$10.00

Accessories

Bluetooth, Mission Critical Wireless Replacement

Description	Nomenclature	APC	Price
EARTIPS, REPLACEMENT	NNTN8299A	742	$3.15
ACCY,SMPS,MICRO USB,FIXED,CLP,US	PMPN4009A	903	$21.00

Adapter

Description	Nomenclature	APC	Price
APX FPP HW KEY (DONGLE)	NNTN7526	655	$37.00
APX SURVEILLANCE KEYLOAD A	NNTN7869A	742	$65.00

Antenna

Description	Nomenclature	APC	Price
APX 7000 700/800- GPS ANTENNA	NAF5085A	555	$45.00
APX 7000 GPS STUBBY ANTENNA	NAG4000	555	$18.00
This antenna is needed when a user has a Public Safety Microphone attached to the radio and still requires GPS capability. Attaches to the APX radio directly and is only used when the radio is operating in a single band configuration of UHF or 700/800 MHz.			

	NAR6595A	655	$29.00

Battery

Description	Nomenclature	APC	Price
ASSEMBLY,BATTERY,BATT IMP FM RUGGEDIZED LIION 4100M 4300T BLK Dimensions (HxWxD) 5.12" x 2.34" x 1.65"	NNTN7033A	453	$175.00
ASSEMBLY,BATTERY,BATT IMP STD RUGGEDIZED LIION 4200M 4400T BLK Dimensions (HxWxD) 5.13" x 2.34" x 1.65"	NNTN7034A	798	$160.00
APX 7000 IMPRES NIMH 2000MAH RUGGEDIZED PLUS FM BATTERY Motorola now makes batteries to an even more stringent military standard for customers who require a higher level of submersibility protection - MIL-STD-810E, Method 512.3 Immersion, which are referred to as Ruggedized PLUS. Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	NNTN7035	798	$147.00
APX 7000 IMPRES NIMH 2000MAH SUBMERSIBLE (IP67) FM BATTERY Dimensions (HxWxD) 5.34" x 2.34" x 1.57"	NNTN7036	798	$142.00
APX 7000 IMPRES NIMH 2100MAH SUBMERSIBLE (IP67) BATTERY Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	NNTN7037	798	$125.00
BATT IMP STD IP67 LiION 2900M 3100T BLK Dimensions (HxWxD) 3.07" x 2.34" x 1.65"	NNTN7038	798	$140.00
APX 7000 IMPRES NIMH 2100MAH RUGGEDIZED PLUS BATTERY Motorola now makes batteries to an even more stringent military standard for customers who require a higher level of submersibility protection - MIL-STD-810E, Method 512.3 Immersion, which are referred to as Ruggedized PLUS. Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	NNTN7573	798	$130.00
BATT IMP FM R LI ION 2300M 2350T ***This Impress 2300MAH Lithium Ion battery is both FM certified and Ruggedized PLUS (submersible). The battery is offered in a small form factor. It is the standard battery offered with the XE(eXtrEme) radio products.*** Dimensions (HxWxD): 3.07" x 2.34" x 1.65"	NNTN8092	453	$140.00
LIION IMPRES 2150MAH IP67 BATT Dimensions (HxWxD) 3.39" x 2.34" x 1.46"	PMNN4403	453	$125.00

Battery Maintenance Systems

Description	Nomenclature	APC	Price
IMPRES BATTERY DATA READER Provides IMPRES battery users ability to access key usage data via PC. Compatible w/all IMPRES batteries (HT/PRO,TRBO & APX adapter included)	NNTN7392	785	$250.00
FLEET MANAGEMENT RELEASE 1.2	NNTN7676C	785	$10.00
FLEET MANAGEMENT CHRGR INTERFACE UNIT Multi-Unit Charger Interface Unit, attaches to an APX or XTS IMPRES multi-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to IMPRES Battery Fleet Management.	NNTN7677A	785	$80.00
CHARGR INTRFCE UNT GEN1 IMPRES SUC Single-Unit Charger Interface Unit , attaches to an APX IMPRES single-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to the IMPRES Battery Fleet Management.	NNTN8045A	785	$35.00

Belt Clip(s)

Description	Nomenclature	APC	Price
3" PLASTIC BELT CLIP ATTACHMENT	HLN6875A	721	$12.00
2.5" PLASTIC BELT CLIP ATTACHMENT 2.5? Belt Clip is compatible with all APX subscribers except the APX4000 series	NTN8266B	476	$12.00
SWIVEL D CLIP, HIGH ACTIVITY	NTN9212	476	$30.00

Belt Loops

Description	Nomenclature	APC	Price
BELT WAIST BLK	4200865599	271	$20.00

	NTN5243A	795	$23.00
To be used with carry-case PMLN5323, PMLN5324, PMLN5329, PMLN5330, PMLN5328, PMLN5322, PMLN4474 or RLN4851.			
APX 7000 2.5" REPLACEMENT SWIVEL BELT LOOP	PMLN5407	271	$12.00
APX 7000 2.75" REPLACEMENT SWIVEL BELT LOOP	PMLN5408	795	$12.00
APX 7000 3" REPLACEMENT SWIVEL BELT LOOP	PMLN5409	271	$12.00

Bluetooth, Mission Critical Wireless

Description	Nomenclature	APC	Price
1-WIRE EARBUD,29CM CORD,BLACK	NNTN8294A	742	$40.00
1-WIRE EARBUD,116CM CORD,BLACK	NNTN8295A	742	$40.00
WIRELESS 2.0 COMMPORT IC MODULE	NTN2571B	742	$139.00
EARPIECE W/12" CABLE	NTN2572A	742	$151.00
FM Certified; MCW BT; Requires QA00583 to be ordered in the APX radio			
ASSEMBLY,ACCESSORY,WIRELESS ACCY KIT, NFP, 9.5" CABLE	NTN2573B	742	$295.00
FM Certified MCW BT Requires QA00583 to be ordered in the APX radio			
EARPIECE W/9.5" CABLE	NTN2575A	742	$151.00

Carrying Case(s)

Description	Nomenclature	APC	Price
APX6000 CC 2.75 SWLBL 2900&2150MAH	PMLN5657A	795	$65.00
APX6000 CC 3 FIX BL 2900&2150MAH	PMLN5658A	454	$67.00
APX6000 CC 2.75 SWL BL 4200MAH	PMLN5659A	795	$67.00
APX6000 CC 3 FIX BL 4200MAH	PMLN5660A	795	$69.00
APX6000 UNIVERSAL CARRY HOLDER	PMLN5709A	271	$29.00

Charger

Description	Nomenclature	APC	Price
IMPRES CHG MU MACKINAW US/NA/CA/LA	NNTN7065B	785	$788.00
IMPRES CG MUD MACKINAW US/NA/CA/LA	NNTN7073B	785	$1,350.00
APX DUAL UNIT CHARGER WITHOUT DISPLAY	NNTN7586	795	$295.00
This next generation IMPRES charger provides advanced features, including the ability to turn on/off reconditioning, reduced reconditioning time and improved energy efficiency.			
CHR IMP DISP DUC EXT US/NA/CA/LA	NNTN7593A	785	$375.00
IMPRES VEHICULAR CHARGER (FULL KIT)	NNTN7624B	785	$390.00
APX Portable Vehicular Charger (NNTN7624B supports APX XE subscriber lina as well)			
APX CHARGER INSERT ADAPTER FOR XTS MULTI-UNIT CHARGER	NNTN7686A	795	$207.00
Six inserts will ship in one package. Requires charger containing Software Version 3.4 or greater.			
APX CHARGER INSERT ADAPTER FOR XTS SINGLE-UNIT CHARGER	NNTN7687A	795	$45.00
Only 1 SUC insert will ship. Requires charger containing Software Version 3.4 or greater.			
IMPRES CHARGER DISPLAY MODULE	RLN5382B	785	$95.00
APX TRAVEL CHARGER	RLN6434A	785	$101.00
APX 7000 IMPRES CG SU APX7000 US/NA/CA/LA	WPLN7080	795	$125.00

Commport Integrated Microphone/Receiver

Description	Nomenclature	APC	Price
COMMPORT EAR TUBES (PACK OF 10)	RLN5037	115	$26.00

Earpieces

Description	Nomenclature	APC	Price
RECEIVE-ONLY FOAM EARBUD WITH 3.5MM PLUG - INTRINSICALLY SAFE (FM)	AARLN4885	742	$25.00
When used with MTP3000 models, to be used with remote speaker microphones PMMN4078A, PMMN4072A and PMMN4074A			
BONE CONDUCTION EAR MIC	PMLN5653A	742	$399.00

IMPRES Ear Microphone System with Programmable Button and Large Push-to-Talk: Lightweight earpiece that picks up sound through bone conduction

In digitel mode, bone conduction can have a bessier (muffled) sound quality depending on the user

RECEIVE ONLY EARPIECE W/TRANSLUCENT TUBE When used with MTP3000 models, to be used with remote speeker microphones PMMN4078A, PMMN4072A end PMMN4074A	RLN4941A	742	$58.00
EAR RCVR W/COIL CBL&3.5MM PLUG	WADN4190B	742	$43.00

Headsets

Description	Nomenclature	APC	Price
IMPRES TEMPLE TRANSDUCER FM Certified	PMLN5101A	742	$228.00
HEAVY DUTY HEADSET PMLN5275B FM Certified	PMLN5275B	742	$485.00
CORE L/W HEADSET FM Certified	RMN5058A	742	$99.00
RX/TX BOOMLESS TEMPLE TRANSDUCER Temple Transducer Heedset will ONLY work with: Microphone Compatibility HMN4101, HMN4103, HMN4104.	RMN5116A	742	$248.00

Housing

Description	Nomenclature	APC	Price
KIT, MAIN HOUSING, M1, APX6000 ORG	NHN7070 S	481	$99.00
KIT, MAIN HOUSING, M2, APX6000 ORG	NHN7071 S	481	$83.00
KIT, MAIN HOUSING, M3, APX6000 ORG	NHN7072 S	481	$82.00
KIT, MAIN HOUSING, M1, APX6000 BLU	NHN7073 S	481	$99.00
KIT, MAIN HOUSING, M2, APX6000 BLU	NHN7074 S	481	$86.00
KIT, MAIN HOUSING, M3, APX6000 BLU	NHN7075 S	481	$87.00
KIT, MAIN HOUSING, M1, APX6000 RED	NHN7076 S	481	$99.00
KIT, MAIN HOUSING, M2, APX6000 RED	NHN7077 S	481	$86.00
KIT, MAIN HOUSING, M3, APX6000 RED	NHN7078 S	481	$87.00

Programming Tool(s)

Description	Nomenclature	APC	Price
NEO PORT PROG CABLE APX DMR PORT PROG CABLE	PMKN4012B	037	$75.00

Public Safety Microphone(s)

Description	Nomenclature	APC	Price
APX 7000 IMPRES PUBLIC SAFETY MICROPHONE IP55 W/JACK - 18 INCH The antenna needs to be purchased separately. The only antenna currently qualified to work with UHFR1 PSM is PMAE4065A. For optimum RF reception, it is recommended to have the correct type of PSM antanna connected to the PSM. The radio antenna must remain on the redio antenna port for proper and optimum operation. It is recommended to have both PSM antenna and radio antenna connected	PMMN4059	795	$164.00
APX 7000 IMPRES PUBLIC SAFETY MICROPHONE IP55 W/JACK - 30 INCH The antenna needs to be purchased separately. The only antenna currently qualified to work with UHFR1 PSM is PMAE4065A. For optimum RF reception, it is recommended to have the correct type of PSM antenna connected to the PSM. The radio antenna must remain on the radio antenna port for proper and optimum operation. It is recommended to have both PSM antenna and redio antenna connected.	PMMN4061	795	$164.00

Remote Speaker Microphones - RSM's

Description	Nomenclature	APC	Price
DISPLAY RSM GCAI, REPLACEABLE CABLE	3075336B17	372	$90.00
IMPRES RSM NO DSPLY W JACK, NO CHNL	HMN4101B	372	$300.00
IMPRES RSM DSPLY W JACK, NO CHNL	HMN4103B	372	$345.00
IMPRES RSM DSPLY W JACK, W CHNL	HMN4104A	795	$375.00
IMPRES XE RSM, GREEN	NNTN8203A	372	$335.00

Tha XE RSM is the latest in speaker microphone design. It is equipped with duel microphone noise

cancellation technology which improves audio capability in high noise environments. Delta T submersible FM Approved *Radio must be equipped with 7.11 software			
IMPRES XE RSM, BLACK	NNTN8203ABLK	372	$335.00
RSM INTERFACE CABLE, NEXUS 5-POLE	PMKN4107A	795	$53.00
RSM INTERFACE CABLE, NEXUS 4-POLE	PMKN4112A	795	$53.00
RSM INTERFACE CABLE, HIROSE	PMKN4113A	795	$53.00
APX7000 IMPRES RSM, NOISE CANC. EMERGENCY BUTTON 3.5MM JACK IP54	PMMN4062A	795	$107.00
APX IMPRES RSM W/VOL, IP57	PMMN4065A	795	$97.00
IMPRES RSM, 3.5MM AUDIO JACK	PMMN4069A	795	$110.00
IMPRES RSM REPL COIL CORD	RLN6075	372	$85.00

Surveillance

Description	Nomenclature	APC	Price
REPLACEMENT CLEAR ACOUSTIC TUBE	0105954U29	742	$7.90
RUBBER EAR TIP, CLEAR	67009254001	795	$9.95
IMPRES 3 WIRE W/ TRANS TUBE-BLK	PMLN6123A	742	$173.00
IMPRES 3 WIRE W/ TRANS TUBE-BGE	PMLN6124A	742	$173.00
1 WIRE SURVEILLANCE KIT-BLK	PMLN6125A	742	$40.00
1 WIRE SURVEILLANCE KIT -BGE	PMLN6126A	742	$40.00
IMPRES 2 WIRE SURVEILLANCE -BLK	PMLN6127A	742	$105.00
IMPRES 2 WIRE SURVEILLANCE-BGE	PMLN6128A	742	$105.00
SMART 2 WIRE W/TRANS TUBE BLK	PMLN6129A	742	$122.00
SMART 2 WIRE W/TRANS TUBE BIEGE	PMLN6130A	742	$122.00
SURVEILLANCE LOW NOISE KIT	RLN5886A	742	$20.00
SURVEILLANCE HIGH NOISE KIT	RLN5887A	742	$32.00
RX ONLY EARPIECE W/TRANSLUCENT TUBE	RLN6424B	742	$80.00
3-WIRE SURVEILLANCE KIT WITH MICROPHONE & PTT COMBINED, BEIGE Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8613 adapter	ZMN6031	742	$177.00
2-WIRE SURVEILLANCE KIT WITH MICROPHONE AND PTT COMBINED Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8613 adapter	ZMN6032	476	$143.00
2-WIRE SURVEILLANCE KIT WITH MICROPHONE AND PTT COMBINED - EXTRA LOUD Exceeds OSHA limits. Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8613 adapter	ZMN6038	476	$149.00
SPKR MIC W XLOAD EARPIECE Exceeds OSHA limits. REQUIRES NTN5664 Audio Adapter. FACTORY MUTUAL APPROVED.	ZMN6039	742	$190.00

Customer Programming Software

Description	Nomenclature	APC	Price
CPS R08.01.00 ASTRO DIG APX POR MOB	RVN5224P	371	$265.00

Data Compiled 16-May-2013 using DUP and all prices in USD

ASTRO® Digital APX 6000Li™ Portable Series

UHF Range 1

UHF Range 2

P25 Phase 2 Single Band Capable Radio

Special Note for United States - State & Local Markets only:

In accordance to a FCC mandate, VHF (150-174 MHz) and UHF (421-450 MHz) products operating on Part 90 frequencies will be restricted to 12.5 kHz or narrower operations on Jan. 1, 2013.

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749), HARDWARE KEY (QA01648), OR WACN KEY SUPPLEMENTAL DATA (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY or QA02018- WACN KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. ******

Ship Card

Features

All ASTRO Digital APX 6000Li models include the following features:

- Dual Microphone
- 0.5 Watt Rated Audio
- Integrated GPS Hardware Capable*
- Integrated Bluetooth Hardware Capable*
- Detachable Belt Clip for Top Display Model
- Slim LIION 2150 mAH Battery (PMNN4403A)
- Antenna (Dependent on Frequency Band and Type)
- Intelligent Lighting
- ADP Privacy - ships standard with Single Key
- 3 Programmable Side Buttons
- Orange Programmeble Button
- 16 Position Mode Rotary Select Switch
- Angled On/Off Volume Knob
- Low Battery Alert Tone
- Noise Cancelletion Software
- 1 Top Mounted Programmable 3 Position Toggle Switch
- Top Display: 1 line of text, 1 line of icons, 0 menu lines
- IP67 ships standard with every radio model

ASTRO Digital APX 6000Li Limited Keypad and Full Kepad with Dual Display Model also includes:

- Universel Carry Holder
- Unified Cell List
- Front Color Display: 4 lines of text, 2 lines of icon
- Radio Profiles
- Full Keypad: 4 x 3 alpha-numeric 3 programmable button, 4 way navigation, home and deta buttons

*** Must purchase Software to ENABLE**

*** All APX6000 Portable Radios ship standard with SW and HW ADP Privacy**

All ASTRO Digital APX 6000Li Portables are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the currant RF capabilities of the radio)

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749), HARDWARE KEY (QA01648), OR WACN KEY SUPPLEMENTAL DATA (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY or QA02018- WACN KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. Also, an Advanced System Keys (ASK- DVN4046) will be required to be ordered. ******

http://ecat.comm.mot.com/ecat/pricebooks/dup/ASK.htm

General Information

The ASTRO Digital APX 6000Li Portable Line offers **THREE** different radio hardware models:

Hardware Model	Modes	Alphanumeric Display Lines/Characters	Keypad	Navigation Pad
ASTRO APX 6000Li Top Display	96	8 (top)	-	No
ASTRO APX 6000Li Limited Keypad	870	14 (front) & 8 (top)	-	Yes
ASTRO APX 6000Li Full Keypad	870	14 (front) & 8 (top)	4 x 3	Yes

Operating Modes

ASTRO Digital APX 6000Li Radio Models are capable of operating in four different voice communication modes:

- Normal Analog (clear voice)
- 3.6KB ASTRO Digital (both cleer and codad voice)
- 9.6 KB ASTRO 25 Digital (both Clear end Coded voice)
- 9.6KB 12.5kHz 2 slot digital TDMA (both clear end coded voice).
- Will ba capable of APCO25 Phase 2 functionality in future software releases.

TDMA

FDMA (Frequency Division Multiple Accass) is a proven technology that is widely used today in radio systams and is part of APCO 25 Project 25 Phase 1 stendard. FDMA carries one call per channel. TDMA (Tima Division Multiple Access) will be part of P25 Phasa 2 stenderd and provides double the voice capacity as 2 calls can share 1 channel. Customers can edd more users to their systams without the need of additional frequencies or infrastructure. Tha APX radios support both P25 Phase 1 and TDMA technologies seamlessly. Using Motorola's unique Dynamic Dual Mode (DDM) capebility, the radios dynamically switch between FDMA and TDMA without the user having to change channels. This provides interoperebility on demand with existing and future networks.

FLA$Hport AFTERMARKET UPGRADES

The ASTRO Digital APX 6000Li Portable Series Radios are part of the FLASHport Progrem. This means that ASTRO Digital APX 6000Li hardware models can be loaded with different software packages that provide the featuras and functionalities that our customers require.

System Enhancement Options can be loadad at the time of radio purchasa or at a later date through the use of software field upgrades (e USB cable is required for all softwere upgrades.) The ASTRO Digital APX 6000Li portable can be upgraded electronically in the field with new features in the current system or to new systams operation (contingent upon remaining within the same RF sub-band) by ordering upgrede kits.

Ordering Requirements

Ordering procedure is as follows...

Steps	Required Options	Comments
1	**APX 6000Li UHF Main Model**	APX Digital Portable Radio- a. H98QDD9PW5AN b. H98QDF9PW6AN c. H98QDH9PW7AN

d. H98SDD9PW5AN
e. H98SDF9PW6AN
f. H98SDH9PW7AN

2 **APX 6000Li 36 or 96 Digital Trunking Software Package Option** a. QA02756AA

1. Order the APX 8000Li Portable Series as the main line item.

- Default battery is Lilon 2150mAh (-20°c)
- Default belt clip for top display models and carry holder for limited keypad and full keypad models
- Default Antenna is the single appropriate antenna for your RF configuration.
- Note - APX Radio ships with 12 month standard warranty.

2. Choose a Software Package Option

- ~~**QA02756AA:** APX 6000 3600 or 9600 Digital Trunking Package Option- Includes either P25 Trunking OR SmadZone/SmartNet, and OmniLink. Only~~ 9600 OR 3600 Trunking can be configured. Does NOT include 9600/3600 interoperability.
- **Q443BP:** APX6000 Analog 3600 Trunking Package Option- Includes Analog SmartZone/SmartNet, and OmniLink.
- **Q811BP:** APX6000 Digital Conventional Package Option- Includes Digital Conventional and P25 Conventional operation.
- **QA02629AA:** APX6000 Analog Conventional Package Option- Includes Analog Conventional operation.

*APX 6000Li Limitations

- No Infrastructure OTAR Capability
- No Delta T *(IP67 Ships Standard)*
- No Color Housing (Yellow/Green)
- No Multiple Encryption Algorithms not including ADP; such as AES and DES
- No 3600/9600 Interoperability Option
- No Enhanced Level 2 Option Available

Common Software Features Supported By

	H38 "SmartZone"			
	"Analog Operation"(Q241/H38)	"ASTRO Digital"(Q806/H38)	"ASTRO Digital"(H38/Q806/Q361)	"TDMA"(QA00580AA)
	Non-Project 25 (3600 Baud)	Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	TDMA OPERATION
RADIO WIDE FEATURES				
Maximum Modes				
ASTRO Digital APX 6000Li Top Display	96	96	96	96
ASTRO Digital APX 6000Li Limited Keypad	870	870	870	870
ASTRO Digital APX 6000Li Full Keypad	870	870	870	870
Analog and Digital Operation	Yes	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels* (Ref FCC Note)	Yes	Yes	Yes	Yes
Secure Capable	No	Yes (Digital Only)	Yes (Digital Only)	Yes (Digital Only)
One Touch Operation	Yes	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes	Yes
Surveillance Mode	Yes	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes	Yes
Radio Lock	Yes	Yes	Yes	Yes
Smart Battery	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes

ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified above.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
DTMF Signaling	Future	Future	Future	Future
Quick-Call Signaling	Future	Future	Future	Future
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Conventional Interoperable Features when used in the ASTRO Digital CAI Mode (Q806).				
Unaddressed Voice Call (Dispatch Call)	Yes	Yes	Yes	Yes
Talk Group Call	Yes	Yes	Yes	Yes
Group Call Alert™	Yes	Yes	Yes	Yes
Talk Group Identification (TGID)	Yes	Yes	Yes	Yes
Selective Call (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
PTT ID (Individual Identification)	MDC-1200 Only	Yes	Yes	Yes
Call Alert Encode/Decode	MDC-1200 Only	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	MDC-1200 Only	Yes	Yes	Yes
Telephone Interconnect	Yes	Yes	Yes	Yes
Manual Phone Number Entry	Dual Display Only	Dual Display Only	Dual Display Only	Dual Display Only
Selective Radio Inhibit	MDC-1200 Only	Yes	Yes	Yes
Radio Check	MDC-1200 Only	Yes	Yes	Yes
Status/Message	MDC-1200 Only	Yes	Yes	Yes
Trunking Type II Only Features				
Maximum Number of Trunked Systems-20	Yes	Yes	Yes	Yes
Talkgroup Calls	Yes	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes	Yes
Analog/Digital Dual Mode Scan	No	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only	Status Only
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes	Yes
Remote Monitor/Radio Trace	Yes	Yes	Yes	Yes
Reprogram Request	Yes	Yes	Yes	Yes

H38 "SmartZone"				
	"Analog Operation" (Q241)	"ASTRO Digital" (Q806)	"ASTRO Digital" (H37/Q806/Q361)	"TDMA" (QA00580AA)
		Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	Project 25 (TDMA Operation)
Trunking Type II Only Features				
Voice on Control	-	-	-	-
SmartZone Automatic Site Registration	Yes	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes	Yes
SmartZone Preferred Site	Yes	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be edhered to on the APX 6000Li portable series. Separetion of frequencies can be es wide as the allowable band per radio model with no degradation of any performance specifications. If an incorrect antenna is used, degraded performance may be experienced.

ZONED OPERATION

This option converts MODE-ONLY ASTRO Digital APX 6000Li portables to Zone Operation radios.

For Top Display radios, a maximum of 16 channels (conventional RX and TX pairs or trunking talkgroups) are accessible in e zone. Thera is a maximum of six accessible zones (96 channels) when zone selection operation is programmed on the 3 position toggle switch and the Zone Bank feature is programmed on a button. The Zone Bank feature allows the 3 position toggle switch to access zones 1-3 or 4-6.

For the Top Display radio there is e maximum of 6 accessible zones, and 16 accessible channels per zone with the overall maximum of 96 channels. For the Dual Display Radios with Limited keypad or Full Keypad, there is a maximum of 50 zones, 625 channels per zone with the overall maximum of 670 channels. These radios provide "ZONE" and "CHAN" menus that allows access to zones and channels not accessible via the switches.

*Note: Top Display Radio codeplugs can be programmed with the same zone/channel configuration as the Dual Display Radios even though not all of the zones and channels are accessible. This is useful for having a common zone/channel template that can be shared between the different radio models.

PROJECT 25 ENCRYPTION

The mode of operation is programmed on a channel-by-channel basis. With the coded/cleer switch set to the clear mode, the ASTRO Digital APX6000Li radio is capeble of transmitting cleer analog voice or clear (unencrypted) ASTRO Digital voice, depending on the chennel programming. With the coded/cleer switch set to the coded mode, the ASTRO Digital APX 6000Li radio will transmit ASTRO Digitel encryption depending on the channel programming. ASTRO Digitel encryption provides secure communications. ASTRO Digitel Encryption (operation in encrypted mode while also operation in 3.6KB or 9.6KB end TDMA ASTRO mode) is capeble of XL type encryptions; ASTRO Digital Encryptions does not operate with non-XL encryptions.

An encryption option is not required for either cleer analog operetion or clear ASTRO Digital operation. Encryption can be ordered with the ASTRO Digitel APX 6000Li radio either as e factory installed option or seperete from the radio for later field installation. ASTRO Digital APX 6000Li redio functions include selected ASTRO digital signaling end digital speech coding.

When ordering any of the Encryption Algorithms:

- The DES-OFB and AES encryption algorithms offered are compliant with digital Project 25 standards and does not support analog encryption operation.
- **Requires** the ASTRO Digital CAI (Q806) to operate the DES-OFB and AES encryption.

When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

- Encryption Algorithms can be ordered later via Flash Port.

FIPS 140-2 Compliance

Encryption Modules equipped with AES are FIPS 140-2 compliant. Details regarding the certification, and copies of the relevant certificates, can be obtained on the NIST website et: http://csrc.nist.gov/groups/STM/cmvp/validation.html.

Further information regarding FIPS 140-2 certification may be found using the following link - FIPS 140-2 Crypto Module Validetion Program (CMVP) http://csrc.nist.gov/groups/STM/cmvp/index.html

FM INFORMATION

APX 6000Li Portable Redio when properly equipped with options Q393 OR QA00561 OR QA00562 OR QA02616 ere Factory Mutual (FM/CSA) Approved as intrinsicelly safe for use in Div 1, Class I , Groups C,D, Class II groups E, F, G, Class III Div 2, Class I A, B,C,D.

ASTRO Text Messaging Service

ASTRO Text Messaging Service will be availeble on APX 8000Li Dual Display Portable radios. Text Messeging Service (TMS) allows subscriber usera to send end receive text messages to other subscribers or dispatch operators. Users can select messeges and addresses from a predefined list or enter freeform text messeges and addresses via the keypad. Text Messaging Service is available on ASTRO P25 Conventionel and Trunked IV&D Systems and Subscribers.

Text Message is NOT supported on APX 6000Li Top Display (Model I) Portable radio.

Ordering ASTRO Text Messaging for APX 6000 Portable Requires:

- APX 6000 Dual Display
- Q811BP Software Package
- Packet Data Interface (Q947)

OR

- APX 6000 Dual Display
- QA02756AA Software Package
- Packet Data Interface (Q947)

NOTE: *There is no specific option to order for the Text Messeging Service on the subscribers as the functionality is included in the Packet Data option.*

Outdoor Personnel Location Global Positioning Satellite (GPS) Feature

The personnel outdoor location tracking GPS feature enables a dispatcher the ability to locate on-foot patrols and out of the vehicle officers who are involved in life threatening situations. The radio user's GPS position information is sent over the ASTRO 25 Integrated Voice & Data (IV&D) network and is delivered to the dispatch operator using a third party mapping display application at the dispatch center *(Mapping Application is not yet available through Motorola at this time, however an Application Developers Tool Kit is available for 3rd party vendors to use to modify existing applications. See link below for more details.)* On the Dual Display model only it is possible to the user to determine their own location (latitude/longitude) through the use of the location menu.

During normal operation the radio battery capacity will be reduced by 10% to 16%.

In order to obtain an initial GPS fix position, the radio must be located in an open sky, outdoor environment with no barriers that could effect the signal around you or above you. During this initial fix, the radio should NOT be worn on the body as this may affect the process of acquiring signal and/or add additional time to first fix.

NOTE LIMITATIONS OF USE:

GPS works best in an open sky (clear view of the sky with no obstructions) environment. Due to the limitations of the technology, there are certain situations which prevent GPS coverage. These situations include but are not limited to:

- Underground locations (tunnels, subways, etc.)
- Inside of buildings, elevators, parking garages, trains, other covered vehicles, etc.
- Under metal or concrete roof structures
- Urban canyons (between tall buildings or under dense tree coverage)

***GPS Performance may be degraded when the radio is worn against the body and/or against the body within a vehicle.

Due to the limitations mentioned above, GPS should only be utilized as a method to assist the user with location information but not as a means for mission critical communication. Therefore, in any emergency situation, the location should always be verbally reported to the dispatcher.

For further information regarding System Requirements, go to the location solutions price pages at:
http://ecat.comm.mot.com/ecat/pricebooks/dup/ALOCATION.htm

Ordering GPS for APX 6000Li Portable Requires:

- Enable Internal GPS Operation (QA00782)
- Packet Data Interface (Q947)

UHF SELF-QUIETING SPURS	
UHFR1 Models (1.5, 2.5, 3.5)	**Frequencies**
	383.975
	393.2125
	395.975
	432
	456
UHFR2 Models (1.5, 2.5, 3.5)	**Frequencies**
	456
	479.975
	480

CPS INFORMATION

****Please note that a NEW version of CPS (RVN5224) is required for initial customer orders for this product. This new version of CPS is required for the APX radio shipments. ****

FCC Information

Band/Model	Power Output	Transmitter Certification	Emissions	Applicable Rules
UHF Range 1 (380-470 MHz)	1 to 5 Watts	AZ489FT4892	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W	90

UHF Range 2* (450-520 MHz)	1 to 5 Watts	AZ489FT4903	11K0F3E, 8K10F1D, 8K10F1E, 8K10F1W	90

*The FCC is mandating all Public Safety and Industrial/Business licensees convert existing 25 kHz efficiency operations in the VHF and UHF bands to minimum 12.5 kHz efficiency analog or digital operation, and that going forward they implement no more 25 kHz efficiency systems. To implement this mandate, the FCC developed rules and deadlines that impact both radio users and equipment providers.

Ordering Guide

Fleet Management Ordering Guide

APX Portable Comperison Chart

APX Family Brochure

Spec Sheet

RSA Comprehensive

RSA

Portable Accessories Catalog

Radio Applications \ Advanced System Key

Section A: Required Main Model and Options

For standerd Radio Operation Steps 1 - 6

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

Main Model *(Must Select One)*

Description	Nomenclature	APC	Price
APX6000 UHF R1 MODEL 1.5 PORTABLE	H98QDD9PW5 N	481	$1,900.00
Description	**Nomenclature**	**APC**	**Price**
APX6000 UHF R1 MODEL 2.5 PORTABLE	H96QDF9PW6 N	481	$2,200.00
Description	**Nomenclature**	**APC**	**Price**
APX6000 UHFR1 MODEL 3.5 PORTABLE	H98QDH9PW7 N	481	$2,600.00
Description	**Nomenclature**	**APC**	**Price**
APX6000 UHF R2 MODEL 1.5 PORTABLE	H98SDD9PW5 N	481	$1,900.00
Description	**Nomenclature**	**APC**	**Price**
APX6000 UHF R2 MODEL 2.5 PORTABLE	H98SDF9PW6 N	481	$2,200.00
Description	**Nomenclature**	**APC**	**Price**
APX8000 UHF R2 MODEL 3.5 PORTABLE	H98SDH9PW7 N	481	$2,600.00

Software Packages *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: 9600 TRUNKING OR 3600 DIGITAL TRUNKING	QA02756	755	$1,570.00
ENH: LI ANALOG 3600 TRUNKING	Q443	755	$1,100.00
ENH: LI DIGITAL CONVENTIONAL	Q811	755	$650.00
ENH: LI ANALOG CONVENTIONAL	QA02629	755	$400.00

System Key *(Must Select One)*

ADD: ADVANCED SYSTEM KEY - HARDWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a QVN4046 to be purchased.	QA01648	655	$5.00
ADD: ADVANCED SYSTEM KEY - SOFTWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking.	QA01749	655	$0.00
ADD: ADVANCED WACN KEY SUPP DATA	QA02018	655	$5.00

A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4048 to be purchased.

System Enhancement Options *(Optional)*

ADD: PROGRAMMING OVER P25 (OTAP)	G996	481	$100.00
Compatible with P25 Trunking and Conventional Operation. POP25 requires AES encryption for ASTRO Conventional operation. Must have IV&D (Q947) enabled. To do in field POP25 programming must use Advanced System Key (DVN4046A)			
ENH: RADIO TRACE/ REMOTE MONITOR	H43	481	$75.00
Requires Q808 and either H37, H36, or H35.			
ENH: ONE TOUCH/STATUS MSG	H46	481	$75.00
Only compatible with Model 2.5 and 3.5 Radios			
ADD: MULTICAST VOTING SCAN	Q387	481	$200.00
ADD: RADIO PACKET DATA	Q947	481	$200.00
This option is only capable of being used on P25 Digital Conventional and 9600 Trunking Systems. This option is required for IV & D operation.			
ADD:LINK LAYER RADIO AUTHENTICATION	QA01767	481	$100.00
Requires P25 Trunking (Q361).			
ADD: DVRS PSU ACTIVATION	QA00631	655	$100.00
Enables DVRS Enhanced PSU functionality on APX Radios. Requires XTL MSU and Digital Operation.			
ADD: TDMA OPERATION	QA00580	481	$400.00
For APX8000 and APX8000XE, QA00580 requires Q808, H38, Q361. If ordering an APX6000Li, QA00580 requires QA02756. A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.			
ADD: ENABLE BLUETOOTH SOFTWARE	QA00583	481	$150.00
ENH: ENABLE INTERNAL ACTIVATION AND GPS BASIC FUNCTIONALITY	QA00782	481	$100.00
Must have IV&D (Q647) enabled.			
ENH: ENHANCED ZONE BANK	QA01768	481	$75.00
This option will increase the channel/talkgroup capacity on a Model 1 from 96 to 670. Zone Up/Zone Down, Zone Bank Up/Zone Bank Down will be unlocked with this option.			
ADD: APX Personnel Accountability	Q445	481	$150.00
Description	**Nomenclature**	**APC**	**Price**
ADD: EXTREME 1-SIDED NOISE REDUCTION	QA01833	481	$25.00
Compatible with all APX6000 Radios. Comes standard on APX8000XE.			
ADD: ACCELEROMETER/ MAN DOWN	QA01843	481	$150.00

Algorithm Option *(Can only pick one Encryption Algo)*

Description	**Nomenclature**	**APC**	**Price**
ENH: DVP-XL ENCRYPTION	H797	481	$487.00
Compatible with Digital and Analog (25kHZ Only) operations. ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES .			
ENH: MULTIKEY	H869	481	$330.00
ENH: DES,DES-XL,DES-OFB ENCRYPTION	Q625	481	$599.00
Compatible with Analog 25kHZ/DES-OFB Digital 12.5kHZ Only. ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES			
ENH: AES ENCRYPTION	Q629	481	$475.00
ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES .			
ADD: TACTICAL REKEY WITH MULTIKEY	H04	481	$350.00
Must order IV&D (Q947). Incompatible with MDC/ASTRO P25 OTAR with Multikey			
ENH: AES/DES,DES-XL,DES-OFB	Q15	481	$799.00
ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES. Incompatible with Q625 and Q629			

Antenna

Description	**Nomenclature**	**APC**	**Price**
DEL: DELETE STANDARD ANTENNA	H112	481	($10.00)
Description	**Nomenclature**	**APC**	**Price**
ALT: UHFR1 GPS STUBBY ANTENNA (FAF5259A)	QA02017	481	$55.00
Length: 3.88" Only Compatible with- H98QDD9PW6AN, H98QDF9PW6AN, H98QDH9PW7AN			
Description	**Nomenclature**	**APC**	**Price**
ALT: UHFR2 GPS STUBBY ANTENNA (FAF5260)	QA02017	481	$24.00
Only Compatible with - H98SDD9PW6AN, H98SDF9PW6AN, H98SDH9PW7AN			

Battery

DEL: DELETE STANDARD BATTERY	H207	481	($47.00)
Deletes standard battery PMNN4403 for APX6000 or NNTN8092 for APX8000XE			
ALT: NIMH IMPRES 2100MAH IP67 BATTERY (NNTN7037)	H335	481	$78.00
The option will delete the standard option and replace with NIMH IMPRES 2100MAH IP67 BATTERY(NNTN7037)			
ALT: NIMH IMPRES 2000MAH FM/CSA IP67 (NNTN7038)	Q393	481	$95.00
The option will delete the standard battery			

and replace with NIMH IMPRES 2000MAH FM IP67 BATT (NNTN7036)			
ALT: LIION IMPRES 4100 MAH FM/CSA IP67 (NNTN7033A)	QA00582	481	$165.00
This option will delete the standard battery and replace it with LITHIUM ION 4000MAH IMPRES (NNTN7033). This battery is compatible with H499 and meets FM certification.			
ALT: LIION 4200MAH IMPRES DELTA-T	QA00781	481	$115.00
This option will delete the standard battery and replace it with LIION 4200MAH IMPRES(NNTN7034). This battery is compatible with H499.			
ALT: LIION IMPRES IP67 2900MAH (NNTN7038)	QA01837	481	$100.00
This option will delete the standard battery and replace it with LIION IMPRES 2900MAH IP67 (NNTN7038).			
ALT:LIION IMPRES FM/CSA 2300M (NNTN8092)	QA02818	481	$50.00
This option will delete the standard battery and replace it with LIION IMPRES 2300M (NNTN8092). This option is compatible with H499 and meets FM certification.			
ALT: SLIM LIION 2150MAH BATTERY(PMNN)	QA02021	481	$80.00

Belt Clip (s)

Model 1.5 comes standard with 3" belt clip

Description	Nomenclature	APC	Price
DEL: DELETE BELT CLIP/ BASIC CARRY HOLDER	H301	481	($10.00)
ALT: BASIC CARRY HOLDER (PMLN5709)	QA00779	481	$29.00
This carry holder equipped with a 2.5" belt clip ships standard with the Dual Display model. It is an alternative to the 2.5" Belt Clip that ships standard with the Top Display model.			
ADD: BELT CLIP 3.0" (HLN6875)	QA01222	481	$12.00
Replaces the standard 2.5" belt clip that ships with the Model 1.5 radio with a 3". Model 1.5 radios in 700/800 and VHF will ship standard with the 2.5" belt clip, and UHF radios will ship with the 3" belt clip.			

Cable (s)

Description	Nomenclature	APC	Price
ADD: DATA CABLE	Q157	855	$75.00
PMKN4013A-GCAI cable at radio interface and USB connection at other end for computer programming. Please note that the PMKN4012A is NOT compatible with the APX 4000			

Programming

Description	Nomenclature	APC	Price
ENH: FRONT PANEL PROGRAMMING	Q53	430	$150.00
Compatible with model 3.5 radios only			
ADD: FRONT PANEL PROGRAM (FED GOVT)	Q52	470	$150.00

Service Options

Description	Nomenclature	APC	Price
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	H885BK	185	$84.00
Provides 2 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	H886AQ	185	$126.00
Provides 3 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ADD: 3 YR RSA COMPREHENSIVE	HA00022AB	185	$228.00
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	Q884	185	$44.00
Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH:4 YEAR REPAIR SERVICE ADVANTAGE	Q887	185	$162.00
Provides 4 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			

Manual

Description	Nomenclature	APC	Price
DEL: USER GUIDE CD	QA01274	481	$0.00
This deletes the user guide CD that ships standard with the radio.			
ADD: DATA LINK MANAGER APP CD-PORTABLES	QA00205	655	$0.00
Option provides the NVN6424 Data CD. Please order this option if you would like the Data CD, and are unable to obtain it through other sources such as MOL.			

Packaging

Description	Nomenclature	APC	Price
ADD: SINGLE UNIT PACKING	H842	481	$0.00

Section D: Aftermarket Accessories

Adapters

Description	Nomenclature	APC	Price
APX SURVEILLANCE KEYLOAD A	NNTN7669A	742	$65.00
APX FPP HW KEY (DONGLE)	NNTN7528	655	$37.00

Radio Antennas

Description	Nomenclature	APC	Price
UHF1 GPS STUBBY ANTENNA	FAF5259A	481	$80.00
APX 7000 GPS STUBBY ANTENNA	NAG4000	555	$18.00

This antenna is needed when a user has a Public Safety Microphone attached to the radio and still requires GPS capability. Attaches to the APX radio directly and is only used when the radio is operating in a single band configuration of UHF or 700/800 MHz.

Batteries

Description	Nomenclature	APC	Price
APX 7000 IMPRES NIMH 2100MAH SUBMERSIBLE (IP67) BATTERY	NNTN7037	798	$125.00
Dimensions (HxWxD) 5.07" x 2.34" x 1.57"			
APX 7000 IMPRES NIMH 2000MAH SUBMERSIBLE (IP67) FM BATTERY	NNTN7036	798	$142.00
Dimensions (HxWxD) 5.34" x 2.34" x 1.57"			
BATT IMP STD IP67 LIION 2900M 3100T BLK	NNTN7038	798	$140.00
Dimensions (HxWxD) 3.07" x 2.34" x 1.65"			
ASSEMBLY,BATTERY,BATT IMP FM RUGGEDIZED LIION 4100M 4300T BLK	NNTN7033A	453	$175.00
Dimensions (HxWxD) 5.12" x 2.34" x 1.65"			
ASSEMBLY,BATTERY,BATT IMP STD RUGGEDIZED LIION 4200M 4400T BLK	NNTN7034A	798	$180.00
Dimensions (HxWxD) 5.13" x 2.34" x 1.65"			
APX 7000 IMPRES NIMH 2000MAH RUGGEDIZED PLUS FM BATTERY	NNTN7035	798	$147.00
Motorola now makes batteries to an even more stringent military standard for customers who require a higher level of submersibility protection - MIL-STD-810E, Method 512.3 Immersion, which are referred to as Ruggedized PLUS. Dimensions (HxWxD) 5.07" x 2.34" x 1.57"			
LIION IMPRES 2150MAH IP67 BATT	PMNN4403	453	$125.00
Dimensions (HxWxD) 3.39" x 2.34" x 1.46"			
APX 7000 IMPRES NIMH 2100MAH RUGGEDIZED PLUS BATTERY	NNTN7573	798	$130.00
Motorola now makes batteries to an even more stringent military standard for customers who require a higher level of submersibility protection - MIL-STD-810E, Method 512.3 Immersion, which are referred to as Ruggedized PLUS. Dimensions (HxWxD) 5.07" x 2.34" x 1.57"			
BATT IMP FM R LI ION 2300M 2350T	NNTN8092	453	$140.00
This Impress 2300MAH Lithium Ion battery is both FM certified and Ruggedized PLUS (submersible). The battery is offered in a small form factor. It is the standard battery offered with the XE(eXtrEme) radio products. Dimensions (HxWxD): 3.07" x 2.34" x 1.65"			

Battery Fleet Management

Description	Nomenclature	APC	Price
FLEET MANAGEMENT CHRGR INTERFACE UNIT	NNTN7677A	765	$80.00
Multi-Unit Charger Interface Unit, attaches to an APX or XTS IMPRES multi-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to IMPRES Battery Fleet Management.			
FLEET MANAGEMENT RELEASE 1.2	NNTN7676C	785	$10.00
CHARGR INTRFCE UNT GEN1 IMPRES SUC	NNTN8045A	785	$35.00
Single-Unit Charger Interface Unit , attaches to an APX IMPRES single-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to the IMPRES Battery Fleet Management.			
IMPRES BATTERY DATA READER	NNTN7392	785	$250.00
Provides IMPRES battery users ability to access key usage data via PC. Compatible w/all IMPRES batteries (HT/PRO,TRBO & APX adapter included)			

Bluetooth Mission Critical Wireless

Description	Nomenclature	APC	Price
WIRELESS 2.0 COMMPORT IC MODULE	NTN2571B	742	$139.00
EARPIECE W/12" CABLE FM Certified; MCW BT; Requires QA00583 to be ordered in the APX radio	NTN2572A	742	$151.00
ASSEMBLY,ACCESSORY,WIRELESS ACCY KIT, NFP, 9.5" CABLE FM Certified MCW BT Requires QA00583 to be ordered in the APX radio	NTN2573B	742	$295.00
EARPIECE W/9.5" CABLE	NTN2575A	742	$151.00
1-WIRE EARBUD,29CM CORD,BLACK	NNTN8294A	742	$40.00
1-WIRE EARBUD,116CM CORD,BLACK	NNTN8295A	742	$40.00

Bluetooth, Mission Critical Wireless Replacement Parts

Description	Nomenclature	APC	Price
ACCY,SMPS,MICRO USB,FIXED,CLP,US	PMPN4009A	903	$21.00
COMMPORT EAR TUBES (PACK OF 10)	RLN5037	115	$26.00
EARTIPS, REPLACEMENT	NNTN8299A	742	$3.15

Belt Clip(s)

Description	Nomenclature	APC	Price
3" PLASTIC BELT CLIP ATTACHMENT	HLN6875A	721	$12.00
SWIVEL D CLIP, HIGH ACTIVITY	NTN9212	476	$30.00

Belt Loops

Description	Nomenclature	APC	Price
APX 7000 2.5" REPLACEMENT SWIVEL BELT LOOP	PMLN5407	271	$12.00
APX 7000 2.75" REPLACEMENT SWIVEL BELT LOOP	PMLN5408	795	$12.00
APX 7000 3" REPLACEMENT SWIVEL BELT LOOP	PMLN5409	271	$12.00

Carrying Case(s)

Note: The APX 6000Li does not have leather carry cases available for NNTN7036 or NNTN7037

Description	Nomenclature	APC	Price
APX6000 CC 2.75 SWLBL 2900&2150MAH	PMLN5657A	795	$65.00
APX6000 CC 3 FIX BL 2900&2150MAH	PMLN5656A	454	$67.00
APX6000 UNIVERSAL CARRY HOLDER	PMLN5709A	271	$29.00
APX6000 CC 2.75 SWL BL 4200MAH	PMLN5659A	795	$67.00
APX6000 CC 3 FIX BL 4200MAH	PMLN5660A	795	$69.00

Charger

Description	Nomenclature	APC	Price
IMPRES CHG MU MACKINAW US/NA/CA/LA	NNTN7065B	765	$768.00
IMPRES CG MUD MACKINAW US/NA/CA/LA	NNTN7073B	765	$1,350.00
APX DUAL UNIT CHARGER WITHOUT DISPLAY This next generation IMPRES charger provides advanced features, including the ability to turn on/off reconditioning, reduced reconditioning time and improved energy efficiency.	NNTN7566	795	$295.00
CHR IMP DISP DUC EXT US/NA/CA/LA	NNTN7593A	765	$375.00
APX CHARGER INSERT ADAPTER FOR XTS MULTI-UNIT CHARGER Six inserts will ship in one package. Requires charger containing Software Version 3.4 or greater.	NNTN7686A	795	$207.00
APX CHARGER INSERT ADAPTER FOR XTS SINGLE-UNIT CHARGER Only 1 SUC insert will ship. Requires charger containing Software Version 3.4 or greater.	NNTN7687A	795	$45.00
APX TRAVEL CHARGER	RLN6434A	785	$101.00
IMPRES VEHICULAR CHARGER (FULL KIT) APX Portable Vehicular Charger (NNTN7624B supports APX XE subscriber line as well)	NNTN7624B	785	$390.00
IMPRES CHARGER DISPLAY MODULE	RLN5382B	765	$95.00

CPS

Earpieces

Description	Nomenclature	APC	Price
RECEIVE-ONLY FOAM EARBUD WITH 3.5MM PLUG - INTRINSICALLY SAFE (FM) When used with MTP3000 models, to be used with remote speaker microphones PMMN4076A, PMMN4072A and PMMN4074A	AARLN4885	742	$25.00
EAR RCVR W/COIL CBL&3.5MM PLUG	WADN4190B	742	$43.00

Headsets

Description	Nomenclature	APC	Price
IMPRES TEMPLE TRANSDUCER FM Certified	PMLN5101A	742	$228.00
HEAVY DUTY HEADSET PMLN5275B FM Certified	PMLN5275B	742	$485.00
CORE L/W HEADSET FM Certified	RMN5058A	742	$99.00
RX/TX BOOMLESS TEMPLE TRANSDUCER Temple Transducer Headset will ONLY work with: Microphone Compatibility HMN4101, HMN4103, HMN4104.	RMN5118A	742	$248.00

Remote Speaker Microphones - RSM's

Description	Nomenclature	APC	Price
IMPRES RSM DSPLY W JACK, W CHNL	HMN4104A	795	$375.00
IMPRES RSM DSPLY W JACK, NO CHNL	HMN4103B	372	$345.00
IMPRES RSM NO DSPLY W JACK, NO CHNL	HMN4101B	372	$300.00
APX7000 IMPRES RSM, NOISE CANC. EMERGENCY BUTTON 3.5MM JACK IP54	PMMN4062A	795	$107.00
APX IMPRES RSM W/VOL, IP57	PMMN4065A	795	$97.00
IMPRES RSM, 3.5MM AUDIO JACK	PMMN4069A	795	$110.00
IMPRES XE RSM, BLACK	NNTN8203ABLK	372	$335.00
RSM INTERFACE CABLE, NEXUS 5-POLE	PMKN4107A	795	$53.00

Public Safety Microphones - PSM's

Public Safety Microphones are available with 700/800 MHz portables only.

Surveillance Kits, Wired

Description	Nomenclature	APC	Price
RUBBER EAR TIP, CLEAR	8709254001	795	$9.95
IMPRES 3 WIRE W/ TRANS TUBE-BLK	PMLN6123A	742	$173.00
IMPRES 3 WIRE W/ TRANS TUBE-BGE	PMLN6124A	742	$173.00
1 WIRE SURVEILLANCE KIT-BLK	PMLN6125A	742	$40.00
1 WIRE SURVEILLANCE KIT -BGE	PMLN6126A	742	$40.00
IMPRES 2 WIRE SURVEILLANCE -BLK	PMLN6127A	742	$105.00
IMPRES 2 WIRE SURVEILLANCE-BGE	PMLN6128A	742	$105.00
SMART 2 WIRE W/TRANS TUBE BLK	PMLN6129A	742	$122.00
SMART 2 WIRE W/TRANS TUBE BIEGE	PMLN6130A	742	$122.00
SURVEILLANCE LOW NOISE KIT	RLN5886A	742	$20.00
REPLACEMENT CLEAR ACOUSTIC TUBE	0105954U29	742	$7.90
3-WIRE SURVEILLANCE KIT WITH MICROPHONE & PTT COMBINED, BEIGE Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8813 adapter	ZMN6031	742	$177.00
RX ONLY EARPIECE W/TRANSLUCENT TUBE	RLN6424B	742	$60.00
SURVEILLANCE HIGH NOISE KIT	RLN5887A	742	$32.00
SPKR MIC W XLOAD EARPIECE Exceeds OSHA limits. REQUIRES NTN5664 Audio Adapter. FACTORY MUTUAL APPROVED.	ZMN6039	742	$190.00
2-WIRE SURVEILLANCE KIT WITH MICROPHONE AND PTT COMBINED - EXTRA LOUD Exceeds OSHA limits. Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8813 adapter	ZMN6038	476	$149.00
2-WIRE SURVEILLANCE KIT WITH MICROPHONE AND PTT COMBINED Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8813 adapter	ZMN6032	476	$143.00

Data Compiled 16-May-2013 using DUP and all prices in USD

ASTRO® Digital APX 6000Li™ Portable Series

VHF Band

P25 Phase 2 Single Band Capable Radio

Special Note for United States - State & Local Markets only:

In accordance to a FCC mandate, VHF (150-174 MHz) and UHF (421- 450 MHz) products operating on Part 90 frequencies will be restricted to 12.5 kHz or narrower operations on Jan. 1, 2013.

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749), HARDWARE KEY (QA01648), OR WACN KEY SUPPLEMENTAL DATA (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY or QA02018- WACN KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. ******

Ship Card

Features

All ASTRO Digital APX 6000Li models include the following features:

- Dual Microphone
- 0.5 Watt Rated Audio
- Integrated GPS Herdware Cepeble*
- Intagrated Bluetooth Hardware Capable*
- Detachable Belt Clip for Top Display Model
- Slim LIION 2150 mAH Battery (PMNN4403A)
- Antenna (Dependent on Frequency Band and Type)
- Intelligent Lighting
- ADP Privacy - ships standard with Single Key
- 3 Programmable Side Buttons
- Orenge Programmable Button
- 16 Position Mode Rotary Select Switch
- Angled On/Off Volume Knob
- Low Battery Alert Tone
- Noise Cancellation Software
- 1 Top Mounted Programmable 3 Position Toggle Switch
- Top Display: 1 line of text, 1 line of icons, 0 menu lines
- IP67 ships standard with every radio model

ASTRO Digital APX 6000 Limited Keypad and Full Kepad with Dual Display Modsl also includes:

- Universal Carry Holder
- Unified Call List
- Radio Profiles
- Full Keypad: 4 x 3 alpha-numeric 3 programmable button, 4 way navigation, home and data

buttons

- Front Color Display: 4 lines of text, 2 lines of icon

*** Must purchase Software to ENABLE**

*** All APX6000 Portable Radios ship standard with SW and HW ADP Privacy**

All ASTRO Digital APX 6000Li Portables are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the current RF capabilities of the radio)

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749), HARDWARE KEY (QA01648), OR WACN KEY SUPPLEMENTAL DATA (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY or QA02018- WACN KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. Also, an Advanced System Keys (ASK- DVN4046) will be required to be ordered. ******

http://ecat.comm.mot.com/ecat/pricebooks/dup/ASK.htm

General Information

The ASTRO Digital APX 6000Li Portable Line offers **THREE** different radio hardware models:

Hardware Model	Modes	Alphanumeric Display Lines/Characters	Keypad	Navigation Pad
ASTRO APX 6000 Top Display	96	8 (top)	-	No
ASTRO APX 6000 Limited Keypad	870	14 (front) & 8 (top)	-	Yes
ASTRO APX 6000 Full Keypad	870	14 (front) & 6 (top)	4 x 3	Yes

Operating Modes

ASTRO Digital APX 6000Li Radio Models are capable of operating in four different voice communication modes:

- Normal Analog (clear voice)
- 3.6KB ASTRO Digital (both clear and coded voice)
- 9.6 KB ASTRO 25 Digital (both Clear and Coded voice)
- 9.6KB 12.5kHz 2 slot digital TDMA (both clear and coded voice).
- Will be capable of APCO25 Phase 2 functionality in future software releases.

TDMA

FDMA (Frequency Division Multiple Access) is a proven technology that is widely used today in radio systems and is part of APCO 25 Project 25 Phase 1 standard. FDMA carries one call per channel. TDMA (Time Division Multiple Access) will be part of P25 Phase 2 standard and provides double the voice capacity as 2 calls can share 1 channel. Customers can add more users to their systems without the need of additional frequencies or infrastructure. The APX radios support both P25 Phase 1 and TDMA technologies seamlessly. Using Motorola's unique Dynamic Dual Mode (DDM) capability, the radios dynamically switch between FDMA and TDMA without the user having to change channels. This provides interoperability on demand with existing and future networks.

FLASHport AFTERMARKET UPGRADES

The ASTRO Digital APX 6000Li Portable Series Radios are part of the FLASHport Program. This means that ASTRO Digital APX 6000Li hardware models can be loaded with different software packages that provide the features and functionalities that our customers require.

System Enhancement Options can be loaded at the time of radio purchase or at a later date through the use of software field upgrades (a USB cable is required for all software upgrades.) The ASTRO Digital APX 6000Li portable can be upgraded electronically in the field with new features in the current system or to new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

Ordering Requirements

Ordering procedure is as follows...

Steps	Required Options	Comments
		APX Digital Portable Radio-

1	**APX 6000Li 700/800 Main Model**	a. H98KGD9PW5AN b. H98KGF9PW6AN c. H98KGH9PW7AN
2	**APX 6000Li 36 or 96 Digital Trunking Software Package Option**	a. QA02756AA

1. Order the APX 6000Li Portable Series as the main line item.

- Default battery is LiIon 2150mAh (-20°c)
- Default belt clip for top display models and carry holder for limited keypad and full keypad models
- Default Antenna is the single appropriate antenna for your RF configuration.
- Note - APX Radio ships with 12 month standard warranty.

2. Choose a Software Package Option

- **QA02756AA:** APX 6000 3600 or 9600 Digital Trunking Package Option- Includes either P25 Trunking OR SmartZone/SmartNet, and OmniLink. Only 9600 OR 3600 Trunking can be configured. Does NOT include 9600/3600 interoperability.
- **Q443BP:** APX6000 Analog 3600 Trunking Package Option- Includes Analog SmartZone/SmartNet, and OmniLink.
- **Q811BP:** APX6000 Digital Conventional Package Option- Includes Digital Conventional and P25 Conventional operation.
- **QA02829AA:** APX6000 Analog Conventional Package Option- Includes Analog Conventional operation.

*APX 6000Li Limitations

- No Infrastructure OTAR Capability
- No Delta T *(IP67 Ships Standard)*
- No Color Housing (Yellow/Green)
- No Multiple Encryption Algorithms not including ADP; such as AES and DES
- No 3600/9600 Interoperability Option
- No Enhanced Level 2 Option Availeble

Common Software Features Supported By

H38 "SmartZone"				
	"Analog Operation"(Q241/H38)	"ASTRO Digital"(Q806/H38)	"ASTRO Digital"(H38/Q806/Q361)	"TDMA"(QA00580AA)
	Non-Project 25 (3600 Baud)	Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	TDMA OPERATION
RADIO WIDE FEATURES				
Maximum Modes				
ASTRO Digital APX 6000 Top Display	96	96	96	96
ASTRO Digital APX 6000 Limited Keypad	870	870	870	870
ASTRO Digital APX 6000 Full Keypad	870	870	870	870
Analog and Digital Operation	Yes	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable	No	Yes (Digital Only)	Yes (Digital Only)	Yes (Digital Only)
One Touch Operation	Yes	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes	Yes
Surveillance Mode	Yes	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes	Yes
Radio Lock	Yes	Yes	Yes	Yes
Smart Battery	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified above.				

CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
DTMF Signaling	Future	Future	Future	Future
Quick-Call Signaling	Future	Future	Future	Future
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Conventional Interoperable Features when used in the ASTRO Digital CAI Mode (Q806).				
Unaddressed Voice Call (Dispatch Call)	Yes	Yes	Yes	Yes
Talk Group Call	Yes	Yes	Yes	Yes
Group Call Alert™	Yes	Yes	Yes	Yes
Talk Group Identification (TGID)	Yes	Yes	Yes	Yes
Selective Call (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
PTT ID (Individual Identification)	MDC-1200 Only	Yes	Yes	Yes
Call Alert Encode/Decode	MDC-1200 Only	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	MDC-1200 Only	Yes	Yes	Yes
Telephone Interconnect	Yes	Yes	Yes	Yes
Manual Phone Number Entry	Dual Display Only	Dual Display Only	Dual Display Only	Dual Display Only
Selective Radio Inhibit	MDC-1200 Only	Yes	Yes	Yes
Radio Check	MDC-1200 Only	Yes	Yes	Yes
Status/Message	MDC-1200 Only	Yes	Yes	Yes
Trunking Type II Only Features				
Maximum Number of Trunked Systems-20	Yes	Yes	Yes	Yes
Talkgroup Calls	Yes	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes	Yes
Analog/Digital Dual Mode Scan	No	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only	Status Only
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes	Yes
Remote Monitor/Radio Trace	Yes	Yes	Yes	Yes
Reprogram Request	Yes	Yes	Yes	Yes

H38 "SmartZone"				
	"Analog Operation" (Q241)	"ASTRO Digital" (Q806)	"ASTRO Digital" (H37/Q806/Q361)	"TDMA" (QA00580AA)
		Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	Project 25 (TDMA Operation)
Trunking Type II Only Features				
Voice on Control	-	-	-	-
SmartZone Automatic Site Registration	Yes	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes	Yes
SmartZone Preferred Site	Yes	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the APX 6000 portable series. Separation of frequencies can be as wide as

the alloweble band per radio model with no degredetion of any performence specifications. If an incorrect antenna is used, degraded performance may be experienced.

ZONED OPERATION

This option converts MODE-ONLY ASTRO Digital APX 6000 portebles to Zone Operetion redios.

For Top Displey radios, e maximum of 16 channels (conventionel RX end TX peirs or trunking talkgroups) are eccessible in e zone. There is a maximum of six accessible zones (96 channels) when zone selection operation is progremmed on the 3 position toggle switch and the Zone Bank feeture is progremmed on a button. The Zone Bank feature allows the 3 position toggle switch to eccess zones 1-3 or 4-6.

For the Top Display radio there is e maximum of 6 accessible zones, end 16 accessible chennels per zone with the overall maximum of 96 channels. For the Dual Display Redios with Limited keypad or Full Keypad, there is a maximum of 50 zones, 625 channels per zone with the overall meximum of 870 chennels. Thase radios provide "ZONE" and "CHAN" menus that allows access to zones end chennels not accessible via the switches.

*Note: Top Displey Radio codeplugs can be programmed with the same zone/channel configuretion as the Duel Display Radios even though not all of the zones and channels are accessible. This is useful for heving a common zone/channel tamplete thet can be shared between the different radio models.

PROJECT 25 ENCRYPTION

The mode of operation is programmed on a channel-by-channel basis. With the coded/clear switch set to the clear mode, the ASTRO Digital APX6000 radio is capable of transmitting clear enelog voice or clear (unencrypted) ASTRO Digital voice, depending on the channel programming. With the coded/clear switch set to the coded mode, the ASTRO Digitel APX 6000 radio will transmit ASTRO Digitel encryption depending on the channel programming. ASTRO Digital encryption provides secure communications. ASTRO Digital Encryption (operation in encrypted mode while also operation in 3.6KB or 9.6KB and TDMA ASTRO mode) is capable of XL type encryptions; ASTRO Digital Encryptions does not operate with non-XL encryptions.

An encryption option is not required for either clear enalog operation or clear ASTRO Digitel operation. Encryption can be ordered with the ASTRO Digital APX 6000 radio either as e factory installed option or separate from the radio for later field installation. ASTRO Digital APX 6000 radio functions include selected ASTRO digital signaling and digital speech coding.

When ordering any of the Encryption Algorithms:

- The DES-OFB and AES encryption algorithms offered are compliant with digital Project 25 standards and does not support analog encryption operation.
- **Requires** the ASTRO Digital CAI (Q806) to operate the DES-OFB end AES encryption.

When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

- Encryption Algorithms can be ordered later via Flash Port.

FIPS 140-2 Compliance

Encryption Modules equipped with AES are FIPS 140-2 compliant. Details regarding the certification, and copies of the relevant certificates, can be obtained on the NIST website at: http://csrc.nist.gov/groups/STM/cmvp/validation.html.

Further information regarding FIPS 140-2 certification may be found using the following link - FIPS 140-2 Crypto Module Validation Program (CMVP) http://csrc.nist.gov/groups/STM/cmvp/index.html

FM INFORMATION

APX 6000 Portable Radio when properly equipped with options Q393 OR QA00581 OR QA00582 OR QA02818 are Factory Mutual (FM/CSA) Approved as intrinsically safe for use in Div 1, Class I , Groups C,D, Class II groups E, F, G, Class III Div 2, Class I A, B,C,D.

ASTRO Text Messaging Service

ASTRO Text Messaging Service will be available on APX 6000 Duel Display Portable radios. Text Messaging Service (TMS) allows subscriber users to send and receive text messages to other subscribers or dispatch operators. Users can select messages and addresses from a predefined list or enter freeform text messages and addresses via the keypad. Text Messaging Service is available on ASTRO P25 Conventional end Trunked IV&D Systems and Subscribers.

Text Message is NOT supported on APX 6000 (Model I) Top Display Portable radio.

Ordering ASTRO Text Messaging for APX 6000 Portable Requires:

- APX 6000 Dual Display
- Q811BP Software Package
- Packet Data Interface (Q947)

OR

- APX 6000 Duel Display
- QA02756AA Software Package
- Packet Data Interface (Q947)

***NOTE:** There is no specific option to order for the Text Messaging Service on the subscribers as the functionality is included in the Packet Data option.*

Outdoor Personnel Location Global Positioning Satellite (GPS) Feature

The personnel outdoor location tracking GPS feature enables a dispatcher the ebility to locate on-foot petrols and out of the vehicle officers who are involved in life threatening situations. The radio user's GPS position information is sent over the ASTRO 25 Integrated Voice & Data (IV&D) network end is delivered to the dispatch operator using a third party mapping display application at the dispatch center *(Mapping Application is not yet available through Motorola at this time, however an Application Developers Tool Kit is available for 3rd party vendors to use to modify existing applications. See link below for more details.)* On the Dual Display model only it is possible to the user to determine their own location (latitude/longitude) through the use of the location menu.

During normal operation the radio battery capacity will be reduced by 10% to 16%.

In order to obtain an initial GPS fix position, the radio must be located in en open sky, outdoor environment with no barriers that could affect the signal around you or above you. During this initial fix, the radio should NOT be worn on the body as this may affect the process of acquiring signal and/or add additional time to first fix.

NOTE LIMITATIONS OF USE:

GPS works best in an open sky (clear view of the sky with no obstructions) environment. Due to the limitations of the technology, there are certain situations which prevent GPS coverage. These situations include but are not limited to:

- Underground locations (tunnels, subways, etc.)
- Inside of buildings, elevators, parking garages, trains, other covered vehicles, atc.
- Under metal or concrete roof structures
- Urban canyons (between tall buildings or under dense tree coverege)

***GPS Performance may be degraded when the radio is worn against the body and/or against the body within a vehicle.

Due to the limitations mentioned above, GPS should only be utilized as a method to assist the user with location information but not as a means for mission critical communication. Therefore, in any emergency situation, the location should always be verbally reported to the dispatcher.

For further information regarding System Requirements, go to the location solutions price pages at:
http://ecat.comm.mot.com/ecat/pricebooks/dup/ALOCATION.htm

Ordering GPS for APX 6000 Portable Requires:

- Enable Internal GPS Operation (QA00782)
- Packet Data Interface (Q947)

VHF SELF-QUIETING SPURS	
VHF Models (1.5, 2.5, 3.5)	Frequencies
	143.9875
	144
	152.8625
	152.9
	152.9375
	152.975
	155.9875
	159.575
	150.575

CPS INFORMATION

****Please note that a NEW version of CPS (RVN5224) is required for initial customer orders for this product. This new version of CPS is required for the APX radio shipments. ****

FCC Information

Band/Model	Power Output	Transmitter Certification	Emissions	Applicable Rules
VHF (136-174 MHz)	1 to 6 Watts	AZ489FT3829	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 20K0F1E	90

***The FCC is mandating all Public Safety and Industrial/Business licensees convert existing 25 kHz efficiency operations in the VHF and UHF bands to minimum 12.5 kHz efficiency anelog or digital operation, and that going forward they implement no more 25 kHz efficiency systems. To implement this mandate, the FCC developed rules and deadlines that impact both radio users and equipment providers.**

SUB-BAND PERFORMANCE
VHF 136-174MHz in all models

Ordering Guide

APX Portable Comparison Chart

APX Family Brochure

Spec Sheet

RSA Comprehensive

RSA

Portable Accessories Catalog

Radio Applications \ Advanced System Key

Section A: Required Main Model and Options

For standard Radio Operation Steps 1 - 6

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

Main Model *(Must Select One)*

Description	Nomenclature	APC	Price
APX6000 VHF MHZ MODEL 1.5 PORTABLE	H98KGD9PW5 N	481	$1,900.00
Description	**Nomenclature**	**APC**	**Price**
APX6000 VHF MHZ MODEL 2.5 PORTABLE	H98KGF9PW6 N	481	$2,200.00
Description	**Nomenclature**	**APC**	**Price**
APX6000 VHF MHZ MODEL 3.5 PORTABLE	H98KGH9PW7 N	481	$2,600.00

Software Packages *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: 9600 TRUNKING OR 3600 DIGITAL TRUNKING	QA02756	755	$1,570.00
ENH: LI ANALOG 3600 TRUNKING	Q443	755	$1,100.00
ENH: LI DIGITAL CONVENTIONAL	Q811	755	$650.00
ENH: LI ANALOG CONVENTIONAL	QA02829	755	$400.00

System Key *(Must Select One)*

ADD: ADVANCED SYSTEM KEY - HARDWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA01648	655	$5.00
ADD: ADVANCED SYSTEM KEY - SOFTWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking.	QA01749	655	$0.00
ADD: ADVANCED WACN KEY SUPP DATA A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA02018	655	$5.00

System Enhancement Options *(Optional)*

ADD: PROGRAMMING OVER P25 (OTAP) Compatible with P25 Trunking and Conventional Operation. PDP25 requires AES encryption for ASTRO Conventional operation. Must have IV&D (Q947) enabled. To do in field PDP25 programming must use Advanced System Key (DVN4046A)	G996	481	$100.00
ENH: RADIO TRACE/ REMOTE MONITOR	H43	481	$75.00

Requires Q806 and either H37, H36, or H35.

ENH: ONE TOUCH/STATUS MSG	H46	481	$75.00
Only compatible with Model 2.5 and 3.5 Radios			
ADD: MULTICAST VOTING SCAN	Q387	481	$200.00
ADD: RADIO PACKET DATA	Q947	481	$200.00
This option is only capable of being used on P25 Digital Conventional and 9600 Trunking Systems. This option is required for IV & D operation.			
ADD:LINK LAYER RADIO AUTHENTICATION	QA01767	481	$100.00
Requires P25 Trunking (Q361)			
ADD: DVRS PSU ACTIVATION	QA00631	655	$100.00
Enables DVRS Enhanced PSU functionality on APX Radios. Requires XTL MSU and Digital Operation.			
ADD: TDMA OPERATION	QA00580	481	$400.00
For APX6000 and APX6000XE, QA00660 requires Q806, H38, Q361. If ordering an APX6000LI, QA00580 requires QA02756. A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.			
ADD: ENABLE BLUETOOTH SOFTWARE	QA00583	481	$150.00
ENH: ENABLE INTERNAL ACTIVATION AND GPS BASIC FUNCTIONALITY	QA00782	481	$100.00
Must have IV&D (Q947) enabled.			
ENH: ENHANCED ZONE BANK	QA01768	481	$75.00
This option will increase the channel/talkgroup capacity on a Model 1 from 96 to 670. Zone Up/Zone Down, Zone Bank Up/Zone Bank Down will be unlocked with this option.			
ADD: APX Personnel Accountability	Q445	481	$150.00
itemn=QA01833,5#]			
ADD: ACCELEROMETER/ MAN DOWN	QA01843	481	$150.00

Algorithm Option *(Can only pick one Encryption Algo)*

Description	Nomenclature	APC	Price
ENH: DVP-XL ENCRYPTION	H797	481	$487.00
Compatible with Digital and Analog (25kHZ Only) operations. ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES .			
ENH: MULTIKEY	H869	481	$330.00
ENH: DES,DES-XL,DES-OFB ENCRYPTION	Q625	481	$599.00
Compatible with Analog 25kHZ/DES-OFB Digital 12.5kHZ Only. ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES			
ENH: AES ENCRYPTION	Q629	481	$475.00
ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES			
ADD: TACTICAL REKEY WITH MULTIKEY	H04	481	$350.00
Must order IV&D (Q947). Incompatible with MDC/ASTRO P25 OTAR with Multikey			
ENH: AES/DES,DES-XL,DES-OFB	Q15	481	$799.00
ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES. Incompatible with Q625 and Q629			

Antenna

Description	Nomenclature	APC	Price
DEL: DELETE STANDARD ANTENNA	H112	481	($10.00)

Battery

DEL: DELETE STANDARD BATTERY	H207	481	($47.00)
Deletes standard battery PMNN4403 or NNTN8092 for APX6000XE			
ALT: NIMH IMPRES 2100MAH IP67 BATTERY (NNTN7037)	H335	481	$78.00
The option will delete the standard option and replace with NIMH IMPRES 2100MAH IP67 BATTERY(NNTN7037)			
ALT: NiMH IMPRES 2000MAH FM/CSA IP67 (NNTN7038)	Q393	481	$95.00
The option will delete the standard battery and replace with NIMH IMPRES 2000MAH FM IP67 BATT (NNTN7038)			
ALT: LIION IMPRES 4100 MAH FM/CSA IP67 (NNTN7033A)	QA00582	481	$165.00
This option will delete the standard battery and replace it with LITHIUM ION 4000MAH IMPRES (NNTN7033). This battery is compatible with H499 and meets FM certification.			
ALT: LIION 4200MAH IMPRES DELTA-T	QA00781	481	$115.00
This option will delete the standard battery and replace it with LIION 4200MAH IMPRES(NNTN7034). This battery is compatible with H499.			
ALT: LIION IMPRES IP67 2900MAH (NNTN7038)	QA01837	481	$100.00
This option will delete the standard battery and replace it with LIION IMPRES 2900MAH IP67 (NNTN7038).			
ALT:LIION IMPRES FM/CSA 2300M (NNTN8092)	QA02818	481	$50.00
This option will delete the standard battery and replace it with LIION IMPRES 2300M (NNTN8092). This option is compatible with H499 and meets FM certification.			
ALT: SLIM LIION 2150MAH BATTERY(PMNN)	QA02021	481	$80.00

8: Belt Clip (s)

Model 1.5 comes standard with 2.5" belt clip

Description	Nomenclature	APC	Price
DEL: DELETE BELT CLIP/ BASIC CARRY HOLDER	H301	481	($10.00)
ALT: BASIC CARRY HOLDER (PMLN5709)	QA00779	481	$29.00

This carry holder equipped with a 2.5" belt clip ships standard with the Dual Display model. It is an alternative to the 2.5" Belt Clip that ships standard with the Top Display model.

ADD: BELT CLIP 3.0" (HLN6875)	QA01222	481	$12.00

Replaces the standard 2.5" belt clip that ships with the Model 1.5 radio with a 3".
Model 1.5 radios in 700/800 and VHF will ship standard with the 2.5" belt clip, and UHF radios will ship with the 3" belt clip.

Cable (s)

Description	Nomenclature	APC	Price
ADD: DATA CABLE	Q157	655	$75.00

PMKN4013A-GCAI cable at radio interface and USB connection at other end for computer programming. Please note that the PMKN4012A is NOT compatible with the APX 4000

Programming

Description	Nomenclature	APC	Price
ENH: FRONT PANEL PROGRAMMING	Q53	430	$150.00

Compatible with model 3.5 radios only

ADD: FRONT PANEL PROGRAM (FED GOVT)	Q52	470	$150.00

Service Options

Description	Nomenclature	APC	Price
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	H885BK	185	$84.00

Provides 2 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	H886AQ	185	$125.00

Provides 3 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ADD: 3 YR RSA COMPREHENSIVE	HA00022AB	185	$228.00

Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	Q884	185	$44.00

Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ENH:4 YEAR REPAIR SERVICE ADVANTAGE	Q887	185	$162.00

Provides 4 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Manual

Description	Nomenclature	APC	Price
DEL: USER GUIDE CD	QA01274	481	$0.00

This deletes the user guide CD that ships standard with the radio.

ADD: DATA LINK MANAGER APP CD-PORTABLES	QA00205	655	$0.00

Option provides the NVN5424 Data CD. Please order this option if you would like the Data CD, and are unable to obtain it through other sources such as MOL.

Packaging

Description	Nomenclature	APC	Price
ADD: SINGLE UNIT PACKING	H842	481	$0.00

Section D: Aftermarket Accessories

Adapters

Description	Nomenclature	APC	Price
APX SURVEILLANCE KEYLOAD A	NNTN7889A	742	$65.00
APX FPP HW KEY (DONGLE)	NNTN7526	655	$37.00

Radio Antennas

Description	Nomenclature	APC	Price
VHF/GPS ANTENNA	NAR6593A	555	$38.00

Batteries

Description	Nomenclature	APC	Price
APX 7000 IMPRES NIMH 2100MAH SUBMERSIBLE (IP67) BATTERY Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	NNTN7037	798	$125.00
APX 7000 IMPRES NIMH 2000MAH SUBMERSIBLE (IP67) FM BATTERY Dimensions (HxWxD) 5.34" x 2.34" x 1.57"	NNTN7036	798	$142.00
BATT IMP STD IP67 LiION 2900M 3100T BLK Dimensions (HxWxD) 3.07" x 2.34" x 1.65"	NNTN7038	798	$140.00
ASSEMBLY,BATTERY,BATT IMP FM RUGGEDIZED LIION 4100M 4300T BLK Dimensions (HxWxD) 5.12" x 2.34" x 1.65"	NNTN7033A	453	$175.00
~~ASSEMBLY,BATTERY,BATT IMP STD RUGGEDIZED LIION 4200M 4400T BLK~~ Dimensions (HxWxD) 5.13" x 2.34" x 1.65"	~~NNTN7034A~~	~~798~~	~~$160.00~~
APX 7000 IMPRES NIMH 2000MAH RUGGEDIZED PLUS FM BATTERY Motorola now makes batteries to an even more stringent military standard for customers who require a higher level of submersibility protection - MIL-STD-810E, Method 512.3 Immersion, which are referred to as Ruggedized PLUS. Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	NNTN7035	798	$147.00
LIION IMPRES 2150MAH IP67 BATT Dimensions (HxWxD) 3.38" x 2.34" x 1.46"	PMNN4403	453	$125.00
APX 7000 IMPRES NIMH 2100MAH RUGGEDIZED PLUS BATTERY Motorola now makes batteries to an even more stringent military standard for customers who require a higher level of submersibility protection - MIL-STD-810E, Method 512.3 Immersion, which are referred to as Ruggedized PLUS. Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	NNTN7573	798	$130.00
BATT IMP FM R LI ION 2300M 2350T ***This Impress 2300MAH Lithium Ion battery is both FM certified and Ruggedized PLUS (submersible). The battery is offered in a small form factor. It is the standard battery offered with the XE(eXtrEme) radio products.*** Dimensions (HxWxD): 3.07" x 2.34" x 1.85"	NNTN8092	453	$140.00

Battery Fleet Management

Description	Nomenclature	APC	Price
FLEET MANAGEMENT CHRGR INTERFACE UNIT Multi-Unit Charger Interface Unit, attaches to an APX or XTS IMPRES multi-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to IMPRES Battery Fleet Management.	NNTN7677A	785	$80.00
FLEET MANAGEMENT RELEASE 1.2	NNTN7676C	785	$10.00
CHARGR INTRFCE UNT GEN1 IMPRES SUC Single-Unit Charger Interface Unit , attaches to an APX IMPRES single-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to the IMPRES Battery Fleet Management.	NNTN8045A	785	$35.00
IMPRES BATTERY DATA READER Provides IMPRES battery users ability to access key usage data via PC. Compatible w/all IMPRES batteries (HT/PRO,TRBO & APX adapter included)	NNTN7392	785	$250.00

Bluetooth Mission Critical Wireless

Description	Nomenclature	APC	Price
WIRELESS 2.0 COMMPORT IC MODULE	NTN2571B	742	$139.00
EARPIECE W/12" CABLE FM Certified; MCW BT; Requires QA00583 to be ordered in the APX radio	NTN2572A	742	$151.00
ASSEMBLY,ACCESSORY,WIRELESS ACCY KIT, NFP, 9.5" CABLE FM Certified MCW BT Requires QA00583 to be ordered in the APX radio	NTN2573B	742	$295.00
EARPIECE W/9.5" CABLE	NTN2575A	742	$151.00
1-WIRE EARBUD,29CM CORD,BLACK	NNTN8294A	742	$40.00
1-WIRE EARBUD,116CM CORD,BLACK	NNTN8295A	742	$40.00

Bluetooth, Mission Critical Wireless Replacement Parts

Description	Nomenclature	APC	Price
ACCY,SMPS,MICRO USB,FIXED,CLP,US	PMPN4009A	903	$21.00
COMMPORT EAR TUBES (PACK OF 10)	RLN5037	115	$26.00
EARTIPS, REPLACEMENT	NNTN8299A	742	$3.15

Belt Clip(s)

Description	Nomenclature	APC	Price

3" PLASTIC BELT CLIP ATTACHMENT	HLN6875A	721	$12.00
SWIVEL D CLIP, HIGH ACTIVITY	NTN9212	476	$30.00

Belt Loops

Description	Nomenclature	APC	Price
APX 7000 2.5" REPLACEMENT SWIVEL BELT LOOP	PMLN5407	271	$12.00
APX 7000 2.75" REPLACEMENT SWIVEL BELT LOOP	PMLN5408	795	$12.00
APX 7000 3" REPLACEMENT SWIVEL BELT LOOP	PMLN5409	271	$12.00

Carrying Case(s)

Note: The APX 6000Li does not have leather carry cases available for NNTN7036 or NNTN7037

Description	Nomenclature	APC	Price
APX6000 CC 2.75 SWLBL 2900&2150MAH	PMLN5657A	795	$65.00
APX6000 CC 3 FIX BL 2900&2150MAH	PMLN5658A	454	$67.00
APX6000 UNIVERSAL CARRY HOLDER	PMLN5709A	271	$29.00
APX6000 CC 2.75 SWL BL 4200MAH	PMLN5659A	795	$67.00
APX6000 CC 3 FIX BL 4200MAH	PMLN5660A	795	$69.00

Charger

Description	Nomenclature	APC	Price
IMPRES CHG MU MACKINAW US/NA/CA/LA	NNTN7065B	785	$766.00
IMPRES CG MUD MACKINAW US/NA/CA/LA	NNTN7073B	765	$1,350.00
APX DUAL UNIT CHARGER WITHOUT DISPLAY	NNTN7586	795	$295.00
This next generation IMPRES charger provides advanced features, including the ability to turn on/off reconditioning, reduced reconditioning time and improved energy efficiency.			
CHR IMP DISP DUC EXT US/NA/CA/LA	NNTN7593A	785	$375.00
APX CHARGER INSERT ADAPTER FOR XTS MULTI-UNIT CHARGER	NNTN7686A	795	$207.00
Six inserts will ship in one package. Requires charger containing Software Version 3.4 or greater.			
APX CHARGER INSERT ADAPTER FOR XTS SINGLE-UNIT CHARGER	NNTN7687A	795	$45.00
Only 1 SUC insert will ship. Requires charger containing Software Version 3.4 or greater.			
APX TRAVEL CHARGER	RLN6434A	785	$101.00
IMPRES VEHICULAR CHARGER (FULL KIT)	NNTN7624B	765	$390.00
APX Portable Vehicular Charger (NNTN7624B supports APX XE subscriber line as well)			
IMPRES CHARGER DISPLAY MODULE	RLN5382B	785	$95.00

CPS

Earpieces

Description	Nomenclature	APC	Price
RECEIVE-ONLY FOAM EARBUD WITH 3.5MM PLUG - INTRINSICALLY SAFE (FM)	AARLN4685	742	$25.00
When used with MTP3000 models, to be used with remote speaker microphones PMMN4076A, PMMN4072A and PMMN4074A			
EAR RCVR W/COIL CBL&3.5MM PLUG	WADN4190B	742	$43.00

Headsets

Description	Nomenclature	APC	Price
IMPRES TEMPLE TRANSDUCER	PMLN5101A	742	$228.00
FM Certified			
HEAVY DUTY HEADSET PMLN5275B	PMLN5275B	742	$485.00
FM Certified			
CORE L/W HEADSET	RMN5058A	742	$99.00
FM Certified			
RX/TX BOOMLESS TEMPLE TRANSDUCER	RMN5116A	742	$248.00
Temple Transducer Headset will ONLY work with: Microphone Compatibility HMN4101, HMN4103, HMN4104.			

Remote Speaker Microphones - RSM's

Description	Nomenclature	APC	Price
IMPRES RSM DSPLY W JACK, W CHNL	HMN4104A	795	$375.00
IMPRES RSM DSPLY W JACK, NO CHNL	HMN4103B	372	$345.00
IMPRES RSM NO DSPLY W JACK, NO CHNL	HMN4101B	372	$300.00
APX7000 IMPRES RSM, NOISE CANC. EMERGENCY BUTTON 3.5MM JACK IP54	PMMN4062A	795	$107.00
APX IMPRES RSM W/VOL, IP57	PMMN4065A	795	$97.00
IMPRES RSM, 3.5MM AUDIO JACK	PMMN4069A	795	$110.00
IMPRES XE RSM, BLACK	NNTN8203ABLK	372	$335.00
RSM INTERFACE CABLE, NEXUS 5-POLE	PMKN4107A	795	$53.00

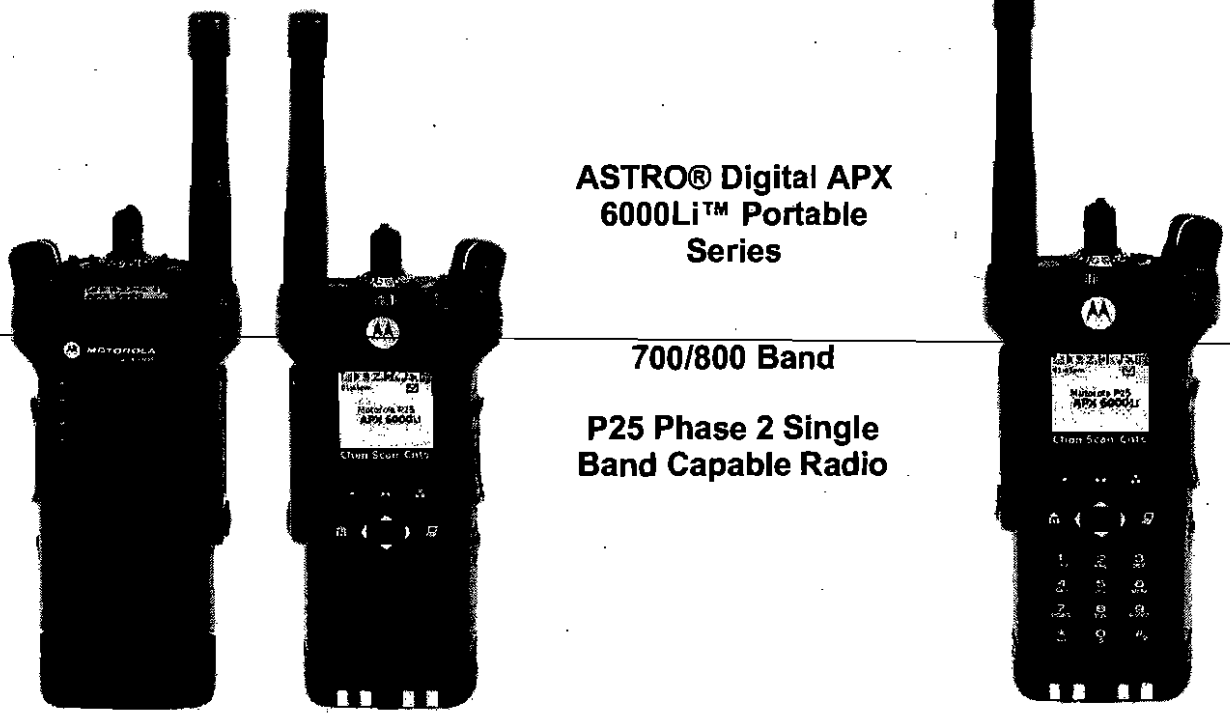
Public Safety Microphones - PSM's

Public Safety Microphones are available with 700/800 MHz portables only.

Surveillance Kits, Wired

Description	Nomenclature	APC	Price
RUBBER EAR TIP, CLEAR	67009254001	795	$9.95
IMPRES 3 WIRE W/ TRANS TUBE-BLK	PMLN6123A	742	$173.00
IMPRES 3 WIRE W/ TRANS TUBE-BGE	PMLN6124A	742	$173.00
1 WIRE SURVEILLANCE KIT-BLK	PMLN6125A	742	$40.00
1 WIRE SURVEILLANCE KIT -BGE	PMLN6126A	742	$40.00
IMPRES 2 WIRE SURVEILLANCE -BLK	PMLN6127A	742	$105.00
IMPRES 2 WIRE SURVEILLANCE-BGE	PMLN6128A	742	$105.00
SMART 2 WIRE W/TRANS TUBE BLK	PMLN6129A	742	$122.00
SMART 2 WIRE W/TRANS TUBE BIEGE	PMLN6130A	742	$122.00
SURVEILLANCE LOW NOISE KIT	RLN5866A	742	$20.00
REPLACEMENT CLEAR ACOUSTIC TUBE	0105954U29	742	$7.90
3-WIRE SURVEILLANCE KIT WITH MICROPHONE & PTT COMBINED, BEIGE Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8613 adapter	ZMN6031	742	$177.00
RX ONLY EARPIECE W/TRANSLUCENT TUBE	RLN6424B	742	$60.00
SURVEILLANCE HIGH NOISE KIT	RLN5887A	742	$32.00
SPKR MIC W XLOAD EARPIECE Exceeds OSHA limits. REQUIRES NTN5664 Audio Adapter. FACTORY MUTUAL APPROVED.	ZMN6039	742	$190.00
2-WIRE SURVEILLANCE KIT WITH MICROPHONE AND PTT COMBINED - EXTRA LOUD Exceeds OSHA limits. Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8613 adapter	ZMN6036	476	$149.00
2-WIRE SURVEILLANCE KIT WITH MICROPHONE AND PTT COMBINED Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8613 adapter	ZMN6032	476	$143.00

Data Compiled 16-May-2013 using DUP and all prices in USD



ASTRO® Digital APX 6000Li™ Portable Series

700/800 Band

P25 Phase 2 Single Band Capable Radio

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749), HARDWARE KEY (QA01648), OR WACN KEY SUPPLEMENTAL DATA (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY or QA02018- WACN KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. ******

Ship Card

Features

All ASTRO Digital APX 6000Li models include the following features:

- Dual Microphone
- 0.5 Watt Rated Audio
- Integrated GPS Hardware Capable*
- Integrated Bluetooth Hardware Capable*
- Detachable Belt Clip for Top Display Model
- Slim LIION 2150 mAH Battery (PMNN4403A)
- 3 Programmable Side Buttons
- Orange Programmable Button
- 16 Position Mode Rotary Select Switch
- Angled On/Off Volume Knob
- Low Battery Alert Tone
- Noise Cancellation Software

- Antenna (Dependent on Frequency Band and Type)
- Intelligent Lighting
- ADP Privacy - ships standard with Single Key
- 1 Top Mounted Programmable 3 Position Toggle Switch
- Top Display: 1 line of text, 1 line of icons, 0 menu lines
- IP67 ships standard with every radio model

ASTRO Digital APX 6000 Limited Keypad and Full Kepad with Dual Display Model also includes:

- Universal Carry Holder
- Unified Call List
- Front Color Display: 4 lines of text, 2 lines of icon
- Radio Profiles
- Full Keypad: 4 x 3 alpha-numeric 3 programmable button, 4 way navigation, home and data buttons

*** Must purchase Software to ENABLE**

*** All APX6000 Portable Radios ship standard with SW and HW ADP Privacy**

All ASTRO Digital APX 6000Li Portables are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the current RF capabilities of the radio)

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749), HARDWARE KEY (QA01648), OR WACN KEY SUPPLEMENTAL DATA (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY or QA02018- WACN KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. Also, an Advanced System Keys (ASK- DVN4046) will be required to be ordered. ******

http://ecat.comm.mot.com/ecat/pricebooks/dup/ASK.htm

General Information

The ASTRO Digital APX 6000Li Portable Line offers **THREE** different radio hardware models:

Hardware Model	Modes	Alphanumeric Display Lines/Characters	Keypad	Navigation Pad
ASTRO APX 6000 Top Display	96	8 (top)	-	No
ASTRO APX 6000 Limited Keypad	870	14 (front) & 8 (top)	-	Yes
ASTRO APX 6000 Full Keypad	870	14 (front) & 8 (top)	4 x 3	Yes

Operating Modes

ASTRO Digital APX 6000Li Radio Models are capable of operating in four different voice communication modes:

• Normal Analog (clear voice)	• 3.6KB ASTRO Digital (both clear and coded voice)	• 9.6 KB ASTRO 25 Digital (both Clear and Coded voice)	• 9.6KB 12.5kHz 2 slot digital TDMA (both clear and coded voice). • Will be capable of APCO25 Phase 2 functionality in future software releases.

TDMA

FDMA (Frequency Division Multiple Access) is a proven technology that is widely used today in radio systems and is part of APCO 25 Project 25 Phase 1 standard. FDMA carries one call per channel. TDMA (Time Division Multiple Access) will be part of P25 Phase 2 standard and provides double the voice capacity as 2 calls can share 1 channel. Customers can add more users to their systems without the need of additional frequencies or infrastructure. The APX radios support both P25 Phase 1 and TDMA technologies seamlessly. Using Motorola's unique Dynamic Dual Mode (DDM) capability, the radios dynamically switch between FDMA and TDMA without the user having to change channels. This provides interoperability on demand with existing and future networks.

FLASHport AFTERMARKET UPGRADES

The ASTRO Digital APX 6000Li Portable Series Radios are part of the FLASHport Program. This means that ASTRO Digital APX 6000Li hardware models can be loaded with different software packages that provide the features and functionalities that our customers require.

System Enhancement Options can be loaded at the time of radio purchase or at a later date through the use of software field upgrades (a USB cable is required for all software upgrades.) The ASTRO Digital APX 6000Li portable can be upgraded electronically in the field with new features in the current system or to new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

Ordering Requirements

Ordering procedure is as follows...

Steps	Required Options	Comments
1	**APX 6000Li 700/800 Main Model**	APX Digital Portable Radio- a. H98UCD9PW5AN b. H98UCF9PW6AN c. H98UCH9PW7AN
2	**APX 6000Li 36 or 96 Digital Trunking Package Option**	a. QA02756AA

1. Order the APX 6000Li Portable Series as the main line item.

- Default battery is Lilon 2150mAh (-20°c)
- Default belt clip for top display models and carry holder for limited keypad and full keypad models
- Default Antenna is the single appropriate antenna for your RF configuration.
- Note - APX Radio ships with 12 month standard warranty.

2. Choose a Software Package Option

- **QA02756AA:** APX 6000 3600 or 9600 Digital Trunking Package Option- Includes either P25 Trunking OR SmartZone/SmartNet, and OmniLink. Only 9600 OR 3600 Trunking can be configured. Does NOT include 9600/3600 interoperability.
- **Q443BP:** APX6000 Analog 3600 Trunking Package Option- Includes Analog SmartZone/SmartNet, and OmniLink.

- **Q811BP:** APX6000 Digital Conventional Package Option- Includes Digital Conventional and P25 Conventional operation.
- **QA02829AA:** APX6000 Analog Conventional Package Option- Includes Analog Conventional operation.

*APX 6000Li Limitations

- No Infrastructure OTAR Capability
- No Delta T *(IP67 Ships Standard)*
- No Color Housing (Yellow/Green)
- No Multiple Encryption Algorithms not including ADP; such as AES and DES
- No 3600/9600 Interoperability Option
- No Enhanced Level 2 Option Available

Common Software Features Supported By

	H38 "SmartZone"			
	"Analog Operation"(Q241/H38)	"ASTRO Digital"(Q806/H38)	"ASTRO Digital"(H38/Q806/Q361)	"TDMA"(QA00580AA)
	Non-Project 25 (3600 Baud)	Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	TDMA OPERATION
RADIO WIDE FEATURES				
Maximum Modes				
ASTRO Digital APX 6000 Top Display	96	96	96	96
ASTRO Digital APX 6000 Limited Keypad	870	870	870	870
ASTRO Digital APX 6000 Full Keypad	870	870	870	870
Analog and Digital Operation	Yes	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable	No	Yes (Digital Only)	Yes (Digital Only)	Yes (Digital Only)
One Touch Operation	Yes	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes	Yes
Surveillance Mode	Yes	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes	Yes
Radio Lock	Yes	Yes	Yes	Yes
Smart Battery	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes

Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified above.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
DTMF Signaling	Future	Future	Future	Future
Quick-Call Signaling	Future	Future	Future	Future
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Conventional Interoperable Features when used in the ASTRO Digital CAI Mode (Q806).				
Unaddressed Voice Call (Dispatch Call)	Yes	Yes	Yes	Yes
Talk Group Call	Yes	Yes	Yes	Yes
Group Call Alert™	Yes	Yes	Yes	Yes
Talk Group Identification (TGID)	Yes	Yes	Yes	Yes
Selective Call (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
PTT ID (Individual Identification)	MDC-1200 Only	Yes	Yes	Yes
Call Alert Encode/Decode	MDC-1200 Only	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	MDC-1200 Only	Yes	Yes	Yes
Telephone Interconnect	Yes	Yes	Yes	Yes
Manual Phone Number Entry	Dual Display Only	Dual Display Only	Dual Display Only	Dual Display Only
Selective Radio Inhibit	MDC-1200 Only	Yes	Yes	Yes
Radio Check	MDC-1200 Only	Yes	Yes	Yes

Status/Message	MDC-1200 Only	Yes	Yes	Yes
Trunking Type II Only Features				
Maximum Number of Trunked Systems-20	Yes	Yes	Yes	Yes
Talkgroup Calls	Yes	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes	Yes
Analog/Digital Dual Mode Scan	No	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only	Status Only
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes	Yes
Remote Monitor/Radio Trace	Yes	Yes	Yes	Yes
Reprogram Request	Yes	Yes	Yes	Yes

H38 "SmartZone"				
	"Analog Operation" (Q241)	"ASTRO Digital" (Q806)	"ASTRO Digital" (H37/Q806/Q361)	"TDMA" (QA00580AA)
		Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	Project 25 (TDMA Operation)
Trunking Type II Only Features				
Voice on Control	-	-	-	-
SmartZone Automatic Site Registration	Yes	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes	Yes
SmartZone Preferred Site	Yes	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the APX 6000 portable series.

Separation of frequencies can be as wide as the allowable band per radio model with no degradation of any performance specifications. If an incorrect antenna is used, degraded performance may be experienced.

ZONED OPERATION

This option converts MODE-ONLY ASTRO Digital APX 6000 portables to Zone Operation radios.

For Top Display radios, a maximum of 16 channels (conventional RX and TX pairs or trunking talkgroups) are accessible in a zone. There is a maximum of six accessible zones (96 channels) when zone selection operation is programmed on the 3 position toggle switch and the Zone Bank feature is programmed on a button. The Zone Bank feature allows the 3 position toggle switch to access zones 1-3 or 4-6.

For the Top Display radio there is a maximum of 6 accessible zones, and 16 accessible channels per zone with the overall maximum of 96 channels. For the Dual Display Radios with Limited keypad or Full Keypad, there is a maximum of 50 zones, 625 channels per zone with the overall maximum of 870 channels. These radios provide "ZONE" and "CHAN" menus that allows access to zones and channels not accessible via the switches.

*Note: Top Display Radio codeplugs can be programmed with the same zone/channel configuration as the Dual Display Radios even though not all of the zones and channels are accessible. This is useful for having a common zone/channel template that can be shared between the different radio models.

PROJECT 25 ENCRYPTION

The mode of operation is programmed on a channel-by-channel basis. With the coded/clear switch set to the clear mode, the ASTRO Digital APX6000 radio is capable of transmitting clear analog voice or clear (unencrypted) ASTRO Digital voice, depending on the channel programming. With the coded/clear switch set to the coded mode, the ASTRO Digital APX 6000 radio will transmit ASTRO Digital encryption depending on the channel programming. ASTRO Digital encryption provides secure communications. ASTRO Digital Encryption (operation in encrypted mode while also operation in 3.6KB or 9.6KB and TDMA ASTRO mode) is capable of XL type encryptions; ASTRO Digital Encryptions does not operate with non-XL encryptions.

An encryption option is not required for either clear analog operation or clear ASTRO Digital operation. Encryption can be ordered with the ASTRO Digital APX 6000 radio either as a factory installed option or separate from the radio for later field installation. ASTRO Digital APX 6000 radio functions include selected ASTRO digital signaling and digital speech coding.

When ordering any of the Encryption Algorithms:

- The DES-OFB and AES encryption algorithms offered are compliant with digital Project 25 standards and does not support analog encryption operation.
- **Requires** the ASTRO Digital CAI (Q806) to operate the DES-OFB and AES encryption.

When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

- Encryption Algorithms can be ordered later via Flash Port.

FIPS 140-2 Compliance

Encryption Modules equipped with AES are FIPS 140-2 compliant. Details regarding the certification, and copies of the relevant certificates, can be obtained on the NIST website at: http://csrc.nist.gov/groups/STM/cmvp/validation.html.

Further information regarding FIPS 140-2 certification may be found using the following link - FIPS 140-2 Crypto Module Validation Program (CMVP) http://csrc.nist.gov/groups/STM/cmvp/index.html

FM INFORMATION

APX 6000 Portable Radio when properly equipped with options Q393 OR QA00581 OR QA00582 OR QA02818 are Factory Mutual (FM/CSA) Approved as intrinsically safe for use in Div 1, Class I , Groups C,D, Class II groups E, F, G, Class III Div 2, Class I A, B,C,D.

ASTRO Text Messaging Service

ASTRO Text Messaging Service will be available on APX 6000 Dual Display Portable radios. Text Messaging Service (TMS) allows subscriber users to send and receive text messages to other subscribers or dispatch operators. Users can select messages and addresses from a predefined list or enter freeform text messages and addresses via the keypad. Text Messaging Service is available on ASTRO P25 Conventional and Trunked IV&D Systems and Subscribers.

Text Message is NOT supported on APX 6000 (Model I) Top Display Portable radio.

Ordering ASTRO Text Messaging for APX 6000 Portable Requires:

- APX 6000 Dual Display
- Q811BP Software Package
- Packet Data Interface (Q947)

OR

- APX 6000 Dual Display
- QA02756AA Software Package
- Packet Data Interface (Q947)

NOTE: *There is no specific option to order for the Text Messaging Service on the subscribers as the functionality is included in the Packet Data option.*

Outdoor Personnel Location Global Positioning Satellite (GPS) Feature

The personnel outdoor location tracking GPS feature enables a dispatcher the ability to locate on-foot patrols and out of the vehicle officers who are involved in life threatening situations. The radio user's GPS position information is sent over the ASTRO 25 Integrated Voice & Data (IV&D) network and is delivered to the dispatch operator using a third party mapping display application at the dispatch center *(Mapping Application is not yet available through Motorola at this time, however an Application Developers Tool Kit is available for 3rd party vendors to use to modify existing applications. See link below for more details.)* On the Dual Display model only it is possible to the user to determine their own location (latitude/longitude) through the use of the location menu.

During normal operation the radio battery capacity will be reduced by 10% to 16%.

In order to obtain an initial GPS fix position, the radio must be located in an open sky, outdoor environment with no barriers that could affect the signal around you or above you. During this initial fix, the radio should NOT be worn on the body as this may affect the process of acquiring signal and/or add additional time to first fix.

NOTE LIMITATIONS OF USE:

GPS works best in an open sky (clear view of the sky with no obstructions) environment. Due to the limitations of the technology, there are certain situations which prevent GPS coverage. These situations include but are not limited to:

- Underground locations (tunnels, subways, etc.)
- Inside of buildings, elevators, parking garages, trains, other covered vehicles, etc.
- Under metal or concrete roof structures
- Urban canyons (between tall buildings or under dense tree coverage)

***GPS Performance may be degraded when the radio is worn against the body and/or against the body within a vehicle.

Due to the limitations mentioned above, GPS should only be utilized as a method to assist the user with location information but not as a means for mission critical communication. Therefore, in any emergency situation, the location should always be verbally reported to the dispatcher.

For further information regarding System Requirements, go to the location solutions price pages at: http://ecat.comm.mot.com/ecat/pricebooks/dup/ALOCATION.htm

Ordering GPS for APX 6000 Portable Requires:

- Enable Internal GPS Operation (QA00782)
- Packet Data Interface (Q947)

700/800 MHz SELF-QUIETING SPURS				
700/800 Models (1.5, 2.5, 3.5)	Frequencies	Model 1.5	Model 2.5	Model 3.5
700 MHz	767.95	X	X	X
800 MHz	855.95		X	X
	863.95	X	X	X

CPS INFORMATION

****Please note that a NEW version of CPS (RVN5224) is required for initial customer orders for this product. This new version of CPS is required for the APX radio shipments. ****

FCC Information

Band/Model	Power Output	Transmitter Certification	Emissions	Applicable Rules
700/800 (764-870 MHz)	700 - 1 to 2.5W 800 - 1 to 3W	AZ489FT5863	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 20K0F1E	90

Ordering Guide

APX Portable Comparison Chart

APX Family Brochure

Spec Sheet

RSA Comprehensive

RSA

Portable Accessories Catalog

PSM User Guide

Radio Applications \ Advanced System Key

Section A: Required Main Model and Options

For standard Radio Operation Steps 1 - 5

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

Main Model *(Must Select One)*

Description	Nomenclature	APC	Price
APX6000 7/800 MHZ MODEL 1.5 PORTABLE	H98UCD9PW5 N	481	$1,900.00
Description	**Nomenclature**	**APC**	**Price**
APX6000 700/800 MODEL 2.5 PORTABLE	H98UCF9PW6 N	481	$2,200.00
Description	**Nomenclature**	**APC**	**Price**
APX6000 700/800 MODEL 3.5 PORTABLE	H98UCH9PW7 N	481	$2,600.00

Software Packages *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: 9600 TRUNKING OR 3600 DIGITAL TRUNKING	QA02756	755	$1,570.00
ENH: LI ANALOG 3600 TRUNKING	Q443	755	$1,100.00
ENH: LI DIGITAL CONVENTIONAL	Q811	755	$650.00
ENH: LI ANALOG CONVENTIONAL	QA02829	755	$400.00

System Key *(Must Select One)*

ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648	655	$5.00
A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.			
ADD: ADVANCED SYSTEM KEY - SOFTWARE KEY	QA01749	655	$0.00
A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking.			
ADD: ADVANCED WACN KEY SUPP DATA	QA02018	655	$5.00
A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.			

System Enhancement Options *(Optional)*

ADD: PROGRAMMING OVER P25 (OTAP)	G996	481	$100.00
Compatible with P25 Trunking and Conventional Operation. POP25 requires AES encryption for ASTRO Conventional operation. Must have IV&D (Q947) enabled. To do in field POP25 programming must use Advanced System Key (DVN4046A)			
ENH: RADIO TRACE/ REMOTE MONITOR	H43	481	$75.00
Requires Q806 and either H37, H38, or H35.			
ENH: ONE TOUCH/STATUS MSG	H46	481	$75.00

Only compatible with Model 2.5 and 3.5 Radios			
ADD: MULTICAST VOTING SCAN	Q387	481	$200.00
ADD: RADIO PACKET DATA	Q947	481	$200.00
This option is only capable of being used on P25 Digital Conventional and 9600 Trunking Systems. This option is required for IV & D operation.			
ADD:LINK LAYER RADIO AUTHENTICATION	QA01767	481	$100.00
Requires P25 Trunking (Q361)			
ADD: DVRS PSU ACTIVATION	QA00631	655	$100.00
Enables DVRS Enhanced PSU functionality on APX Radios. Requires XTL MSU and Digital Operation.			
ADD: TDMA OPERATION	QA00580	481	$400.00
For APX6000 and APX6000XE, QA00580 requires Q806, H36, Q361. If ordering an APX6000Li, QA00580 requires QA02758. A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to ba purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.			
ADD: ENABLE BLUETOOTH SOFTWARE	QA00583	481	$150.00
ENH: ENABLE INTERNAL ACTIVATION AND GPS BASIC FUNCTIONALITY	QA00782	481	$100.00
Must have IV&D (Q947) enablad.			
ENH: ENHANCED ZONE BANK	QA01768	481	$75.00
This option will increase the channel/talkgroup capacity on a Model 1 from 96 to 870. Zone Up/Zone Down, Zone Bank Up/Zone Bank Down will be unlocked with this option.			
ADD: APX Personnel Accountability	Q445	481	$150.00
itemn=QA01833,5#]			
ADD: ACCELEROMETER/ MAN DOWN	QA01843	481	$150.00

Algorithm Option ***(Can only pick one Encryption Algo)***

Description	Nomenclature	APC	Price
ENH: DVP-XL ENCRYPTION	H797	481	$487.00
Compatible with Digital and Analog (25kHZ Only) operations. ADP Privacy ships standard with Single Key. Multikey is required for mullipie algorithms, such as ADP/AES or ADP/DES .			
ENH: MULTIKEY	H869	481	$330.00
ENH: DES,DES-XL,DES-OFB ENCRYPTION	Q625	481	$599.00
Compatible with Analog 25kHZ/DES-OFB Digital 12.5kHZ Only. ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES			
ENH: AES ENCRYPTION	Q629	481	$475.00
ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES			
ADD: TACTICAL REKEY WITH MULTIKEY	H04	481	$350.00
Must order IV&D (Q947). Incompatible with MDC/ASTRO P25 OTAR with Multikey			
ENH: AES/DES,DES-XL,DES-OFB	Q15	481	$799.00
ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES. Incompatible with Q625 and Q629			

Antenna

Description	Nomenclature	APC	Price
ALT: 1/4- WAVE 7/800 GPS STUBBY (NAR6595A	H122	481	$24.00
Length: 3.93"			
Description	**Nomenclature**	**APC**	**Price**
ADD: GPS STUBBY ANTENNA (NAG4000)	QA00785	481	$18.00
Deletes Standard Antenna and ADDS GPS ONLY antenna.			

Battery

Description	Nomenclature	APC	Price
DEL: DELETE STANDARD BATTERY	H207	481	($47.00)
Deletes standard battery PMNN4403 for APX6000 or NNTN8092 for APX6000XE			

ALT: NIMH IMPRES 2100MAH IP67 BATTERY (NNTN7037) The option will delete the standard option and replace with NIMH IMPRES 2100MAH IP67 BATTERY(NNTN7037)	H335	481	$78.00
ALT: NIMH IMPRES 2000MAH FM/CSA IP67 (NNTN7036) The option will delete the standard battery and replace with NIMH IMPRES 2000MAH FM IP67 BATT (NNTN7036)	Q393	481	$95.00
ALT: NIMH IMPRES 2000 MAH FM/CSA DELTA T (NNTN7035) The option will delete the standard battery and replace with LIION 2000 MAH DELTA-T (NNTN7035). This battery is compatible with H499 and meets FM certification.	QA00581	481	$133.00
ALT: LIION IMPRES 4100 MAH FM/CSA IP67 (NNTN7033A) This option will delete the standard battery and replace it with LITHIUM ION 4000MAH IMPRES (NNTN7033). This battery is competible with H499 and meets FM certification.	QA00582	481	$165.00
ALT: LIION 4200MAH IMPRES DELTA-T This option will delete the standard battery and replace it with LIION 4200MAH IMPRES (NNTN7034). This battery is compatible with H499.	QA00781	481	$115.00
ALT: LIION IMPRES IP67 2900MAH (NNTN7038) This option will delete the standard battery and replace it with LIION IMPRES 2900MAH IP67 (NNTN7038).	QA01837	481	$100.00
ALT:LIION IMPRES FM/CSA 2300M (NNTN8092) This option will delete the standard battery and replace it with LIION IMPRES 2300M (NNTN8092). This option is compatible with H499 and meets FM certification.	QA02818	481	$50.00

Belt Clip (s)

Model 1.5 comes standard with 2.5" belt clip.

Description	Nomenclature	APC	Price
DEL: DELETE BELT CLIP/ BASIC CARRY HOLDER	H301	481	($10.00)
Description	**Nomenclature**	**APC**	**Price**
ALT: BASIC CARRY HOLDER (PMLN5709) This carry holder equipped with a 2.5" belt clip ships standard with the Dual Display model. It is an alternative to the 2.5" Belt Clip that ships standard with the Top Display model.	QA00779	481	$29.00
Description	**Nomenclature**	**APC**	**Price**
ADD: BELT CLIP 3.0" (HLN6875) Replaces the standard 2.5" belt clip that ships with the Model 1.5 radio with a 3". Model 1.5 radios in 700/800 and VHF will ship standard with the 2.5" belt clip, and UHF radios will ship with the 3" belt clip.	QA01222	481	$12.00

Cable (s)

Description	Nomenclature	APC	Price
ADD: DATA CABLE PMKN4013A-GCAI cable at radio interface and USB connection at other end for computer programming. Please note that the PMKN4012A is NOT compatible with the APX 4000	Q157	655	$75.00

Programming

Description	Nomenclature	APC	Price
ENH: FRONT PANEL PROGRAMMING Compatible with model 3.5 radios only	Q53	430	$150.00
ADD: FRONT PANEL PROGRAM (FED GOVT)	Q52	470	$150.00

Service Options

Description	Nomenclature	APC	Price
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE Provides 2 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the	H885BK	185	$84.00

Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	H886AQ	185	$125.00
Provides 3 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ADD: 3 YR RSA COMPREHENSIVE	HA00022AB	185	$228.00
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	Q884	185	$44.00
Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH:4 YEAR REPAIR SERVICE ADVANTAGE	Q887	185	$162.00
Provides 4 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			

Manual

Description	Nomenclature	APC	Price
DEL: USER GUIDE CD	QA01274	481	$0.00
This deletes the user guide CD that ships standard with the radio.			
ADD: DATA LINK MANAGER APP CD-PORTABLES	QA00205	655	$0.00
Option provides the NVN5424 Data CD. Please order this option if you would like the Data CD, and are unable to obtain it through other sources such as MOL.			

Packaging

Description	Nomenclature	APC	Price
ADD: SINGLE UNIT PACKING	H842	481	$0.00

Section D: Aftermarket Accessories

Adapters

Description	Nomenclature	APC	Price
APX SURVEILLANCE KEYLOAD A	NNTN7869A	742	$65.00
APX FPP HW KEY (DONGLE)	NNTN7526	655	$37.00

Radio Antennas

Description	Nomenclature	APC	Price
ANT 1/4 WAVE 7/800 STUBBY	NAR6595A	655	$29.00
APX 7000 GPS STUBBY ANTENNA	NAG4000	555	$18.00
This antenne is needed when a user has a Public Safety Microphone attached to the radio and still requires GPS capability. Atteches to the APX radio directly and is only used when the redio is oparating in a single band configuration of UHF or 700/800 MHz.			

Batteries

Description	Nomenclature	APC	Price
APX 7000 IMPRES NIMH 2100MAH SUBMERSIBLE (IP67) BATTERY Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	NNTN7037	798	$125.00
APX 7000 IMPRES NIMH 2000MAH SUBMERSIBLE (IP67) FM BATTERY Dimensions (HxWxD) 5.34" x 2.34" x 1.57"	NNTN7036	798	$142.00
BATT IMP STD IP67 LiION 2900M 3100T BLK Dimensions (HxWxD) 3.07" x 2.34" x 1.65"	NNTN7038	798	$140.00
ASSEMBLY,BATTERY,BATT IMP FM RUGGEDIZED LIION 4100M 4300T BLK Dimensions (HxWxD) 5.12" x 2.34" x 1.65"	NNTN7033A	453	$175.00
ASSEMBLY,BATTERY,BATT IMP STD RUGGEDIZED LIION 4200M 4400T BLK Dimensions (HxWxD) 5.13" x 2.34" x 1.65"	NNTN7034A	798	$160.00
APX 7000 IMPRES NIMH 2000MAH RUGGEDIZED PLUS FM BATTERY Motorola now makes batteries to an even more stringent military standard for customers who require a higher level of submersibility protection - MIL-STD-810E, Method 512.3 Immersion, which are referred to as Ruggedized PLUS. Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	NNTN7035	798	$147.00
LIION IMPRES 2150MAH IP67 BATT Dimensions (HxWxD) 3.39" x 2.34" x 1.48"	PMNN4403	453	$125.00
APX 7000 IMPRES NIMH 2100MAH RUGGEDIZED PLUS BATTERY Motorola now makes batteries to an even more stringent military standard for customers who require a higher level of submersibility protection - MIL-STD-810E, Method 512.3 Immersion, which are referred to as Ruggedized PLUS. Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	NNTN7573	798	$130.00
BATT IMP FM R LI ION 2300M 2350T ***This Impress 2300MAH Lithium Ion battery is both FM certified and Ruggedized PLUS (submersible). The battery is offered in a small form factor. It is the standard battery offered with the XE(eXtrEme) radio products.*** Dimensions (HxWxD) 3.07" x 2.34" x 1.65"	NNTN8092	453	$140.00

Battery Fleet Management

Description	Nomenclature	APC	Price
FLEET MANAGEMENT CHRGR INTERFACE UNIT Multi-Unit Charger Interface Unit, attaches to an APX or XTS IMPRES multi-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to IMPRES Battery Fleet Management.	NNTN7677A	785	$80.00
FLEET MANAGEMENT RELEASE 1.2	NNTN7676C	785	$10.00
CHARGR INTRFCE UNT GEN1 IMPRES SUC Single-Unit Charger Interface Unit , attaches to an APX IMPRES single-unit charger to enable the date transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to the IMPRES Battery Fleet Management.	NNTN8045A	785	$35.00

IMPRES BATTERY DATA READER Provides IMPRES battery usars ability to access key usage data via PC. Compatible w/all IMPRES batteries (HT/PRO,TRBO & APX adapter included)	NNTN7392	785	$250.00

Bluetooth Mission Critical Wireless

Description	Nomenclature	APC	Price
WIRELESS 2.0 COMMPORT IC MODULE	NTN2571B	742	$139.00
EARPIECE W/12" CABLE FM Certified; MCW BT; Requires QA00583 to be ordered in the APX radio	NTN2572A	742	$151.00
ASSEMBLY,ACCESSORY,WIRELESS ACCY KIT, NFP, 9.5" CABLE FM Certified MCW BT Requires QA00583 to be ordered in the APX radio	NTN2573B	742	$295.00
EARPIECE W/9.5" CABLE	NTN2575A	742	$151.00
1-WIRE EARBUD,29CM CORD,BLACK	NNTN8294A	742	$40.00
1-WIRE EARBUD,116CM CORD,BLACK	NNTN8295A	742	$40.00

Bluetooth, Mission Critical Wireless Replacement Parts

Description	Nomenclature	APC	Price
ACCY,SMPS,MICRO USB,FIXED,CLP,US	PMPN4009A	903	$21.00
COMMPORT EAR TUBES (PACK OF 10)	RLN5037	115	$26.00
EARTIPS, REPLACEMENT	NNTN8299A	742	$3.15

Belt Clip(s)

Description	Nomenclature	APC	Price
3" PLASTIC BELT CLIP ATTACHMENT	HLN6875A	721	$12.00
SWIVEL D CLIP, HIGH ACTIVITY	NTN9212	476	$30.00

Belt Loops

Description	Nomenclature	APC	Price
APX 7000 2.5" REPLACEMENT SWIVEL BELT LOOP	PMLN5407	271	$12.00
APX 7000 2.75" REPLACEMENT SWIVEL BELT LOOP	PMLN5408	795	$12.00
APX 7000 3" REPLACEMENT SWIVEL BELT LOOP	PMLN5409	271	$12.00

Carrying Case(s)

Note: The APX 6000Li does not have leather carry cases available for NNTN7036 or NNTN7037

Description	Nomenclature	APC	Price
APX6000 CC 2.75 SWLBL 2900&2150MAH	PMLN5657A	795	$65.00
APX6000 CC 3 FIX BL 2900&2150MAH	PMLN5658A	454	$67.00
APX6000 UNIVERSAL CARRY HOLDER	PMLN5709A	271	$29.00
APX6000 CC 2.75 SWL BL 4200MAH	PMLN5659A	795	$67.00
APX6000 CC 3 FIX BL 4200MAH	PMLN5660A	795	$69.00

Charger

Description	Nomenclature	APC	Price
IMPRES CHG MU MACKINAW US/NA/CA/LA	NNTN7065B	785	$788.00
IMPRES CG MUD MACKINAW US/NA/CA/LA	NNTN7073B	785	$1,350.00
APX DUAL UNIT CHARGER WITHOUT DISPLAY This next generation IMPRES charger provides advanced features, including the ability to turn on/off reconditioning, reduced reconditioning time and improved energy efficiency.	NNTN7586	795	$295.00
CHR IMP DISP DUC EXT US/NA/CA/LA	NNTN7593A	785	$375.00
APX CHARGER INSERT ADAPTER FOR XTS MULTI-UNIT CHARGER Six inserts will ship in one package. Requires charger containing Software Version 3.4 or greater.	NNTN7686A	795	$207.00
APX CHARGER INSERT ADAPTER FOR XTS SINGLE-UNIT CHARGER Only 1 SUC insert will ship. Requires charger containing Software Version 3.4 or greater.	NNTN7687A	795	$45.00
APX TRAVEL CHARGER	RLN6434A	785	$101.00
APX 7000 IMPRES CG SU APX7000 US/NA/CA/LA	WPLN7080	795	$125.00
IMPRES VEHICULAR CHARGER (FULL KIT) APX Portable Vehiculer Charger (NNTN7624B supports APX XE subscriber line es well)	NNTN7624B	785	$390.00
IMPRES CHARGER DISPLAY MODULE	RLN5382B	785	$95.00

CPS

Earpieces

Description	Nomenclature	APC	Price
RECEIVE-ONLY FOAM EARBUD WITH 3.5MM PLUG - INTRINSICALLY SAFE (FM) When used with MTP3000 models, to be used with remote speaker microphones PMMN4078A, PMMN4072A and PMMN4074A	AARLN4885	742	$25.00
EAR RCVR W/COIL CBL&3.5MM PLUG	WADN4190B	742	$43.00

Headsets

Description	Nomenclature	APC	Price
IMPRES TEMPLE TRANSDUCER FM Certified	PMLN5101A	742	$228.00
HEAVY DUTY HEADSET PMLN5275B FM Certified	PMLN5275B	742	$485.00
CORE L/W HEADSET FM Certified	RMN5058A	742	$99.00
RX/TX BOOMLESS TEMPLE TRANSDUCER Temple Transducer Headset will ONLY work with: Microphone Compatibility HMN4101, HMN4103, HMN4104.	RMN5116A	742	$248.00

Remote Speaker Microphones - RSM's

Description	Nomenclature	APC	Price
IMPRES RSM DSPLY W JACK, W CHNL	HMN4104A	795	$375.00
IMPRES RSM DSPLY W JACK, NO CHNL	HMN4103B	372	$345.00
IMPRES RSM NO DSPLY W JACK, NO CHNL	HMN4101B	372	$300.00

APX7000 IMPRES RSM, NOISE CANC. EMERGENCY BUTTON 3.5MM JACK IP54	PMMN4062A	795	$107.00
APX IMPRES RSM W/VOL, IP57	PMMN4065A	795	$97.00
IMPRES RSM, 3.5MM AUDIO JACK	PMMN4069A	795	$110.00
IMPRES XE RSM, BLACK	NNTN8203ABLK	372	$335.00
RSM INTERFACE CABLE, NEXUS 5-POLE	PMKN4107A	795	$53.00

Public Safety Microphones - PSM's

Public Safety Microphones are available with 700/800 MHz portables only.

For optimum RF reception, it is recommended to have the correct type of PSM antenna connected to the PSM. The radio antenna must remain on the radio antenna port for proper and optimum operation. It is recommended to have both PSM antenna and radio antenna connected.

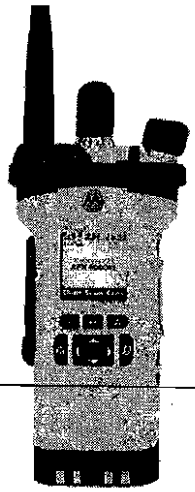
Description	Nomenclature	APC	Price
APX 7000 IMPRES PUBLIC SAFETY MICROPHONE IP55 W/JACK - 18 INCH	PMMN4059	795	$164.00
The antenna needs to be purchesed seperately. The only antenna currently quelified to work with UHFR1 PSM is PMAE4065A.			
For optimum RF reception, it is recommended to have the correct type of PSM antenna connected to the PSM. The radio antenna must remain on the radio antenna port for proper and optimum operation. It is recommended to have both PSM antenna and radio antenna connected			
APX 7000 IMPRES PUBLIC SAFETY MICROPHONE IP55 W/JACK - 30 INCH	PMMN4061	795	$164.00
Tha antenna needs to be purchased separately. The only antenna currently qualified to work with UHFR1 PSM is PMAE4065A.			
For optimum RF reception, it is recommended to have the correct type of PSM antenna connected to the PSM. The radio antenna must remain on the radio antenna port for proper and optimum operation. It is recommended to have both PSM antenna and radio antenna connected.			

Surveillance Kits, Wired

Description	Nomenclature	APC	Price
RUBBER EAR TIP, CLEAR	67009254001	795	$9.95
IMPRES 3 WIRE W/ TRANS TUBE-BLK	PMLN6123A	742	$173.00
IMPRES 3 WIRE W/ TRANS TUBE-BGE	PMLN6124A	742	$173.00
1 WIRE SURVEILLANCE KIT-BLK	PMLN6125A	742	$40.00
1 WIRE SURVEILLANCE KIT -BGE	PMLN6126A	742	$40.00
IMPRES 2 WIRE SURVEILLANCE -BLK	PMLN6127A	742	$105.00
IMPRES 2 WIRE SURVEILLANCE-BGE	PMLN6128A	742	$105.00
SMART 2 WIRE W/TRANS TUBE BLK	PMLN6129A	742	$122.00
SMART 2 WIRE W/TRANS TUBE BIEGE	PMLN6130A	742	$122.00
SURVEILLANCE LOW NOISE KIT	RLN5886A	742	$20.00
REPLACEMENT CLEAR ACOUSTIC TUBE	0105954U29	742	$7.90
3-WIRE SURVEILLANCE KIT WITH MICROPHONE & PTT COMBINED, BEIGE	ZMN6031	742	$177.00
Requires NTN5664 Audio Adapter. Factory Mutuel - (FM) *PR1500 - requires NTN8613 adapter			
RX ONLY EARPIECE W/TRANSLUCENT TUBE	RLN6424B	742	$80.00
SURVEILLANCE HIGH NOISE KIT	RLN5887A	742	$32.00

SPKR MIC W XLOAD EARPIECE Exceeds OSHA limits. REQUIRES NTN5664 Audio Adapter. FACTORY MUTUAL APPROVED.	ZMN6039	742	$190.00
2-WIRE SURVEILLANCE KIT WITH MICROPHONE AND PTT COMBINED - EXTRA LOUD Exceeds OSHA limits. Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8613 adapter	ZMN6038	476	$149.00
2-WIRE SURVEILLANCE KIT WITH MICROPHONE AND PTT COMBINED Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8613 adapter	ZMN6032	476	$143.00

Data Compiled 16-May-2013 using DUP and all prices in USD



ASTRO® Digital APX 6000XE™ Portable Series

UHF R1 Band

UHF R2 Band

P25 Phase 2 Single Band Capable Radio

Special Note for United States - State & Local Markets only:

In accordance to a FCC mandate, VHF (150-174 MHz) and UHF R1 (421- 450 MHz) products operating on Part 90 frequencies will be restricted to 12.5 kHz or narrower operations on Jan. 1, 2013.

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749), HARDWARE KEY (QA01648), OR WACN KEY SUPPLEMENTAL DATA (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY or QA02018- WACN KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. ******

******NOTE: The APX6000XE ships standard as a RUGGED (Delta T submersion) portable and with FM certification. Changing the standard battery configuration may affect the certification of the radio i.e. if a non-FM battery is chosen, the radio will not receive FM certification****

Ship Card

Features

All ASTRO Digital APX 6000XE models include the following features:

- Dual Microphone
- 0.5 Watt Rated Audio
- Integrated GPS Hardware Capable*
- Integrated Bluetooth Hardware Capable*
- Detachable Belt Clip for Top Display Model
- FM LiIon RUGGED 2300 mAh Battery (NNTN8092)
- Antenna (Dependent on Frequency Band and Type)
- Intelligent Lighting
- 3 Programmable Side Buttons
- Orange Programmable Button
- 16 Position Mode Rotary Select Switch
- Angled On/Off Volume Knob
- Low Battery Alert Tone
- Noise Cancellation Software
- 1 Top Mounted Programmable 3 Position Toggle Switch
- Top Display: 1 line of text, 1 line of icons, 0 menu lines

- ADP Privacy - ships standard with Single Key
- Delta T and FM ship standard with every radio model

ASTRO Digital APX 6000 Limited Keypad and Full Kepad with Dual Display Model also includes:

- Universal Carry Holder
- Unified Call List
- Front Color Display: 4 lines of text, 2 lines of icon
- Radio Profiles
- Full Keypad: 4 x 3 alpha-numeric 3 programmable button, 4 way navigation, home and data buttons

*** Must purchase Software to ENABLE**

*** All APX6000 Portable Radios ship standard with SW and HW ADP Privacy**

All ASTRO Digital APX 6000 Portables are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the current RF capabilities of the radio)

http://ecat.comm.mot.com/ecat/pricebooks/dup/ASK.htm

General Information

The ASTRO Digital APX 6000 Portable Line offers THREE different radio hardware models:

Hardware Model	Modes	Alphanumeric Display Lines/Characters	Keypad	Navigation Pad
ASTRO APX 6000 Top Display	96	8 (top)	-	No
ASTRO APX 6000 Limited Keypad	870	14 (front) & 8 (top)	-	Yes
ASTRO APX 6000 Full Keypad	870	14 (front) & 8 (top)	4 x 3	Yes

Operating Modes

ASTRO Digital APX 6000 Radio Models are capable of operating in four different voice communication modes:

- Normal Analog (clear voice)
- 3.6KB ASTRO Digital (both clear and coded voice)
- 9.6 KB ASTRO 25 Digital (both Clear and Coded voice)
- 9.6KB 12.5kHz 2 slot digital TDMA (both clear and coded voice).
- Will be capable of APCO25 Phase 2 functionality in future software releases.

TDMA

FDMA (Frequency Division Multiple Access) is a proven technology that is widely used today in radio systems and is part of APCO 25 Project 25 Phase 1 standard. FDMA carries one call per channel. TDMA (Time Division Multiple Access) will be part of P25 Phase 2 standard and provides double the voice capacity as 2 calls can share 1 channel. Customers can add more users to their systems without the need of additional frequencies or infrastructure. The APX radios support both P25 Phase 1 and TDMA technologies seamlessly. Using Motorola's unique Dynamic Dual Mode (DDM) capability, the radios dynamically switch between FDMA and TDMA without the user having to change channels. This provides interoperability on demand with existing and future networks.

FLASHport AFTERMARKET UPGRADES

The ASTRO Digital APX 6000 Portable Series Radios are part of the FLASHport Program. This means that ASTRO Digital APX 6000 hardware models can be loaded with different software packages that provide the features and functionalities that our customers require.

System Enhancement Options can be loaded at the time of radio purchase or at a later date through the use of software field upgrades (a USB cable is required for all software upgrades.) The ASTRO Digital APX 6000 portable can be upgraded electronically in the field with new features in the current system or to new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

Ordering Requirements

Ordering procedure is as follows...

Steps	Required Options	Comments
		APX Digital Portable Radio-
		e. H98QDD9PW5AN

1	**APX 6000 UHF Main Model**	b. H98QDF9PW6AN c. H96QDH9PW7AN d. H98SDD9PW5AN e. H98SDF9PW6AN f. H98SDH9PW7AN
2	**APX 6000XE UHF Option**	a. QA02006
3	**Operation Mode**	a. Q241; Analog Operation b. Q806; ASTRO digital CAI operation
4	**System Enhancement Software**	a. H35; Conventional Operation b. H37; Smartnet Operation c. H38; Smartzone Operation d. Q173; Smartzone Omnilink (non-P25) e. Q361; P25 9600 Baud Trunking f. QA00580; TDMA

1. Order the APX 6000 Portable Series as the main line item.

- Each hardware model MUST be ordered with one operation mode.
- Default battery is LiIon 2150mAh (-20°c)
- Default belt clip for top display models and carry holder for limited keypad and full keypad models
- Default Antenna is the single appropriate antenna for your RF configuration.

2. Select any other system enhancement options you desire.

- Note - APX Radio ships with 12 month standard warranty.

Common Software Features Supported By

	H38 "SmartZone"			
	"Analog Operation"(Q241/H38)	"ASTRO Digital"(Q806/H38)	"ASTRO Digital"(H38/Q806/Q361)	"TDMA"(QA00580AA)
	Non-Project 25 (3600 Baud)	Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	TDMA OPERATION
RADIO WIDE FEATURES				
Maximum Modes				
ASTRO Digital APX 6000 Top Display	96	96	96	96
ASTRO Digital APX 6000 Limited Keypad	870	870	870	870
ASTRO Digital APX 6000 Full Keypad	870	870	870	870
Analog and Digital Operation	Yes	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable	No	Yes (Digital Only)	Yes (Digital Only)	Yes (Digital Only)
One Touch Operation	Yes	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes	Yes
Surveillance Mode	Yes	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes	Yes
Radio Lock	Yes	Yes	Yes	Yes
Smart Battery	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified above.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes

DTMF Tone Generation	Yes	Yes	Yes	Yes
DTMF Signaling	Future	Future	Future	Future
Quick-Call Signaling	Future	Future	Future	Future
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Conventional Interoperable Features when used in the ASTRO Digital CAI Mode (Q806).				
Unaddressed Voice Call (Dispatch Call)	Yes	Yes	Yes	Yes
Talk Group Call	Yes	Yes	Yes	Yes
Group Call Alert™	Yes	Yes	Yes	Yes
Talk Group Identification (TGID)	Yes	Yes	Yes	Yes
Selective Call (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
PTT ID (Individual Identification)	MDC-1200 Only	Yes	Yes	Yes
Call Alert Encode/Decode	MDC-1200 Only	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	MDC-1200 Only	Yes	Yes	Yes
Telephone Interconnect	Yes	Yes	Yes	Yes
Manual Phone Number Entry	Dual Display Only	Dual Display Only	Dual Display Only	Dual Display Only
Selective Radio Inhibit	MDC-1200 Only	Yes	Yes	Yes
Radio Check	MDC-1200 Only	Yes	Yes	Yes
Status/Message	MDC-1200 Only	Yes	Yes	Yes
Trunking Type II Only Features				
Maximum Number of Trunked Systems-20	Yes	Yes	Yes	Yes
Talkgroup Calls	Yes	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes	Yes
Analog/Digital Dual Mode Scan	No	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only	Status Only
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes	Yes
Remote Monitor/Radio Trace	Yes	Yes	Yes	Yes
Reprogram Request	Yes	Yes	Yes	Yes

H38 "SmartZone"				
	"Analog Operation" (Q241)	"ASTRO Digital" (Q806)	"ASTRO Digital" (H37/Q806/Q361)	"TDMA" (QA00580AA)
		Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	Project 25 (TDMA Operation)
Trunking Type II Only Features				
Voice on Control	-	-	-	-
SmartZone Automatic Site Registration	Yes	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes	Yes
SmartZone Preferred Site	Yes	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	Yes

CHANNEL SPACING

Thera ere no maximum frequency separation conditions that muet be adhered to on the APX 6000 portable eerias. Seperation of frequencies can be as wide as the allowable band per radio model with no degradation of any performance epecifications. If an incorrect antenna is used, degredad performance may be experienced.

ZONED OPERATION

This option converts MODE-ONLY ASTRO Digital APX 6000 portables to Zone Operation redios.

For Top Display radios, a maximum of 16 channels (conventional RX and TX pairs or trunking talkgroups) are accessible in a zone. There is e meximum of six accessibla zones (96 channels) when zone selection operation is programmed on tha 3 position toggle switch and the Zone Bank feature is programmed on a button. The Zone Benk feature allows tha 3 position toggle switch to access zones 1-3 or 4-6.

For the Top Display radio there is a maximum of 6 accessible zones, and 16 accessible channels per zone with the overall maximum of 96 channels. For the Dual Display Radios with Limited keypad or Full Keypad, there is a maximum of 50 zones, 625 channels per zone with the overall maximum of 870 channels. These radios provide "ZONE" and "CHAN" menus that allows access to zones and channels not accessible via the switches.

*Note: Top Display Radio codeplugs can be programmed with the same zone/channel configuration as the Dual Display Radios even though not all of the zones and channels are accessible. This is useful for having a common zone/channel template that can be shared between the different radio models.

PROJECT 25 ENCRYPTION

The mode of operation is programmed on a channel-by-channel basis. With the coded/clear switch set to the clear mode, the ASTRO Digital APX6000 radio is capable of transmitting clear analog voice or clear (unencrypted) ASTRO Digital voice, depending on the channel programming. With the coded/clear switch set to the coded mode, the ASTRO Digital APX 6000 radio will transmit ASTRO Digital encryption depending on the channel programming. ASTRO Digital encryption provides secure communications. ASTRO Digital Encryption (operation in encrypted mode while also operation in 3.6KB or 9.6KB and TDMA ASTRO mode) is capable of XL type encryptions; ASTRO Digital Encryptions does not operate with non-XL encryptions.

An encryption option is not required for either clear analog operation or clear ASTRO Digital operation. Encryption can be ordered with the ASTRO Digital APX 6000 radio either as a factory installed option or seperate from the radio for later field installation. ASTRO Digital APX 6000 radio functions include selected ASTRO digital signaling and digital speech coding.

When ordering any of the Encryption Algorithms:

- The DES-OFB and AES encryption algorithms offered are compliant with digital Project 25 standards and does not support analog encryption operation.
- **Requires** the ASTRO Digital CAI (Q806) to operate the DES-OFB and AES encryption.

When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

- Encryption Algorithms can be ordered later via Flash Port.

FIPS 140-2 Compliance

Encryption Modules equipped with AES are FIPS 140-2 compliant. Details regarding the certification, and copies of the relevant certificates, can be obtained on the NIST website at: http://csrc.nist.gov/groups/STM/cmvp/validation.html.

Further information regarding FIPS 140-2 certification may be found using the following link - FIPS 140-2 Crypto Module Validation Program (CMVP) http://csrc.nist.gov/groups/STM/cmvp/index.html

FM INFORMATION

APX 6000 Portable Radio when properly equipped with options Q393 OR QA00581 OR QA00582 OR QA02818 are Factory Mutual (FM/CSA) Approved as intrinsically safe for use in Div 1, Class I, Groups C,D, Class II groups E, F, G, Class III Div 2, Class I A, B,C,D.

ASTRO Text Messaging Service

ASTRO Text Messaging Service will be available on APX 6000 Dual Display Portable radios. Text Messaging Service (TMS) allows subscriber users to send and receive text messages to other subscribers or dispatch operators. Users can select messages and addresses from a predefined list or enter freeform text messages and addresses via the keypad. Text Messaging Service is available on ASTRO P25 Conventional and Trunked IV&D Systems and Subscribers.

Text Meseege is NOT supported on APX 6000 (Model I) Top Display Portable radio.

Ordering ASTRO Text Messaging for APX 6000 Portable Requiree:

- APX 6000 Dual Display
- ASTRO Digital CAI Operation (Q806)
- P25 Conventional (H35)
- Packet Data Interface (Q947)

OR

- APX 6000 Dual Display
- ASTRO Digital CAI Operation (Q806)
- SmartZone Operation (H38)
- ASTRO Project 25 Trunking Software (Q361)
- Packet Data Interface (Q947)

NOTE: *There is no specific option to order for the Text Messaging Service on the subscribers as the functionality is included in the Packet Data option.*

Outdoor Personnel Location Global Positioning Satellite (GPS) Feature

The personnel outdoor location tracking GPS feature enables a dispatcher the ability to locate on-foot patrols and out of the vehicle officers who are involved in life threatening situations. The radio user's GPS position information is sent over the ASTRO 25 Integrated Voice & Data (IV&D) network and is delivered to the dispatch operator using a third party mapping display application at the dispatch center (Mapping Application is not yet available through Motorola at this time, however an Application Developers Tool Kit is available for 3rd party vendors to use to modify existing applications. See link below for more details.) On the Dual Display model only it is possible to the user to determine their own location (latitude/longitude) through the use of the location menu.

During normal operation the radio battery capacity will be reduced by 10% to 16%.

In order to obtain an initial GPS fix position, the radio must be located in an open sky, outdoor environment with no barriers that could affect the signal around you or above you. During this initial fix, the radio should NOT be worn on the body as this may affect the process of acquiring signal and/or add additional time to first fix.

NOTE LIMITATIONS OF USE:

GPS works best in an open sky (clear view of the sky with no obstructions) environment. Due to the limitations of the technology, there are certain situations which prevent GPS coverage. These situations include but are not limitsd to:

- Underground locations (tunnels, subways, etc.)
- Inside of buildings, elevators, parking garages, trains, other covered vehicles, etc.
- Under metal or concrete roof structures
- Urban canyons (between tall buildings or under dense tree coverege)

***GPS Performance may be degraded when the radio is worn against the body and/or against the body within a vehicle.

Due to the limitations mentioned above, GPS should only be utilized as a method to assist the user with location information but not as a means for mission critical communication. Therefore, in any emergency situation, the location should always be verbally reported to the dispatcher.

For further information regarding System Requirements, go to the location solutions price pages at:
http://ecat.comm.mot.com/ecat/pricebooks/dup/ALOCATION.htm

Ordering GPS for APX 6000 Portable Requires:

- Enable Internal GPS Operation (QA00782)
- Packet Data Interface (Q947)

UHF SELF-QUIETING SPURS	
UHFR1 Models (1.5, 2.5, 3.5)	**Frequencies**
	383.975
	393.2125
	395.975
	432
	456
UHFR2 Models (1.5, 2.5, 3.5)	**Frequencies**
	456
	479.975
	480

CPS INFORMATION

****Please note that a NEW version of CPS (RVN5224) is required for initial customer orders for this product. This new version of CPS is required for the APX radio shipments. ****

FCC Information

Band/Model	Power Output	Transmitter Certification	Emissions	Applicable Rules
UHF Range 1 (380-470 MHz)	1 to 5 Watts	AZ489FT4892	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W	90
UHF Range 2* (450-520 MHz)	1 to 5 Watts	AZ489FT4903	11K0F3E, 8K10F1D, 8K10F1E, 8K10F1W	90

*The FCC is mandating all Public Safety and Industrial/Business licensees convert existing 25 kHz efficiency operations in the VHF and UHF bands to minimum 12.5 kHz efficiency analog or digital operation, and that going forward they implement no more 25 kHz efficiency systems. To implement this mandate, the FCC developed rules and deadlines that impact both radio users and equipment providers.

Ordering Guide

Enhancement Level Reference Guide

Fleet Management Ordering Guide

APX Family Brochure

Spec Sheet

RSA Comprehensive

RSA

Portable Accessories Catalog

Radio Applications \ Advanced System Key

Section A: Required Main Model and Options

For standard Radio Operation Steps 1 - 6

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

1: Main Model *(Must Select One)*

Description	Nomenclature	APC	Price
APX6000 UHF R1 MODEL 1.5 PORTABLE	H98QDD9PW5 N	481	$1,900.00
Description	**Nomenclature**	**APC**	**Price**
APX8000 UHF R1 MODEL 2.5 PORTABLE	H98QDF9PW6 N	481	$2,200.00
Description	**Nomenclature**	**APC**	**Price**
APX8000 UHFR1 MODEL 3.5 PORTABLE	H98QDH9PW7 N	481	$2,600.00
Description	**Nomenclature**	**APC**	**Price**
APX6000 UHF R2 MODEL 1.5 PORTABLE	H98SDD9PW5 N	481	$1,900.00
Description	**Nomenclature**	**APC**	**Price**
APX6000 UHF R2 MODEL 2.5 PORTABLE	H98SDF9PW6 N	481	$2,200.00
Description	**Nomenclature**	**APC**	**Price**
APX6000 UHF R2 MODEL 3.5 PORTABLE	H98SDH9PW7 N	481	$2,600.00

2: Ruggedized Housing

Dsecription	Nomenclature	APC	Price
ENH: APX6000XE RUGGED RADIO	QA02006	756	$800.00

This Option will pull in the XE (extreme) control top with larger knobs and a display for fire users. The carry cases are different for this radio so be sure to choose the right APX6000XE case if you do not want to use the plastic carry holder that ships std with the Model 2 and 3 radios. This option will also pull in an FM battery (NNTN8092)and will include radio FM certification. The QA02006 option includes Delta-T standard.

3: Housing

Description	Nomenclature	APC	Price
ALT: PUBLIC SAFETY YELLOW	H64	481	$25.00

APX6000 comes standard IP67 unless ordered with H499 Delta T option. APX6000XE comes Delta T standard.

ALT: HIGH IMPACT GREEN	QA01427	481	$25.00

APX6000 comes standard IP67 unless the H499 Delta-T option is ordered. APX6000XE comes standard Delta-T.

4: Operation Mode *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: ANALOG OPERATION	Q241	481	$0.00

Requires either a H35, H37, or H38

ADD: ASTRO DIGITAL CAI OPERATION	Q806	481	$515.00

Requires either a H35, H37, or H38

5: System Enhancement Software *(Must Select One)*

ADD: CONVENTIONAL OPERATION	H35	481	$500.00
ADD: SMARTZONE OPERATION	H38	481	$1,200.00

A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.

ADD: SMARTZONE OMNILINK (NON-P25)	Q173	481	$200.00

Requires H38 SmartZone and Q806 Digital Operation (required for 3600 baud only trunked systems.) APX 6000 digital radios require Advanced System Keys (ASK - DVN4046A) to be configured to operate on a trunking system.

ADD: P25 9600 BAUD TRUNKING	Q361	481	$300.00
Requires H38 and Q808. INCLUDED at "NO Charge" Q173-OmniLink. APX 6000 digital radios require Advanced System Keys (ASK- DVN4048A) to be configured to operate on a trunking system.			
ADD: TDMA OPERATION	QA00580	481	$400.00
For APX6000 and APX6000XE, QA00580 requires Q806, H38, Q361. If ordering an APX6000Li, QA00580 requires QA02758. A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.			
ADD: ENABLE BLUETODTH SOFTWARE	QA00583	481	$150.00
ENH: ENABLE INTERNAL ACTIVATION AND GPS BASIC FUNCTIONALITY	QA00782	481	$100.00
Must have IV&D (Q947) enabled.			
ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648	855	$5.00
A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4048 to be purchased.			
ADD: ADVANCED SYSTEM KEY - SOFTWARE KEY	QA01749	855	$0.00
A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking.			

6: System Enhancement Options ***(Must Select One)***

ADD: PROGRAMMING OVER P25 (OTAP)	Q996	481	$100.00
Compatible with P25 Trunking and Conventional Operation. POP25 requires AES encryption for ASTRO Conventional operation. Must have IV&D (Q947) enabled. To do in field POP25 programming must use Advanced System Key (DVN4048A)			
ENH: RADIO TRACE/ REMOTE MONITOR	H43	481	$75.00
Requires Q808 and either H37, H36, or H35.			
ENH: ONE TOUCH/STATUS MSG	H48	481	$75.00
Only compatible with Model 2.5 and 3.5 Radios			
ADD: MULTICAST VOTING SCAN	Q387	481	$200.00
ADD: RADIO PACKET DATA	Q947	481	$200.00
This option is only capable of being used on P25 Digital Conventional and 9600 Trunking Systems. This option is required for IV & D operation.			
ADD:LINK LAYER RADIO AUTHENTICATION	QA01767	481	$100.00
Requires P25 Trunking (Q361)			
ENH: ENHANCED ZONE BANK	QA01768	481	$75.00
This option will increase the channel/talkgroup capacity on a Model 1 from 96 to 870. Zone Up/Zone Down, Zone Bank Up/Zone Bank Down will be unlocked with this option.			
ENH: ENHANCEMENT LEVEL 2	QA01771	481	$200.00
Please reference the Enhancement Level Reference Guide for more details. This option allows for a few parameters (ZONES, CHANNELS, SYSTEMS PERSONALITIES, UCL ENTRIES, VOICE ANNOUNCMENT, ENCRYPTION KEYS) on the mid tier to go to a high tier			
ADD: ACCELEROMETER/ MAN DOWN	QA01843	481	$150.00
ADD: DVRS PSU ACTIVATION	QA00631	655	$100.00
Enables DVRS Enhanced PSU functionality on APX Radios. Requires XTL MBU and Digital Operation.			
ADD: APX Personnel Accountability	Q445	481	$150.00

7: Algorithm Option ***(Not Required)***

Description	Nomenclature	APC	Price
ENH: DVP-XL ENCRYPTION	H797	481	$487.00
Compatible with Digital and Analog (25kHZ Only) operations. ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES .			
ENH: MULTIKEY	H869	481	$330.00
ENH: AES/DES,DES-XL,DES-OFB	Q15	481	$799.00
ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES. Incompatible with Q625 and Q629			
Description	**Nomenclature**	**APC**	**Price**
ENH: MDC & ASTRO P25 OTAR W/ MULTIKEY	Q498	481	$740.00
Incompatible with the H04 option since Tactical OTAR is included with the Q486 option. Tactical OTAR can only be utilized when IV&D is purchased.			
ENH: DES,DES-XL,DES-OFB ENCRYPTION	Q625	481	$599.00
Compatible with Analog 25kHZ/DES-OFB Digital 12.5kHZ Only. ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES			
ENH: AES ENCRYPTION	Q629	481	$475.00
ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES			

8: Antenna

Description	Nomenclature	APC	Price
DEL: DELETE STANDARD ANTENNA	H112	481	($10.00)
Description	**Nomenclature**	**APC**	**Price**
ALT: UHFR1 GPS STUBBY ANTENNA (FAF5259A)	QA02017	481	$55.00
Length: 3.66" Only Compatible with- H98QDD9PW5AN, H98QDF9PW6AN, H98QDH9PW7AN			
Description	**Nomenclature**	**APC**	**Price**
ALT: UHFR2 GPS STUBBY ANTENNA (FAF5260)	QA02017	481	$24.00
Only Compatible with - H98SDD9PW5AN, H98SDF9PW6AN, H98SDH9PW7AN			

9: Battery

DEL: DELETE STANDARD BATTERY Deletes standard battery PMNN4403 for APX6000 or NNTN8092 for APX6000XE	H207	481	($47.00)
ALT: NIMH IMPRES 2100MAH IP67 BATTERY (NNTN7037) This option will delete the standard option and replace with NIMH IMPRES 2100MAH IP67 BATTERY(NNTN7037)	H335	481	$78.00
ALT: NIMH IMPRES 2000MAH FM/CSA IP67 (NNTN7036) The option will delete the standard battery and replace with NIMH IMPRES 2000MAH FM IP67 BATT (NNTN7036)	Q393	481	$95.00
ALT: NIMH IMPRES 2000 MAH FM/CSA DELTA T (NNTN7035) This option will delete the standard battery and replace with LIION 2000 MAH DELTA-T (NNTN7035). This battery is compatible with H499 and meets FM certification.	QA00581	481	$133.00
ALT: LIION IMPRES 4100 MAH FM/CSA IP67 (NNTN7033A) This option will delete the standard battery and replace it with LITHIUM ION 4000MAH IMPRES (NNTN7033). This battery is compatible with H499 and meets FM certification.	QA00582	481	$165.00
ALT: LIION 4200MAH IMPRES DELTA-T This option will delete the standard battery and replace it with LIION 4200MAH IMPRES(NNTN7034). This battery is compatible with H499.	QA00781	481	$115.00
ALT: LIION IMPRES IP67 2900MAH (NNTN7038) This option will delete the standard battery and replace it with LIION IMPRES 2900MAH IP67 (NNTN7038).	QA01837	481	$100.00
ALT:LIION IMPRES FM/CSA 2300M (NNTN6092) This option will delete the standard battery and replace it with LIION IMPRES 2300M (NNTN8092). This option is compatible with H499 and meets FM certification.	QA02818	461	$50.00
ALT: SLIM LIION 2150MAH BATTERY(PMNN)	QA02021	461	$80.00

10: Belt Clip (s)

Model 1.5 comes standard with 3" belt clip.

Description	Nomenclature	APC	Price
DEL: DELETE BELT CLIP/ BASIC CARRY HOLDER	H301	481	($10.00)
ADD: APX6000XE BASIC CARRY HOLDER This NEW APX6000XE carry holder will ship std on Model 2 and Model 3 radios.	QA00779	481	$29.00

11: Cable (s)

Description	Nomenclature	APC	Price
ADD: DATA CABLE PMKN4013A-GCAI cable at radio interface and USB connection at other end for computer programming. Please note that the PMKN4012A is NOT compatible with the APX 4000	Q157	655	$75.00

12: Programming

Description	Nomenclature	APC	Price
ENH: FRONT PANEL PROGRAMMING Compatible with model 3.5 radios only	Q53	430	$150.00
ADD: FRONT PANEL PROGRAM (FED GOVT)	Q52	470	$150.00

13: Service Options

Description	Nomenclature	APC	Price
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE Provides 2 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	H885BK	185	$84.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE Provides 3 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	H886AQ	185	$125.00
ADD: 3 YR RSA COMPREHENSIVE Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	HA00022AB	185	$228.00
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	Q884	185	$44.00
ENH:4 YEAR REPAIR SERVICE ADVANTAGE Provides 4 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	Q887	185	$162.00

14: Manual

Description	Nomenclature	APC	Price
DEL: USER GUIDE CD This deletes the user guide CD that ships standard with the radio.	QA01274	481	$0.00

ADD: DATA LINK MANAGER APP CD-PORTABLES Option provides the NVN5424 Data CD. Please order this option if you would like the Data CD, and are unable to obtain it through other sources such as MOL.	QA00205	655	$0.00

15: Packaging

Description	Nomenclature	APC	Price
ADD: SINGLE UNIT PACKING	H842	481	$0.00

Section D: Aftermarket Accessories

Adapters

Description	Nomenclature	APC	Price
APX SURVEILLANCE KEYLOAD A	NNTN7869A	742	$65.00
APX FPP HW KEY (DONGLE)	NNTN7526	655	$37.00

Antenna

Description	Nomenclature	APC	Price
UHF1 GPS STUBBY ANTENNA	FAF5259A	481	$60.00

Batteries

Description	Nomenclature	APC	Price
ASSEMBLY,BATTERY,BATT IMP FM RUGGEDIZED LIION 4100M 4300T BLK Dimensions (HxWxD) 5.12" x 2.34" x 1.65"	NNTN7033A	453	$175.00
ASSEMBLY,BATTERY,BATT IMP STD RUGGEDIZED LIION 4200M 4400T BLK Dimensions (HxWxD) 5.13" x 2.34" x 1.65"	NNTN7034A	798	$160.00
APX 7000 IMPRES NIMH 2000MAH RUGGEDIZED PLUS FM BATTERY Motorola now makes batteries to an even more stringent military standard for customers who require a higher level of submersibility protection - MIL-STD-810E, Method 512.3 Immersion, which are referred to as Ruggedized PLUS. Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	NNTN7035	798	$147.00
APX 7000 IMPRES NIMH 2000MAH SUBMERSIBLE (IP67) FM BATTERY Dimensions (HxWxD) 5.34" x 2.34" x 1.57"	NNTN7036	798	$142.00
APX 7000 IMPRES NIMH 2100MAH SUBMERSIBLE (IP67) BATTERY Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	NNTN7037	798	$125.00
BATT IMP STD IP67 LIION 2900M 3100T BLK Dimensions (HxWxD) 3.07" x 2.34" x 1.65"	NNTN7038	798	$140.00
LIION IMPRES 2150MAH IP67 BATT Dimensions (HxWxD) 3.39" x 2.34" x 1.46"	PMNN4403	453	$125.00
IMPRES BATTERY DATA READER Provides IMPRES battery users ability to access key usage data via PC. Compatible w/all IMPRES batteries (HT/PRO,TREO & APX adapter included)	NNTN7392	785	$250.00
APX 7000 IMPRES NIMH 2100MAH RUGGEDIZED PLUS BATTERY Motorola now makes batteries to an even more stringent military standard for customers who require a higher level of submersibility protection - MIL-STD-810E, Method 512.3 Immersion, which are referred to as Ruggedized PLUS. Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	NNTN7573	796	$130.00
BATT IMP FM R LI ION 2300M 2350T ***This Impress 2300MAH Lithium Ion battery is both FM certified and Ruggedized PLUS (submersible). The battery is offered in a small form factor. It is the standard battery offered with the XE(eXtrEme) radio products.*** Dimensions (HxWxD): 3.07" x 2.34" x 1.55"	NNTN8092	453	$140.00

Battery Fleet Management

Description	Nomenclature	APC	Price
FLEET MANAGEMENT CHRGR INTERFACE UNIT Multi-Unit Charger Interface Unit, attaches to an APX or XTS IMPRES multi-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to IMPRES Battery Fleet Management.	NNTN7677A	785	$80.00
IMPRES BATTERY DATA READER Provides IMPRES battery users ability to access key usage data via PC. Compatible w/all IMPRES batteries (HT/PRO,TREO & APX adapter included)	NNTN7392	785	$250.00
FLEET MANAGEMENT RELEASE 1.2	NNTN7876C	785	$10.00
CHARGR INTRFCE UNT GEN1 IMPRES SUC Single-Unit Charger Interface Unit , attaches to an APX IMPRES single-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to the IMPRES Battery Fleet Management.	NNTN8045A	785	$35.00

NA FLEET MANAGEMENT LICENSE KEY	HKVN4036A	785	$489.00

Bluetooth Mission Critical Wireless

Description	Nomenclature	APC	Price
EARPIECE W/9.5" CABLE	NTN2575A	742	$151.00
EARPIECE W/12" CABLE	NTN2572A	742	$151.00
FM Certified; MCW BT; Requires QA00583 to be ordered in the APX radio			
ASSEMBLY,ACCESSORY,WIRELESS ACCY KIT, NFP, 9.5" CABLE	NTN2573B	742	$295.00
FM Certified MCW BT Requires QA00583 to be ordered in the APX radio			
WIRELESS 2.0 COMMPORT IC MODULE	NTN2571B	742	$139.00
1-WIRE EARBUD,29CM CORD,BLACK	NNTN8294A	742	$40.00
1-WIRE EARBUD,116CM CORD,BLACK	NNTN8295A	742	$40.00
ACCY,KIT,EAR PIECE,2W SHORT CORD,BL	NNTN8296A	742	$180.00

Bluetooth, Mission Critical Wireless Replacement Parts

Description	Nomenclature	APC	Price
ACCY,SMPS,MICRO USB,FIXED,CLP,US	PMPN4009A	903	$21.00
COMMPORT EAR TUBES (PACK OF 10)	RLN5037	115	$26.00
COMMPORT MAINTENANCE KIT	NTN8821	115	$46.00
Includes Replacement Ear Tubes (qty 10), Windscreens (qty 2) and Microphone Seal Strips (qty 10).			
COMMPORT EAR STRAP (PACK OF 10)	NTN8988A	115	$17.25
EARTIPS, REPLACEMENT	NNTN8299A	742	$3.15

Belt Clip(s)

Description	Nomenclature	APC	Price
3" PLASTIC BELT CLIP ATTACHMENT	HLN6875A	721	$12.00
Description	**Nomenclature**	**APC**	**Price**
2.5" PLASTIC BELT CLIP ATTACHMENT	NTN8266B	476	$12.00
2.5? Belt Clip is compatible with all APX subscribers except the APX4000 series			

Belt Loops

Description	Nomenclature	APC	Price
APX 7000 2.5" REPLACEMENT SWIVEL BELT LOOP	PMLN5407	271	$12.00
Description	**Nomenclature**	**APC**	**Price**
APX 7000 2.75" REPLACEMENT SWIVEL BELT LOOP	PMLN5408	795	$12.00
Description	**Nomenclature**	**APC**	**Price**
APX 7000 3" REPLACEMENT SWIVEL BELT LOOP	PMLN5409	271	$12.00

Carrying Case(s)

Note: The APX 6000XE and APX 6000 do not have leather carry cases available for the NNTN7035, NNTN7036, NNTN7037 and NNTN7573 batteries.

Description	Nomenclature	APC	Price
APX6000XE 2.75SWBL2900,2300&2150MAH	PMLN5875	271	$65.00
APX6000XE Carry Case			
Description	**Nomenclature**	**APC**	**Price**
APX6000XE 3 FIXBL 2900,2300&2150MAH	PMLN5876A	795	$62.00
Description	**Nomenclature**	**APC**	**Price**
APX6000XE CC 2.75 SWL BL 4200MAH	PMLN5877A	795	$65.00
Description	**Nomenclature**	**APC**	**Price**
APX6000XE CC 3 FIX BL 4200MAH	PMLN5879A	795	$62.00
Description	**Nomenclature**	**APC**	**Price**
APX6000XE UNIV C HOLDER	PMLN5880A	795	$29.00

Charger

Description	Nomenclature	APC	Price
IMPRES CHG MU MACKINAW US/NA/CA/LA	NNTN7065B	785	$788.00
Description	**Nomenclature**	**APC**	**Price**
IMPRES CG MUD MACKINAW US/NA/CA/LA	NNTN7073B	785	$1,350.00
Description	**Nomenclature**	**APC**	**Price**
APX DUAL UNIT CHARGER WITHOUT DISPLAY	NNTN7566	795	$295.00
This next generation IMPRES charger provides advanced features, including the ability to turn on/off reconditioning, reduced reconditioning time and improved energy efficiency.			
Description	**Nomenclature**	**APC**	**Price**

CHR IMP DISP DUC EXT US/NA/CA/LA	NNTN7593A	785	$375.00
Description	**Nomenclature**	**APC**	**Price**
APX CHARGER INSERT ADAPTER FOR XTS MULTI-UNIT CHARGER Six inserts will ship in one package. Requires charger containing Software Version 3.4 or greater.	NNTN7686A	795	$207.00
Description	**Nomenclature**	**APC**	**Price**
APX CHARGER INSERT ADAPTER FOR XTS SINGLE-UNIT CHARGER Only 1 SUC insert will ship. Requires charger containing Software Version 3.4 or greater.	NNTN7887A	795	$45.00
Description	**Nomenclature**	**APC**	**Price**
APX TRAVEL CHARGER	RLN6434A	785	$101.00
Description	**Nomenclature**	**APC**	**Price**
APX 7000 IMPRES CG SU APX7000 US/NA/CA/LA	WPLN7080	795	$125.00
Description	**Nomenclature**	**APC**	**Price**
IMPRES VEHICULAR CHARGER (FULL KIT) APX Portable Vehicular Charger (NNTN7624B supports APX XE subscriber line as well)	NNTN7624B	785	$390.00

CPS

~~NEO PORT PROG CABLE~~ ~~APX DMR PORT PROG CABLE~~	~~PMKN4012B~~	~~037~~	~~$75.00~~
PROGRAMMING, TEST & ALIGNMENT CABLE	PMKN4013C	037	$92.00

Earpieces

Description	**Nomenclature**	**APC**	**Price**
RECEIVE-ONLY FOAM EARBUD WITH 3.5MM PLUG - INTRINSICALLY SAFE (FM) When used with MTP3000 models, to be used with remote speaker microphones PMMN4078A, PMMN4072A and PMMN4074A	AARLN4885	742	$25.00
EAR RCVR W/COIL CBL&3.5MM PLUG	WADN4190B	742	$43.00

Headsets

Description	**Nomenclature**	**APC**	**Price**
IMPRES TEMPLE TRANSDUCER FM Certified	PMLN5101A	742	$228.00
HEAVY DUTY HEADSET PMLN5275B FM Certified	PMLN5275B	742	$485.00
CORE L/W HEADSET FM Certified	RMN5058A	742	$99.00
RX/TX BOOMLESS TEMPLE TRANSDUCER Temple Transducer Headset will ONLY work with: Microphone Compatibility HMN4101, HMN4103, HMN4104.	RMN5116A	742	$248.00

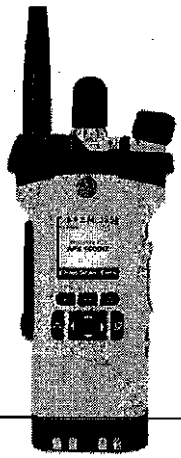
Remote Speaker Microphones - RSM's

Description	**Nomenclature**	**APC**	**Price**
IMPRES RSM DSPLY W JACK, W CHNL	HMN4104A	795	$375.00
IMPRES XE RSM, BLACK	NNTN8203ABLK	372	$335.00
APX7000 IMPRES RSM, NOISE CANC. EMERGENCY BUTTON 3.5MM JACK IP54	PMMN4062A	795	$107.00
APX IMPRES RSM W/VOL, IP57	PMMN4065A	795	$97.00
IMPRES RSM, 3.5MM AUDIO JACK	PMMN4069A	795	$110.00
RSM INTERFACE CABLE, NEXUS 4-POLE	PMKN4112A	795	$53.00
RSM INTERFACE CABLE, NEXUS 5-POLE	PMKN4107A	795	$53.00
DISPLAY RSM GCAI, REPLACEABLE CABLE	3075336B17	372	$90.00
RX ONLY EARPIECE W/TRANSLUCENT TUBE	RLN6424B	742	$80.00

Surveillance Kits, Wired

Description	**Nomenclature**	**APC**	**Price**
RUBBER EAR TIP, CLEAR	67009254001	795	$9.95
SURVEILLANCE LOW NOISE KIT	RLN5686A	742	$20.00
REPLACEMENT CLEAR ACOUSTIC TUBE	0105954U29	742	$7.90
SURVEILLANCE HIGH NOISE KIT	RLN5887A	742	$32.00
SPKR MIC W XLOAD EARPIECE Exceeds OSHA limits. REQUIRES NTN5684 Audio Adapter. FACTORY MUTUAL APPROVED.	ZMN6039	742	$190.00
2-WIRE SURVEILLANCE KIT WITH MICROPHONE AND PTT COMBINED - EXTRA LOUD Exceeds OSHA limits. Requires NTN5684 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8613 adapter	ZMN6038	476	$149.00
3-WIRE SURVEILLANCE KIT WITH MICROPHONE & PTT COMBINED, BEIGE Requires NTN5684 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8613 adapter	ZMN6031	742	$177.00
2-WIRE SURVEILLANCE KIT WITH MICROPHONE AND PTT COMBINED Requires NTN5684 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8613 adapter	ZMN6032	476	$143.00

Data Compiled 16-May-2013 using DUP and all prices in USD



ASTRO® Digital APX 6000XE™ Portable Series

VHF Band

P25 Phase 2 Single Band Capable Radio

Special Note for United States - State & Local Markets only:

In accordance to a FCC mandate, VHF (150-174 MHz) and UHF R1 (421-450 MHz) products operating on Part 90 frequencies will be restricted to 12.5 kHz or narrower operations on Jan. 1, 2013.

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749), HARDWARE KEY (QA01648), OR WACN KEY SUPPLEMENTAL DATA (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY or QA02018-WACN KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. ******

******NOTE: The APX6000XE ships standard as a RUGGED (Delta T submersion) portable and with FM certification. Changing the standard battery configuration may affect the certification of the radio i.e. if a non-FM battery is chosen, the radio will not receive FM certification****

Ship Card

Features

All ASTRO Digital APX 6000XE models include the following features:

- Dual Microphone
- 0.5 Watt Rated Audio
- Integrated GPS Hardware Capable*
- Integrated Bluetooth Hardwera Capable*
- Detachable Belt Clip for Top Display Model
- FM Lilon RUGGED 2300 mAh Battery (NNTN8092)
- Antenna (Dependent on Frequency Band and Type)
- Intelligent Lighting
- ADP Privacy - ships standard with Single Key
- 3 Programmable Side Buttons
- Orange Programmable Button
- 16 Position Mode Rotary Select Switch
- Angled On/Off Volume Knob
- Low Battery Alert Tone
- Noise Cancellation Software
- 1 Top Mounted Programmable 3 Position Toggle Switch
- Top Display: 1 line of text, 1 line of icons, 0 menu lines
- Delta T and FM ship standard with every radio model

ASTRO Digital APX 6000 Limited Keypad and Full Kepad with Dual Display Model also includes:

- Universal Carry Holder
- Unified Call List
- Front Color Display: 4 lines of text, 2 lines of icon
- Radio Profiles
- Full Keypad: 4 x 3 alpha-numeric 3 programmable button, 4 way navigation, home and date buttons

*** Must purchase Software to ENABLE**

*** All APX6000 Portable Radios ship standard with SW and HW ADP Privacy**

All ASTRO Digital APX 6000 Portables are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the current RF capabilities of the radio)

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749), HARDWARE KEY (QA01648), OR WACN KEY SUPPLEMENTAL DATA (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY or QA02018- WACN KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. Also, an Advanced System Keys (ASK- DVN4046) will be required to be ordered. ******

http://ecat.comm.mot.com/ecat/pricebooks/dup/ASK.htm

General Information

The ASTRO Digital APX 6000 Portable Line offers **THREE** different radio hardware models:

Hardware Model	Modes	Alphanumeric Display Lines/Characters	Keypad	Navigation Pad
ASTRO APX 6000 Top Display	96	8 (top)	-	No
ASTRO APX 6000 Limited Keypad	870	14 (front) & 8 (top)	-	Yes
ASTRO APX 6000 Full Keypad	870	14 (front) & 8 (top)	4 x 3	Yes

Operating Modes

ASTRO Digital APX 6000 Radio Models are capable of operating in four different voice communication modes:

- Normal Analog (clear voice)
- 3.6KB ASTRO Digital (both clear and coded voice)
- 9.6 KB ASTRO 25 Digital (both Clear and Coded voice)
- 9.6KB 12.5kHz 2 slot digital TDMA (both clear and coded voice).
- Will be capable of APCO25 Phase 2 functionality in future software releases.

TDMA

FDMA (Frequency Division Multiple Access) is a proven technology that is widely used today in radio systems and is part of APCO 25 Project 25 Phase 1 standard. FDMA carries one call per channel. TDMA (Time Division Multiple Access) will be part of P25 Phase 2 standard and provides double the voice capacity as 2 calls can share 1 channel. Customers can add more users to their systems without the need of additional frequencies or infrastructure. The APX radios support both P25 Phase 1 and TDMA technologies seamlessly. Using Motorola's unique Dynamic Dual Mode (DDM) capability, the radios dynamically switch between FDMA and TDMA without the user having to change channels. This provides interoperability on demand with existing and future networks.

FLASHport AFTERMARKET UPGRADES

The ASTRO Digital APX 6000 Portable Series Radios are part of the FLASHport Program. This means that ASTRO Digital APX 6000 hardware models can be loaded with different software packages that provide the features and functionalities that our customers require.

System Enhancement Options can be loaded at the time of radio purchase or at a later date through the use of software field upgrades (a USB cable is required for all software upgrades.) The ASTRO Digital APX 6000 portable can be upgraded electronically in the field with new features in the current system or to new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

Ordering Requirements

Ordering procedure is as follows...

Steps	Required Options	Comments
		APX Digital Portable Radio-
1	APX 6000 VHF Main Model	a. H98KGD9PW5AN b. H98KGF9PW6AN c. H98KGH9PW7AN
2	APX 6000XE VHF Option	a. QA02008
3	Operation Mode	a. Q241; Analog Operation b. Q606; ASTRO digital CAI operation
4	System Enhancement Software	a. H35; Conventional Operation b. H37; Smartnet Operation c. H38; Smartzone Operation d. Q173; Smartzone Omnilink (non-P25)

e. Q361; P25 9600 Baud Trunking
f. QA00560; TDMA

1. Order the APX 6000 Portable Series as the main line item.

- Each hardware model MUST be ordered with one operation mode.
- Default battery is Lilon 2150mAh (-20°c)
- Default belt clip for top display models and carry holder for limited keypad and full keyped models
- Default Antenna is the single appropriate antenna for your RF configuration.

2. Select any other system enhancement options you desire.

- Note - APX Radio ships with 12 month standard warranty.

Common Software Features Supported By

	H38 "SmartZone"			
	"Analog Operation"(Q241/H38)	"ASTRO Digital"(Q806/H38)	"ASTRO Digital"(H38/Q806/Q361)	"TDMA"(QA00580AA)
	Non-Project 25 (3600 Baud)	Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	TDMA OPERATION
RADIO WIDE FEATURES				
Maximum Modes				
ASTRO Digital APX 6000 Top Display	96	96	96	96
ASTRO Digital APX 6000 Limited Keypad	870	870	870	870
ASTRO Digital APX 6000 Full Keypad	870	870	870	870
Analog and Digital Operation	Yes	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable	No	Yes (Digital Only)	Yes (Digital Only)	Yes (Digital Only)
One Touch Operation	Yes	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes	Yes
Surveillance Mode	Yes	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes	Yes
Radio Lock	Yes	Yes	Yes	Yes
Smart Battery	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified above.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
DTMF Signaling	Future	Future	Future	Future
Quick-Call Signaling	Future	Future	Future	Future
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Conventional interoperable Features when used in the ASTRO Digital CAI Mode (Q806).				
Unaddressed Voice Call (Dispatch Call)	Yes	Yes	Yes	Yes
Talk Group Call	Yes	Yes	Yes	Yes
Group Call Alert™	Yes	Yes	Yes	Yes
Talk Group Identification (TGID)	Yes	Yes	Yes	Yes
Selective Call (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
PTT ID (Individual Identification)	MDC-1200 Only	Yes	Yes	Yes
Call Alert Encode/Decode	MDC-1200 Only	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	MDC-1200 Only	Yes	Yes	Yes
Telephone Interconnect	Yes	Yes	Yes	Yes
Manual Phone Number Entry	Dual Display Only	Dual Display Only	Dual Display Only	Dual Display Only

Selective Radio Inhibit	MDC-1200 Only	Yes	Yes	Yes
Radio Check	MDC-1200 Only	Yes	Yes	Yes
Status/Message	MDC-1200 Only	Yes	Yes	Yes
Trunking Type II Only Features				
Maximum Number of Trunked Systems-20	Yes	Yes	Yes	Yes
Talkgroup Calls	Yes	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes	Yes
Analog/Digital Dual Mode Scan	No	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only	Status Only
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes	Yes
Remote Monitor/Radio Trace	Yes	Yes	Yes	Yes
Reprogram Request	Yes	Yes	Yes	Yes

H38 "SmartZone"				
	"Analog Operation" (Q241)	"ASTRO Digital" (Q806)	"ASTRO Digital" (H37/Q806/Q361)	"TDMA" (QA00580AA)
		Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	Project 25 (TDMA Operation)
Trunking Type II Only Features				
Voice on Control	-	-	-	-
SmartZone Automatic Site Registration	Yes	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes	Yes
SmartZone Preferred Site	Yes	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the APX 6000 portable series. Separation of frequencies can be as wide as the allowable band per radio model with no degradation of any performance specifications. If an incorrect antenna is used, degraded performance may be experienced.

ZONED OPERATION

This option converts MODE-ONLY ASTRO Digital APX 6000 portables to Zone Operation radios.

For Top Display radios, a maximum of 16 channels (conventional RX and TX pairs or trunking talkgroups) are accessible in a zone. There is a maximum of six accessible zones (96 channels) when zone selection operation is programmed on the 3 position toggle switch and the Zone Bank feature is programmed on a button. The Zone Bank feature allows the 3 position toggle switch to access zones 1-3 or 4-6.

For the Top Display radio there is a maximum of 6 accessible zones, and 16 accessible channels per zone with the overall maximum of 96 channels. For the Dual Display Radios with Limited keypad or Full Keypad, there is a maximum of 50 zones, 625 channels per zone with the overall maximum of 870 channels. These radios provide "ZONE" and "CHAN" menus that allows access to zones and channels not accessible via the switches.

*Note: Top Display Radio codeplugs can be programmed with the same zone/channel configuration as the Dual Display Radios even though not all of the zones and channels are accessible. This is useful for having a common zone/channel template that can be shared between the different radio models.

PROJECT 25 ENCRYPTION

The mode of operation is programmed on a channel-by-channel basis. With the coded/clear switch set to the clear mode, the ASTRO Digital APX6000 radio is capable of transmitting clear analog voice or clear (unencrypted) ASTRO Digital voice, depending on the channel programming. With the coded/clear switch set to the coded mode, the ASTRO Digital APX 6000 radio will transmit ASTRO Digital encryption depending on the channel programming. ASTRO Digital encryption provides secure communications. ASTRO Digital Encryption (operation in encrypted mode while also operation in 3.6KB or 9.6KB and TDMA ASTRO mode) is capable of XL type encryptions; ASTRO Digital Encryptions does not operate with non-XL encryptions.

An encryption option is not required for either clear analog operation or clear ASTRO Digital operation. Encryption can be ordered with the ASTRO Digital APX 6000 radio either as a factory installed option or seperate from the radio for later field installation. ASTRO Digital APX 6000 radio functions include selected ASTRO digital signaling and digital speech coding.

When ordering any of the Encryption Algorithms:

- The DES-OFB and AES encryption algorithms offered are compliant with digital Project 25 standards and does not support analog encryption operation.
- **Requires** the ASTRO Digital CAI (Q606) to operate the DES-OFB and AES encryption.

When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

- Encryption Algorithms can be ordered later via Flash Port.

FIPS 140-2 Compliance

Encryption Modules equipped with AES are FIPS 140-2 compliant. Details regarding the certification, and copies of the relevant certificates, can be obtained on the NIST website at: http://csrc.nist.gov/groups/STM/cmvp/validation.html.

Further information regarding FIPS 140-2 certification may be found using the following link - FIPS 140-2 Crypto Module Validation Program (CMVP) http://csrc.nist.gov/groups/STM/cmvp/index.html

FM INFORMATION

APX 6000 Portable Radio when properly equipped with options Q393 OR QA00581 OR QA00582 OR QA02818 are Factory Mutual (FM/CSA) Approved as Intrinsically safe for use in Div 1, Class I , Groups C,D, Class II groups E, F, G, Class III Div 2, Class I A, B,C,D.

ASTRO Text Messaging Service

ASTRO Text Messaging Service will be available on APX 6000 Dual Display Portable radios. Text Messaging Service (TMS) allows subscriber users to send and receive text messages to other subscribers or dispatch operators. Users can select messages and addresses from a predefined list or enter freeform text messages and addresses via the keypad. Text Messaging Service is available on ASTRO P25 Conventional and Trunked IV&D Systems and Subscribers.

Text Message is NOT supported on APX 6000 (Model I) Top Display Portable radio.

Ordering ASTRO Text Messaging for APX 6000 Portable Requires:

- APX 6000 Dual Display
- ASTRO Digital CAI Operation (Q806)
- P25 Conventional (H35)
- Packet Data Interface (Q947)

OR

- APX 6000 Dual Display
- ASTRO Digital CAI Operation (Q806)
- SmartZone Operation (H38)
- ASTRO Project 25 Trunking Software (Q361)
- Packet Data Interface (Q947)

***NOTE:** There is no specific option to order for the Text Messaging Service on the subscribers as the functionality is included in the Packet Data option.*

Outdoor Personnel Location Global Positioning Satellite (GPS) Feature

The personnel outdoor location tracking GPS feature enables a dispatcher the ability to locate on-foot patrols and out of the vehicle officers who are involved in life threatening situations. The radio user's GPS position information is sent over the ASTRO 25 Integrated Voice & Data (IV&D) network and is delivered to the dispatch operator using a third party mapping display application at the dispatch center *(Mapping Application is not yet available through Motorola at this time, however an Application Developers Tool Kit is available for 3rd party vendors to use to modify existing applications. See link below for more details.)* On the Dual Display model only it is possible to the user to determine their own location (latitude/longitude) through the use of the location menu.

During normal operation the radio battery capacity will be reduced by 10% to 18%.

In order to obtain an initial GPS fix position, the radio must be located in an open sky, outdoor environment with no barriers that could affect the signal around you or above you. During this initial fix, the radio should NOT be worn on the body as this may affect the process of acquiring signal and/or add additional time to first fix.

NOTE LIMITATIONS OF USE:

GPS works best in an open sky (clear view of the sky with no obstructions) environment. Due to the limitations of the technology, there are certain situations which prevent GPS coverage. These situations include but are not limited to:

- Underground locations (tunnels, subways, etc.)
- Inside of buildings, elevators, parking garages, trains, other covered vehicles, etc.
- Under metal or concrete roof structures
- Urban canyons (between tall buildings or under dense tree coverage)

**GPS Performance may be degraded when the radio is worn against the body and/or against the body within a vehicle.

Due to the limitations mentioned above, GPS should only be utilized as a method to assist the user with location information but not as a means for mission critical communication. Therefore, in any emergency situation, the location should always be verbally reported to the dispatcher.

For further information regarding System Requirements, go to the location solutions price pages at: http://ecat.comm.mot.com/ecat/pricebooks/dup/ALOCATION.htm

Ordering GPS for APX 6000 Portable Requires:

- Enable Internal GPS Operation (QA00782)
- Packet Data Interface (Q947)

VHF SELF-QUIETING SPURS

VHF Models (1.5, 2.5, 3.5)	Frequencies
	143.9875
	144
	152.8625
	152.9
	152.9375
	152.975
	155.9875
	159.575
	160.575

CPS INFORMATION

****Please note that a NEW version of CPS (RVN5224) is required for initial customer orders for this product. This new version of CPS is required for the APX radio shipments.****

FCC Information

Band/Model	Power Output	Transmitter Certification	Emissions	Applicable Rules
VHF (138-174 MHz)	1 to 6 Watts	AZ489FT3829	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 20K0F1E	90

*The FCC is mandating all Public Safety and Industrial/Business licensees convert existing 25 kHz efficiency operations in the VHF and UHF bands to minimum 12.5 kHz efficiency analog or digital operation, and that going forward they implement no more 25 kHz efficiency systems. To implement this mandate, the FCC developed rules and deadlines that impact both radio users and equipment providers.

SUB-BAND PERFORMANCE
VHF 138-174MHz in all models

Ordering Guide

Enhancement Level Reference Guide

Fleet Management Ordering Guide

APX Family Brochure

Spec Sheet

RSA Comprehensive

RSA

Portable Accessories Catalog

Radio Applications \ Advanced System Key

Section A: Required Main Model and Options

For standard Radio Operation Steps 1 - 6

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

1: Main Model *(Must Select One)*

Description	Nomenclature	APC	Price
APX6000 VHF MHZ MODEL 1.5 PORTABLE	H98KGD9PW5 N	481	$1,900.00
Description	**Nomenclature**	**APC**	**Price**
APX6000 VHF MHZ MODEL 2.5 PORTABLE	H98KGF9PW6 N	481	$2,200.00
Description	**Nomenclature**	**APC**	**Price**
APX6000 VHF MHZ MODEL 3.5 PORTABLE	H98KGH9PW7 N	481	$2,600.00

2: Ruggedized Housing

Description	Nomenclature	APC	Price
ENH: APX6000XE RUGGED RADIO	QA02006	758	$600.00

This Option will pull in the XE (extreme) control top with larger knobs and a display for five users. The carry cases are different for this radio so be sure to choose the right APX6000XE case if you do not want to use the plastic carry holder that ships std with the Model 2 and 3 radios. This option will also pull in an FM battery (NNTN8092)and will include radio FM certification. The QA02006 option includes Delta-7 standard.

3: Housing

Description	Nomenclature	APC	Price
ALT: PUBLIC SAFETY YELLOW	H64	481	$25.00
APX6000 comes standard IP67 unless ordered with H499 Delta T option. APX6000XE comes Delta 7 standard.			
ALT: HIGH IMPACT GREEN	QA01427	481	$25.00
APX6000 comes standard IP67 unless the H499 Delta-T option is ordered. APX6000XE comes standard Delta-T.			

4: Operation Mode *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: ANALOG OPERATION	Q241	481	$0.00
Requires either a H35, H37, or H38			
ADD: ASTRO DIGITAL CAI OPERATION	Q806	481	$515.00
Requires either a H35, H37, or H38			

5: System Enhancement Software *(Must Select One)*

ADD: CONVENTIONAL OPERATION	H35	481	$500.00
ADD: SMARTZONE OPERATION	H38	481	$1,200.00
A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.			
ADD: SMARTZONE OMNILINK (NON-P25)	Q173	481	$200.00
Requires H38 SmartZone and Q806 Digital Operation (required for 3600 baud only (trunked systems.) APX 6000 digital radios require Advanced System Keys (ASK - DVN4046A) to be configured to operate on a trunking system.			
ADD: P25 9600 BAUD TRUNKING	Q361	481	$300.00
Requires H38 and Q806. INCLUDED at "NO Charge" Q173-OmniLink. APX 6000 digital radios require Advanced System Keys (ASK-DVN4046A) to be configured to operate on a trunking system.			
ADD: TDMA OPERATION	QA00580	481	$400.00
For APX6000 and APX6000XE, QA00580 requires Q806, H38, Q361. If ordering an APX6000Li, QA00580 requires QA02766. A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.			
ADD: ENABLE BLUETOOTH SOFTWARE	QA00583	481	$150.00
ENH: ENABLE INTERNAL ACTIVATION AND GPS BASIC FUNCTIONALITY	QA00782	481	$100.00
Must have IV&D (Q947) enabled.			
ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01848	655	$5.00
A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.			
ADD: ADVANCED SYSTEM KEY - SOFTWARE KEY	QA01749	855	$0.00
A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking.			
ADD: ADVANCED WACN KEY SUPP DATA	QA02018	855	$5.00
A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.			

6: System Enhancement Options *(Must Select One)*

ADD: PROGRAMMING OVER P25 (OTAP)	G996	481	$100.00
Compatible with P25 Trunking and Conventional Operation. POP25 requires AES encryption for ASTRO Conventional operation. Must have IV&D (Q947) enabled. To do in field POP25 programming must use Advanced System Key (DVN4046A)			
ENH: RADIO TRACE/ REMOTE MONITOR	H43	481	$75.00
Requires Q806 and either H37, H38, or H35.			
ENH: ONE TOUCH/STATUS MSG	H46	481	$75.00
Only compatible with Model 2,5 and 3.5 Radios			
ADD: MULTICAST VOTING SCAN	Q367	481	$200.00
ADD: RADIO PACKET DATA	Q947	481	$200.00
This option is only capable of being used on P25 Digital Conventional and 9600 Trunking Systems. This option is required for IV & D operation.			
ADD:LINK LAYER RADIO AUTHENTICATION	QA01787	481	$100.00
Requires P25 Trunking (Q361)			
ENH: ENHANCED ZONE BANK	QA01788	481	$75.00
This option will increase the channel/talkgroup capacity on a Model 1 from 96 to 870. Zone Up/Zone Down, Zone Bank Up/Zone Bank Down will be unlocked with this option.			
ENH: ENHANCEMENT LEVEL 2	QA01771	481	$200.00
Please reference the Enhancement Level Reference Guide for more details. This option allows for a few parameters (ZONES, CHANNELS, SYSTEMS PERSONALITIES, UCL ENTRIES, VOICE ANNOUNCMENT, ENCRYPTION KEYS) on the mid tier to go to a high tier			
ADD: ACCELEROMETER/ MAN DOWN	QA01843	481	$150.00
ADD: DVRS PSU ACTIVATION	QA00631	655	$100.00
Enables DVRS Enhanced PSU functionality on APX Radios. Requires XTL MSU and Digital Operation.			
ADD: APX Personnel Accountability	Q445	481	$150.00

7: Algorithm Option *(Not Required)*

Description	Nomenclature	APC	Price
ENH: DVP-XL ENCRYPTION	H797	481	$487.00
Compatible with Digital and Analog (25kHZ Only) operations. ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES .			
ENH: MULTIKEY	H889	481	$330.00

ENH: AES/DES,DES-XL,DES-OFB ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES. Incompatible with Q625 and Q629	Q15	481	$799.00

Description	Nomenclature	APC	Price
ENH: MDC & ASTRO P25 OTAR W/ MULTIKEY Incompatible with the H04 option since Tactical OTAR is included with the Q498 option. Tactical OTAR can only be utilized when IV&D is purchased.	Q498	481	$740.00
ENH: DES,DES-XL,DES-OFB ENCRYPTION Compatible with Analog 25KHZ/DES-OFB Digital 12.5kHZ Only. ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES	Q625	481	$599.00
ENH: AES ENCRYPTION ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES	Q629	481	$475.00

8: Antenna

Description	Nomenclature	APC	Price
DEL: DELETE STANDARD ANTENNA	H112	481	($10.00)

9: Battery

DEL: DELETE STANDARD BATTERY Deletes standard battery PMNN4403 for APX6000 or NNTN8092 for APX6000XE	H207	481	($47.00)
ALT: NIMH IMPRES 2100MAH IP67 BATTERY (NNTN7037) The option will delete the standard option and replace with NIMH IMPRES 2100MAH IP67 BATTERY(NNTN7037)	H335	481	$76.00
ALT: NIMH IMPRES 2000MAH FM/CSA IP67 (NNTN7036) The option will delete the standard battery and replace with NIMH IMPRES 2000MAH FM IP67 BATT (NNTN7036)	Q393	481	$95.00
ALT: NIMH IMPRES 2000 MAH FM/CSA DELTA T (NNTN7035) The option will delete the standard battery and replace with LIION 2000 MAH DELTA-T (NNTN7035). This battery is compatible with H499 and meets FM certification.	QA00581	481	$133.00
ALT: LIION IMPRES 4100 MAH FM/CSA IP67 (NNTN7033A) This option will delete the standard battery and replace it with LITHIUM ION 4000MAH IMPRES (NNTN7033). This battery is compatible with H499 and meets FM certification.	QA00582	481	$165.00
ALT: LIION 4200MAH IMPRES DELTA-T This option will delete the standard battery and replace it with LIION 4200MAH IMPRES(NNTN7034). This battery is compatible with H499.	QA00781	481	$115.00
ALT: LIION IMPRES IP67 2900MAH (NNTN7038) This option will delete the standard battery and replace it with LIION IMPRES 2900MAH IP67 (NNTN7038).	QA01837	481	$100.00
ALT: SLIM LIION 2150MAH BATTERY(PMNN)	QA02021	481	$80.00

10: Belt Clip (s)

Model 1.5 comes standard with 2.5" belt clip.

Description	Nomenclature	APC	Price
DEL: DELETE BELT CLIP/ BASIC CARRY HOLDER	H301	481	($10.00)
ADD: APX6000XE BASIC CARRY HOLDER This NEW APX6000XE carry holder will ship std on Model 2 and Model 3 radios.	QA00779	481	$29.00

11: Cable (s)

Description	Nomenclature	APC	Price
ADD: DATA CABLE PMKN4013A-GCAI cable at radio interface and USB connection at other end for computer programming. Please note that the PMKN4012A is NOT compatible with the APX 4000	Q157	655	$75.00

12: Programming

Description	Nomenclature	APC	Price
ENH: FRONT PANEL PROGRAMMING Compatible with model 3.5 radios only	Q53	430	$150.00
ADD: FRONT PANEL PROGRAM (FED GOVT)	Q52	470	$150.00

13: Service Options

Description	Nomenclature	APC	Price
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE Provides 2 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	H685BK	185	$84.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE Provides 3 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	H866AQ	185	$125.00
ADD: 3 YR RSA COMPREHENSIVE Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	HA00022AB	185	$228.00
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	Q664	185	$44.00

ENH:4 YEAR REPAIR SERVICE ADVANTAGE	Q887	185	$182.00
Provides 4 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			

14: Manual

Description	Nomenclature	APC	Price
DEL: USER GUIDE CD	QA01274	481	$0.00
This deletes the user guide CD that ships standard with the radio.			
ADD: DATA LINK MANAGER APP CD-PORTABLES	QA00205	855	$0.00
Option provides the NVN5424 Data CD. Please order this option if you would like the Data CD, and are unable to obtain it through other sources such as MOL.			

15: Packaging

Description	Nomenclature	APC	Price
ADD: SINGLE UNIT PACKING	H842	481	$0.00

Section D: Aftermarket Accessories

Adapters

Description	Nomenclature	APC	Price
APX SURVEILLANCE KEYLOAD A	NNTN7869A	742	$65.00
Description	**Nomenclature**	**APC**	**Price**
APX FPP HW KEY (DONGLE)	NNTN7526	855	$37.00

Antenna

Description	Nomenclature	APC	Price
VHF/GPS ANTENNA	NAR6593A	555	$38.00

Batteries

Description	Nomenclature	APC	Price
ASSEMBLY,BATTERY,BATT IMP FM RUGGEDIZED LIION 4100M 4300T BLK	NNTN7033A	453	$175.00
Dimensions (HxWxD) 5.12" x 2.34" x 1.65"			
ASSEMBLY,BATTERY,BATT IMP STD RUGGEDIZED LIION 4200M 4400T BLK	NNTN7034A	798	$160.00
Dimensions (HxWxD) 5.13" x 2.34" x 1.65"			
APX 7000 IMPRES NIMH 2000MAH RUGGEDIZED PLUS FM BATTERY	NNTN7035	798	$147.00
Motorola now makes batteries to an even more stringent military standard for customers who require a higher level of submersibility protection - MIL-STD-810E, Method 512.3 Immersion, which are referred to as Ruggedized PLUS. Dimensions (HxWxD) 5.07" x 2.34" x 1.57"			
APX 7000 IMPRES NIMH 2000MAH SUBMERSIBLE (IP67) FM BATTERY	NNTN7038	798	$142.00
Dimensions (HxWxD) 5.34" x 2.34" x 1.57"			
APX 7000 IMPRES NIMH 2100MAH SUBMERSIBLE (IP67) BATTERY	NNTN7037	798	$125.00
Dimensions (HxWxD) 5.07" x 2.34" x 1.57"			
BATT IMP STD IP67 LIION 2900M 3100T BLK	NNTN7038	798	$140.00
Dimensions (HxWxD) 3.07" x 2.34" x 1.65"			
LIION IMPRES 2150MAH IP67 BATT	PMNN4403	453	$125.00
Dimensions (HxWxD) 3.39" x 2.34" x 1.46"			
APX 7000 IMPRES NIMH 2100MAH RUGGEDIZED PLUS BATTERY	NNTN7573	798	$130.00
Motorola now makes batteries to an even more stringent military standard for customers who require a higher level of submersibility protection - MIL-STD-810E, Method 512.3 Immersion, which are referred to as Ruggedized PLUS. Dimensions (HxWxD) 5.07" x 2.34" x 1.57"			
BATT IMP FM R LI ION 2300M 2350T	NNTN8092	453	$140.00
This Impress 2300MAH Lithium Ion battery is both FM certified and Ruggedized PLUS (submersible). The battery is offered in a small form factor. It is the standard battery offered with the XE(eXtrEme) radio products. Dimensions (HxWxD): 3.07" x 2.34" x 1.65"			

Battery Fleet Manegement

Description	Nomenclature	APC	Price
FLEET MANAGEMENT CHRGR INTERFACE UNIT	NNTN7677A	785	$80.00
Multi-Unit Charger Interface Unit, attaches to an APX or XT6 IMPRES multi-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to IMPRES Battery Fleet Management.			
IMPRES BATTERY DATA READER	NNTN7392	785	$250.00
Provides IMPRES battery users ability to access key usage data via PC. Compatible w/all IMPRES batteries (HT/PRO,TRBO & APX adaptar included)			
FLEET MANAGEMENT RELEASE 1.2	NNTN7876C	785	$10.00

CHARGR INTRFCE UNT GEN1 IMPRES SUC Single-Unit Charger Interface Unit , attaches to an APX IMPRES single-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to the IMPRES Battery Fleet Management.	NNTN8045A	785	$35.00
NA FLEET MANAGEMENT LICENSE KEY	HKVN4036A	785	$489.00

Bluetooth Mission Critical Wireless

Description	Nomenclature	APC	Price
EARPIECE W/9.5" CABLE	NTN2575A	742	$151.00
EARPIECE W/12" CABLE FM Certified; MCW BT; Requires QA00583 to be ordered in the APX radio	NTN2572A	742	$151.00
ASSEMBLY,ACCESSORY,WIRELESS ACCY KIT, NFP, 9.5" CABLE FM Certified MCW BT Requires QA00583 to be ordered in the APX radio	NTN2573B	742	$295.00
WIRELESS 2.0 COMMPORT IC MODULE	NTN2571B	742	$139.00
1-WIRE EARBUD,29CM CORD,BLACK	NNTN8294A	742	$40.00
1-WIRE EARBUD,116CM CORD,BLACK	NNTN8295A	742	$40.00
ACCY,KIT,EAR PIECE,2W SHORT CORD,BL	NNTN8298A	742	$160.00

Bluetooth, Mission Critical Wireless Replacement Parts

Description	Nomenclature	APC	Price
ACCY,SMPS,MICRO USB,FIXED,CLP,US	PMPN4009A	903	$21.00
COMMPORT EAR TUBES (PACK OF 10)	RLN5037	115	$28.00
COMMPORT MAINTENANCE KIT Includes Replacement Ear Tubes (qty 10), Windscreens (qty 2) and Microphone Seal Strips (qty 10).	NTN8821	115	$48.00
COMMPORT EAR STRAP (PACK OF 10)	NTN8988A	115	$17.25
EARTIPS, REPLACEMENT	NNTN8299A	742	$3.15

Belt Clip(s)

Description	Nomenclature	APC	Price
3" PLASTIC BELT CLIP ATTACHMENT	HLN6875A	721	$12.00
2.5" PLASTIC BELT CLIP ATTACHMENT 2.5? Belt Clip is compatible with all APX subscribers except the APX4000 series	NTN8266B	476	$12.00

Belt Loops

Description	Nomenclature	APC	Price
APX 7000 2.5" REPLACEMENT SWIVEL BELT LOOP	PMLN5407	271	$12.00
APX 7000 2.75" REPLACEMENT SWIVEL BELT LOOP	PMLN5408	795	$12.00
APX 7000 3" REPLACEMENT SWIVEL BELT LOOP	PMLN5409	271	$12.00

Carrying Case(s)

Note: The APX 6000XE and APX 6000 do not have leather carry cases available for the NNTN7035, NNTN7036, NNTN7037 and NNTN7573 batteries.

Description	Nomenclature	APC	Price
APX6000XE 2.75SWBL2900,2300&2150MAH APX6000XE Carry Case	PMLN5875	271	$85.00
APX6000XE 3 FIXBL 2900,2300&2150MAH	PMLN5876A	795	$82.00
APX6000XE CC 2.75 SWL BL 4200MAH	PMLN5877A	795	$85.00
APX6000XE CC 3 FIX BL 4200MAH	PMLN5879A	795	$62.00
APX6000XE UNIV C HOLDER	PMLN5880A	795	$29.00

Charger

Description	Nomenclature	APC	Price
IMPRES CHG MU MACKINAW US/NA/CA/LA	NNTN7065B	785	$788.00
IMPRES CG MUD MACKINAW US/NA/CA/LA	NNTN7073B	785	$1,350.00
APX DUAL UNIT CHARGER WITHOUT DISPLAY This next generation IMPRES charger provides advanced features, including the ability to turn on/off reconditioning, reduced reconditioning time and improved energy efficiency.	NNTN7586	795	$295.00
CHR IMP DISP DUC EXT US/NA/CA/LA	NNTN7593A	785	$375.00
APX CHARGER INSERT ADAPTER FOR XTS MULTI-UNIT CHARGER Six inserts will ship in one package. Requires charger containing Software Version 3.4 or greater.	NNTN7686A	795	$207.00
APX CHARGER INSERT ADAPTER FOR XTS SINGLE-UNIT CHARGER Only 1 SUC Insert will ship. Requires charger containing Software Version 3.4 or greater.	NNTN7687A	795	$45.00
APX TRAVEL CHARGER	RLN8434A	785	$101.00
APX 7000 IMPRES CG SU APX7000 US/NA/CA/LA	WPLN7080	795	$125.00
IMPRES VEHICULAR CHARGER (FULL KIT) APX Portable Vehicular Charger (NNTN7624B supports APX XE subscriber line as well)	NNTN7824B	785	$390.00

CPS

NEO PORT PROG CABLE	PMKN4012B	037	$75.00
APX DMR PORT PROG CABLE PROGRAMMING, TEST & ALIGNMENT CABLE	PMKN4013C	037	$92.00

Earpieces

Description	Nomenclature	APC	Price
RECEIVE-ONLY FOAM EARBUD WITH 3.5MM PLUG - INTRINSICALLY SAFE (FM) When used with MTP3000 models, to be used with remote speaker microphones PMMN4078A, PMMN4072A and PMMN4074A	AARLN4885	742	$25.00
EAR RCVR W/COIL CBL&3.5MM PLUG	WADN4190B	742	$43.00

Headsets

Description	Nomenclature	APC	Price
IMPRES TEMPLE TRANSDUCER FM Certified	PMLN5101A	742	$228.00
HEAVY DUTY HEADSET PMLN5275B FM Certified	PMLN5275B	742	$485.00
CORE L/W HEADSET FM Certified	RMN5058A	742	$99.00
RX/TX BOOMLESS TEMPLE TRANSDUCER Temple Transducer Headset will ONLY work with: Microphone Compatibility HMN4101, HMN4103, HMN4104.	RMN5116A	742	$246.00

Remote Speaker Microphones - RSM's

Description	Nomenclature	APC	Price
IMPRES RSM DSPLY W JACK, W CHNL	HMN4104A	795	$375.00
IMPRES XE RSM, BLACK	NNTN8203ABLK	372	$335.00
APX7000 IMPRES RSM, NOISE CANC. EMERGENCY BUTTON 3.5MM JACK IP54	PMMN4062A	795	$107.00
APX IMPRES RSM W/VOL, IP57	PMMN4065A	795	$97.00
IMPRES RSM, 3.5MM AUDIO JACK	PMMN4069A	795	$110.00
RSM INTERFACE CABLE, NEXUS 4-POLE	PMKN4112A	795	$53.00
RSM INTERFACE CABLE, NEXUS 5-POLE	PMKN4107A	795	$53.00
DISPLAY RSM GCAI, REPLACEABLE CABLE	3075336B17	372	$90.00
RX ONLY EARPIECE W/TRANSLUCENT TUBE	RLN6424B	742	$80.00

Surveillance Kits, Wired

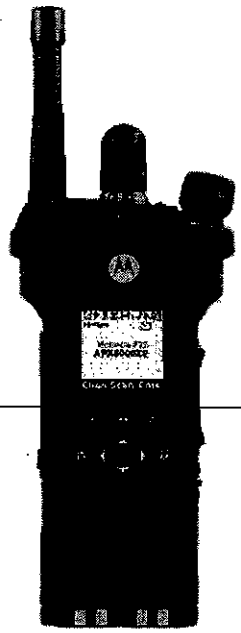
Description	Nomenclature	APC	Price
RUBBER EAR TIP, CLEAR	87009254001	795	$9.95
SURVEILLANCE LOW NOISE KIT	RLN5886A	742	$20.00
REPLACEMENT CLEAR ACOUSTIC TUBE	0105954U29	742	$7.90
SURVEILLANCE HIGH NOISE KIT	RLN5887A	742	$32.00
SPKR MIC W XLOAD EARPIECE Exceeds OSHA limits. REQUIRES NTN5664 Audio Adapter. FACTORY MUTUAL APPROVED.	ZMN6039	742	$190.00
2-WIRE SURVEILLANCE KIT WITH MICROPHONE AND PTT COMBINED - EXTRA LOUD Exceeds OSHA limits. Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8513 adapter	ZMN6036	476	$149.00
3-WIRE SURVEILLANCE KIT WITH MICROPHONE & PTT COMBINED, BEIGE Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8513 adapter	ZMN6031	742	$177.00
2-WIRE SURVEILLANCE KIT WITH MICROPHONE AND PTT COMBINED Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8513 adapter	ZMN6032	476	$143.00

Data Compiled 16-May-2013 using DUP and all prices in USD

ASTRO® Digital APX 6000XE™ Portable Series

700/800 Band

P25 Phase 2 Single Band Capable Radio



******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749), HARDWARE KEY (QA01648), OR WACN KEY SUPPLEMENTAL DATA (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY or QA02018- WACN KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. ******

******NOTE: The APX6000XE ships standard as a RUGGED (Delta T submersion) portable and with FM certification. Changing the standard battery configuration may affect the certification of the radio i.e. if a non-FM battery is chosen, the radio will not receive FM certification****

Ship Card

Features

All ASTRO Digital APX 6000XE models include the following features:

- Dual Microphone
- 0.5 Watt Rated Audio
- Integrated GPS Hardware Capable*
- Integrated Bluetooth Hardware Capable*
- Detachable Belt Clip for Top Display Model
- FM LiIon RUGGED 2300 mAh Battery (NNTN8092)
- 3 Programmable Side Buttons
- Orange Programmable Button
- 16 Position Mode Rotary Select Switch
- Angled On/Off Volume Knob
- Low Battery Alert Tone
- Noise Cancellation Software

- Antenna (Dependent on Frequency Band and Type)
- Intelligent Lighting
- ADP Privacy - ships standard with Single Key
- 1 Top Mounted Programmable 3 Position Toggle Switch
- Top Display: 1 line of text, 1 line of icons, 0 menu lines
- Delta T and FM ship standard with every radio model

ASTRO Digital APX 6000 Limited Keypad and Full Kepad with Dual Display Model also includes:

- Universal Carry Holder
- Unified Call List
- Front Color Display: 4 lines of text, 2 lines of icon
- Radio Profiles
- Full Keypad: 4 x 3 alpha-numeric 3 programmable button, 4 way navigation, home and data buttons

*** Must purchase Software to ENABLE**

*** All APX6000 Portable Radios ship standard with SW and HW ADP Privacy**

All ASTRO Digital APX 6000 Portables are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the current RF capabilities of the radio)

http://ecat.comm.mot.com/ecat/pricebooks/dup/ASK.htm

General Information

The ASTRO Digital APX 6000 Portable Line offers **THREE** different radio hardware models:

Hardware Model	Modes	Alphanumeric Display Lines/Characters	Keypad	Navigation Pad
ASTRO APX 6000 Top Display	96	8 (top)	-	No
ASTRO APX 6000 Limited Keypad	870	14 (front) & 8 (top)	-	Yes
ASTRO APX 6000 Full Keypad	870	14 (front) & 8 (top)	4 x 3	Yes

Operating Modes

ASTRO Digital APX 6000 Radio Models are capable of operating in four different voice communication modes:

- Normal Analog (clear voice)
- 3.6KB ASTRO Digital (both clear and coded voice)
- 9.6 KB ASTRO 25 Digital (both Clear and Coded voice)
- 9.6KB 12.5kHz 2 slot digital TDMA (both clear and coded voice).
- Will be capable of APCO25 Phase 2 functionality in future software releases.

TDMA

FDMA (Frequency Division Multiple Access) is a proven technology that is widely used today in radio systems and is part of APCO 25 Project 25 Phase 1 standard. FDMA carries one call per channel. TDMA (Time Division Multiple Access) will be part of P25 Phase 2 standard and provides double the voice capacity as 2 calls can share 1 channel. Customers can add more users to their systems without the need of additional frequencies or infrastructure. The APX radios support both P25 Phase 1 and TDMA technologies seamlessly. Using Motorola's unique Dynamic Dual Mode (DDM) capability, the radios dynamically switch between FDMA and TDMA without the user having to change channels. This provides interoperability on demand with existing and future networks.

FLASHport AFTERMARKET UPGRADES

The ASTRO Digital APX 6000 Portable Series Radios are part of the FLASHport Program. This means that ASTRO Digital APX 6000 hardware models can be loaded with different software packages that provide the features and functionalities that our customers require.

System Enhancement Options can be loaded at the time of radio purchase or at a later date through the use of software field upgrades (a USB cable is required for all software upgrades.) The ASTRO Digital APX 6000 portable can be upgraded electronically in the field with new features in the current system or to new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

Ordering Requirements

Ordering procedure is as follows...

Steps	Required Options	Comments
		APX Digital Portable Radio-
1	**APX 6000 700/800 Main Model**	a. H98UCD9PW5AN b. H98UCF9PW6AN c. H98UCH9PW7AN
2	**APX 6000XE 700/800 Option**	a. QA02006
3	**Operation Mode**	a. Q241; Analog Operation b. Q806; ASTRO digital CAI operation
4	**System Enhancement Software**	a. H35; Conventional Operation b. H37; Smartnet Operation c. H38; Smarzone Operation d. Q173; Smartzone Omnilink (non-P25) e. Q361; P25 9600 Baud Trunking f. QA00580; TDMA

1. Order the APX 6000 Portable Series as the main line item.

- Each hardware model MUST be ordered with one operation mode.
- Default battery is LiIon 2150mAh (-20°c)
- Default belt clip for top display models and carry holder for limited keypad and full keypad models
- Default Antenna is the single appropriate antenna for your RF configuration.

2. Select any other system enhancement options you desire.

- Note - APX Radio ships with 12 month standard warranty.

Common Software Features Supported By

	H38 "SmartZone"			
	"Analog Operation"(Q241/H38)	"ASTRO Digital"(Q806/H38)	"ASTRO Digital"(H38/Q806/Q361)	"TDMA"(QA00580AA)
	Non-Project 25 (3600 Baud)	Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	TDMA OPERATION
RADIO WIDE FEATURES				
Maximum Modes				
ASTRO Digital APX 6000 Top Display	96	96	96	96
ASTRO Digital APX 6000 Limited				

Keypad	870	870	870	870
ASTRO Digital APX 6000 Full Keypad	870	870	870	870
Analog and Digital Operation	Yes	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable	No	Yes (Digital Only)	Yes (Digital Only)	Yes (Digital Only)
One Touch Operation	Yes	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes	Yes
Surveillance Mode	Yes	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes	Yes
Radio Lock	Yes	Yes	Yes	Yes
Smart Battery	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified above.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
DTMF Signaling	Future	Future	Future	Future
Quick-Call Signaling	Future	Future	Future	Future
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Conventional Interoperable Features when used in the ASTRO Digital CAI Mode (Q806).				
Unaddressed Voice Call (Dispatch Call)	Yes	Yes	Yes	Yes
Talk Group Call	Yes	Yes	Yes	Yes
Group Call Alert™	Yes	Yes	Yes	Yes
Talk Group Identification (TGID)	Yes	Yes	Yes	Yes
Selective Call (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
PTT ID (Individual Identification)	MDC-1200 Only	Yes	Yes	Yes
Call Alert Encode/Decode	MDC-1200 Only	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	MDC-1200 Only	Yes	Yes	Yes
Telephone Interconnect	Yes	Yes	Yes	Yes
Manual Phone Number Entry	Dual Display Only	Dual Display Only	Dual Display Only	Dual Display Only
Selective Radio Inhibit	MDC-1200 Only	Yes	Yes	Yes
Radio Check	MDC-1200 Only	Yes	Yes	Yes

Status/Message	MDC-1200 Only	Yes	Yes	Yes
Trunking Type II Only Features				
Maximum Number of Trunked Systems-20	Yes	Yes	Yes	Yes
Talkgroup Calls	Yes	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes	Yes
Analog/Digital Dual Mode Scan	No	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only	Status Only
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes	Yes
Remote Monitor/Radio Trace	Yes	Yes	Yes	Yes
Reprogram Request	Yes	Yes	Yes	Yes

H38 "SmartZone"				
	"Analog Operation" (Q241)	"ASTRO Digital" (Q806)	"ASTRO Digital" (H37/Q806/Q361)	"TDMA" (QA00580AA)
		Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	Project 25 (TDMA Operation)
Trunking Type II Only Features				
Voice on Control	-	-	-	-
SmartZone Automatic Site Registration	Yes	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes	Yes
SmartZone Preferred Site	Yes	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the APX 6000 portable series. Separation of frequencies can be as wide as the allowable band per radio model with no degradation of any performance specifications. If an incorrect antenna is used, degraded performance may be experienced.

ZONED OPERATION

This option converts MODE-ONLY ASTRO Digital APX 6000 portables to Zone Operation radios.

For Top Display radios, a maximum of 16 channels (conventional RX and TX pairs or trunking talkgroups) are accessible in a zone. There is a maximum of six accessible zones (96 channels) when zone selection operation is programmed on the 3 position toggle switch and the Zone Bank feature is programmed on a button. The Zone Bank feature allows the 3 position toggle switch to access zones 1-3 or 4-6.

For the Top Display radio there is a maximum of 6 accessible zones, and 16 accessible channels per zone with the overall maximum of 96 channels. For the Dual Display Radios with Limited keypad or Full Keypad, there is a maximum of 50 zones, 625 channels per zone with the overall maximum of 870 channels. These radios provide "ZONE" and "CHAN" menus that allows access to zones and

channels not accessible via the switches.

*Note: Top Display Radio codeplugs can be programmed with the same zone/channel configuration as the Dual Display Radios even though not all of the zones and channels are accessible. This is useful for having a common zone/channel template that can be shared between the different radio models.

PROJECT 25 ENCRYPTION

The mode of operation is programmed on a channel-by-channel basis. With the coded/clear switch set to the clear mode, the ASTRO Digital APX6000 radio is capable of transmitting clear analog voice or clear (unencrypted) ASTRO Digital voice, depending on the channel programming. With the coded/clear switch set to the coded mode, the ASTRO Digital APX 6000 radio will transmit ASTRO Digital encryption depending on the channel programming. ASTRO Digital encryption provides secure communications. ASTRO Digital Encryption (operation in encrypted mode while also operation in 3.6KB or 9.6KB and TDMA ASTRO mode) is capable of XL type encryptions; ASTRO Digital Encryptions does not operate with non-XL encryptions.

An encryption option is not required for either clear analog operation or clear ASTRO Digital operation. Encryption can be ordered with the ASTRO Digital APX 6000 radio either as a factory installed option or separate from the radio for later field installation. ASTRO Digital APX 6000 radio functions include selected ASTRO digital signaling and digital speech coding.

When ordering any of the Encryption Algorithms:

- The DES-OFB and AES encryption algorithms offered are compliant with digital Project 25 standards and does not support analog encryption operation.
- **Requires** the ASTRO Digital CAI (Q806) to operate the DES-OFB and AES encryption.

When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

- Encryption Algorithms can be ordered later via Flash Port.

FIPS 140-2 Compliance

Encryption Modules equipped with AES are FIPS 140-2 compliant. Details regarding the certification, and copies of the relevant certificates, can be obtained on the NIST website at: http://csrc.nist.gov/groups/STM/cmvp/validation.html.

Further information regarding FIPS 140-2 certification may be found using the following link - FIPS 140-2 Crypto Module Validation Program (CMVP) http://csrc.nist.gov/groups/STM/cmvp/index.html

FM INFORMATION

APX 6000 Portable Radio when properly equipped with options Q393 OR QA00581 OR QA00582 OR QA02818 are Factory Mutual (FM/CSA) Approved as intrinsically safe for use in Div 1, Class I , Groups C,D, Class II groups E, F, G, Class III Div 2, Class I A, B,C,D.

ASTRO Text Messaging Service

ASTRO Text Messaging Service will be available on APX 6000 Dual Display Portable radios. Text Messaging Service (TMS) allows subscriber users to send and receive text messages to other subscribers or dispatch operators. Users can select messages and addresses from a predefined list or enter freeform text messages and addresses via the keypad. Text Messaging Service is available on ASTRO P25 Conventional and Trunked IV&D Systems and Subscribers.

Text Message is NOT supported on APX 6000 (Model I) Top Display Portable radio.

Ordering ASTRO Text Messaging for APX 6000 Portable Requires:

- APX 6000 Dual Display
- ASTRO Digital CAI Operation (Q806)
- P25 Conventional (H35)
- Packet Data Interface (Q947)

OR

- APX 6000 Dual Display

- ASTRO Digital CAI Operation (Q806)
- SmartZone Operation (H38)
- ASTRO Project 25 Trunking Software (Q361)
- Packet Data Interface (Q947)

NOTE: *There is no specific option to order for the Text Messaging Service on the subscribers as the functionality is included in the Packet Data option.*

Outdoor Personnel Location Global Positioning Satellite (GPS) Feature

The personnel outdoor location tracking GPS feature enables a dispatcher the ability to locate on-foot patrols and out of the vehicle officers who are involved in life threatening situations. The radio user's GPS position information is sent over the ASTRO 25 Integrated Voice & Data (IV&D) network and is delivered to the dispatch operator using a third party mapping display application at the dispatch center *(Mapping Application is not yet available through Motorola at this time, however an Application Developers Tool Kit is available for 3rd party vendors to use to modify existing applications. See link below for more details.)* On the Dual Display model only it is possible to the user to determine their own location (latitude/longitude) through the use of the location menu.

During normal operation the radio battery capacity will be reduced by 10% to 15%.

In order to obtain an initial GPS fix position, the radio must be located in an open sky, outdoor environment with no barriers that could affect the signal around you or above you. During this initial fix, the radio should NOT be worn on the body as this may affect the process of acquiring signal and/or add additional time to first fix.

NOTE LIMITATIONS OF USE:

GPS works best in an open sky (clear view of the sky with no obstructions) environment. Due to the limitations of the technology, there are certain situations which prevent GPS coverage. These situations include but are not limited to:

- Underground locations (tunnels, subways, etc.)
- Inside of buildings, elevators, parking garages, trains, other covered vehicles, etc.
- Under metal or concrete roof structures
- Urban canyons (between tall buildings or under dense tree coverage)

***GPS Performance may be degraded when the radio is worn against the body and/or against the body within a vehicle.

Due to the limitations mentioned above, GPS should only be utilized as a method to assist the user with location information but not as a means for mission critical communication. Therefore, in any emergency situation, the location should always be verbally reported to the dispatcher.

For further information regarding System Requirements, go to the location solutions price pages at:
http://ecat.comm.mot.com/ecat/pricebooks/dup/ALOCATION.htm

Ordering GPS for APX 6000 Portable Requires:

- Enable Internal GPS Operation (QA00782)
- Packet Data Interface (Q947)

700/800 MHz SELF-QUIETING SPURS				
700/800 Models (1.5, 2.5, 3.5)	Frequencies	Model 1.5	Model 2.5	Model 3.5
700 MHz	767.95	X	X	X
800 MHz	855.95		X	X
	863.95	X	X	X

CPS INFORMATION

****Please note that a NEW version of CPS (RVN5224) is required for initial customer orders for this product. This new version of CPS is required for the APX radio shipments. ****

FCC Information

Band/Model	Power Output	Transmitter Certification	Emissions	Applicable Rules
700/800 (764-870 MHz)	700 - 1 to 2.5W 800 - 1 to 3W	AZ489FT5863	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 20K0F1E	90

Ordering Guide

Enhancement Level Reference Guide

Fleet Management Ordering Guide

APX Family Brochure

Spec Sheet

RSA Comprehensive

RSA

Portable Accessories Catalog

PSM User Guide

Radio Applications \ Advanced System Key

Section A: Required Main Model and Options

For standard Radio Operation Steps 1 - 6

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

Main Model *(Must Select One)*

Description	Nomenclature	APC	Price
APX6000 7/800 MHZ MODEL 1.5 PORTABLE	H98UCD9PW5 N	481	$1,900.00
APX6000 700/800 MODEL 2.5 PORTABLE	H98UCF9PW6 N	481	$2,200.00
APX6000 700/800 MODEL 3.5 PORTABLE	H98UCH9PW7 N	481	$2,600.00

Ruggedized Housing

Description	Nomenclature	APC	Price
ENH: APX6000XE RUGGED RADIO	QA02006	756	$800.00

This Option will pull in the XE (extreme) control top with larger knobs and a display for fire users. The carry cases are diffarent for this radio so be sure to choose the right APX6000XE case if you do not want to use the plastic carry holder that ships std with the Model 2 and 3 radios. This option will also pull in an FM battery (NNTN8092)and will include radio FM certification. The QA02006 option includes Delta-T standard.

Housing

Description	Nomenclature	APC	Price
ALT: PUBLIC SAFETY YELLOW	H64	481	$25.00
APX6000 comes standard IP67 unless ordered with H499 Delta T option. APX6000XE comes Delta T standard.			
ALT: HIGH IMPACT GREEN	QA01427	481	$25.00
APX6000 comes standerd IP67 unless the H499 Delta-T option is ordered. APX6000XE comes standerd Delta-T.			

Operation Mode *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: ANALOG OPERATION	Q241	481	$0.00
Requires either a H35, H37, or H38			
ADD: ASTRO DIGITAL CAI OPERATION	Q806	481	$515.00
Requires either a H35, H37, or H38			

System Enhancement Software *(Must Select One)*

ADD: CONVENTIONAL OPERATION	H35	481	$500.00
ADD: SMARTZONE OPERATION	H38	481	$1,200.00
A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.			
ADD: SMARTZONE OMNILINK (NON-P25)	Q173	481	$200.00
Requires H38 SmartZone and Q806 Digital Operation (required for 3600 baud only trunked systems.) APX 6000 digital radios require Advanced System Keys (ASK - DVN4046A) to be configured to operate on a trunking system.			
ADD: P25 9600 BAUD TRUNKING	Q361	481	$300.00
Requires H38 and Q806. INCLUDED at "NO Charge" Q173-OmniLink. APX 6000 digital radios require Advanced System Keys (ASK- DVN4046A) to be configured to operate on a trunking system.			
ADD: TDMA OPERATION	QA00580	481	$400.00
For APX6000 and APX6000XE, QA00580 requires Q806, H38, Q361. If ordering an APX6000Li, QA00580 requires QA02756. A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.			
ADD: ENABLE BLUETOOTH SOFTWARE	QA00583	481	$150.00
ENH: ENABLE INTERNAL ACTIVATION AND GPS BASIC FUNCTIONALITY	QA00782	481	$100.00
Must have IV&D (Q947) enabled.			
ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648	655	$5.00
A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.			
ADD: ADVANCED SYSTEM KEY - SOFTWARE KEY	QA01749	655	$0.00
A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking.			

System Enhancement Options *(Optional)*

ADD: PROGRAMMING OVER P25 (OTAP)	G996	481	$100.00
Compatible with P25 Trunking and Conventional Operation. POP25 requires AES encryption for ASTRO Conventional operation. Must have IV&D (Q947) enabled. To do in field POP25 programming must use Advanced System Key (DVN4046A)			
ENH: RADIO TRACE/ REMOTE MONITOR	H43	481	$75.00
Requires Q806 and either H37, H38, or H35.			
ENH: ONE TOUCH/STATUS MSG	H46	481	$75.00
Only compatible with Model 2.5 and 3.5 Radios			
ADD: MULTICAST VOTING SCAN	Q387	481	$200.00
ADD: RADIO PACKET DATA	Q947	481	$200.00
This option is only capable of being used on P25 Digital Conventional and 9600 Trunking Systems. This option is required for IV & D operation.			
ADD:LINK LAYER RADIO AUTHENTICATION	QA01767	481	$100.00
Requires P25 Trunking (Q361)			
ENH: ENHANCED ZONE BANK	QA01768	481	$75.00
This option will increase the channel/talkgroup capacity on a Model 1 from 96 to 670. Zone Up/Zone Down, Zone Bank Up/Zone Bank Down will be unlocked with this option.			

ENH: ENHANCEMENT LEVEL 2	QA01771	481	$200.00
Please reference the Enhancement Level Reference Guide for more details. This option allows for a few parameters (ZONES, CHANNELS, SYSTEMS PERSONALITIES, UCL ENTRIES, VOICE ANNOUNCMENT, ENCRYPTION KEYS) on the mid tier to go to a high tier			
ADD: ACCELEROMETER/ MAN DOWN	QA01843	481	$150.00
ADD: DVRS PSU ACTIVATION	QA00631	655	$100.00
Enables DVRS Enhanced PSU functionality on APX Radios. Requires XTL MSU end Digital Operation.			
ADD: APX Personnel Accountability	Q445	481	$150.00

Algorithm Option *(Not Required)*

Description	Nomenclature	APC	Price
ENH: DVP-XL ENCRYPTION	H797	481	$487.00
Compatible with Digital and Analog (25kHZ Only) operations. ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES .			
ENH: MULTIKEY	H869	481	$330.00
ENH: AES/DES,DES-XL,DES-OFB	Q15	481	$799.00
ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES. Incompatible with Q625 and Q629			
Description	**Nomenclature**	**APC**	**Price**
ENH: MDC & ASTRO P25 OTAR W/ MULTIKEY	Q498	481	$740.00
Incompatible with the H04 option since Tactical OTAR is included with the Q498 option. Tactical OTAR can only be utilized when IV&D is purchased.			
ENH: DES,DES-XL,DES-OFB ENCRYPTION	Q625	481	$599.00
Compatible with Analog 25kHZ/DES-OFB Digital 12.5kHZ Only. ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES			
ENH: AES ENCRYPTION	Q629	481	$475.00
ADP Privacy ships standard with Single Key. Multikey is required for multiple algorithms, such as ADP/AES or ADP/DES			

Antenna

Description	Nomenclature	APC	Price
DEL: DELETE STANDARD ANTENNA	H112	481	($10.00)
Description	**Nomenclature**	**APC**	**Price**
ADD: GPS STUBBY ANTENNA (NAG4000)	QA00785	481	$18.00
Deletes Standard Antenna and ADDS GPS ONLY antenna.			

Battery

DEL: DELETE STANDARD BATTERY	H207	481	($47.00)
Deletes standard battery PMNN4403 for APX6000 or NNTN8092 for APX6000XE			
ALT: NIMH IMPRES 2100MAH IP67 BATTERY (NNTN7037)	H335	481	$78.00
The option will delete the standard option and replace with NIMH IMPRES 2100MAH IP67 BATTERY (NNTN7037)			
ALT: NIMH IMPRES 2000MAH FM/CSA IP67 (NNTN7036)	Q393	481	$95.00
The option will delete the standard battery and replace with NIMH IMPRES 2000MAH FM IP67 BATT (NNTN7036)			
ALT: NIMH IMPRES 2000 MAH FM/CSA DELTA T (NNTN7035)	QA00581	481	$133.00
The option will delete the standard battery and replace with LIION 2000 MAH DELTA-T (NNTN7035). This battery is compatible with H499 and meets FM certification.			
ALT: LIION IMPRES 4100 MAH FM/CSA IP67 (NNTN7033A)	QA00582	481	$165.00
This option will delete the standard battery and replace it with LITHIUM ION 4000MAH IMPRES (NNTN7033). This battery is compatible with H499 and meets FM certification.			
ALT: LIION 4200MAH IMPRES DELTA-T	QA00781	481	$115.00
This option will delete the standard battery and replace it with LIION 4200MAH IMPRES(NNTN7034). This battery is compatible with H499.			
ALT: LIION IMPRES IP67 2900MAH (NNTN7038)	QA01837	481	$100.00
This option will delete the standard battery and replace it with LIION IMPRES 2900MAH IP67 (NNTN7038).			
ALT:LIION IMPRES FM/CSA 2300M (NNTN8092)	QA02818	481	$50.00
This option will delete the standard battery and replace it with LIION IMPRES 2300M (NNTN8092). This option is compatible with H499 and meets FM certification.			
ALT: SLIM LIION 2150MAH BATTERY(PMNN)	QA02021	481	$80.00

Belt Clip (s)

Model 1.5 comes standard with 2.5" belt clip.

Description	Nomenclature	APC	Price
DEL: DELETE BELT CLIP/ BASIC CARRY HOLDER	H301	481	($10.00)
ADD: APX6000XE BASIC CARRY HOLDER	QA00779	481	$29.00
This NEW APX6000XE carry holder will ship std on Model 2 and Model 3 radios.			

Cable (s)

Description	Nomenclature	APC	Price
ADD: DATA CABLE	Q157	655	$75.00
PMKN4013A-GCAI cable at radio interface and USB connection at other end for computer programming. Please note that the PMKN4012A is NOT compatible with the APX 4000			

Programming

Description	Nomenclature	APC	Price
ENH: FRONT PANEL PROGRAMMING	Q53	430	$150.00
Compatible with model 3.5 radios only			
ADD: FRONT PANEL PROGRAM (FED GOVT)	Q52	470	$150.00

Service Options

Description	Nomenclature	APC	Price
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	H8858K	185	$84.00
Provides 2 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	H886AQ	185	$125.00
Provides 3 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ADD: 3 YR RSA COMPREHENSIVE	HA00022AB	185	$228.00
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	Q884	185	$44.00
Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH:4 YEAR REPAIR SERVICE ADVANTAGE	Q887	185	$162.00
Provides 4 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			

Manual

Description	Nomenclature	APC	Price
DEL: USER GUIDE CD	QA01274	481	$0.00
This deletes the user guide CD that ships standard with the radio.			
ADD: DATA LINK MANAGER APP CD-PORTABLES	QA00205	655	$0.00
Option provides the NVN5424 Data CD. Please order this option if you would like the Data CD, and are unable to obtain it through other sources such as MOL.			

Packaging

Description	Nomenclature	APC	Price

ADD: SINGLE UNIT PACKING	H842	481	$0.00

Section D: Aftermarket Accessories

Adapters

Description	Nomenclature	APC	Price
APX SURVEILLANCE KEYLOAD A	NNTN7869A	742	$65.00
APX FPP HW KEY (DONGLE)	NNTN7526	655	$37.00

Antenna

Description	Nomenclature	APC	Price
APX 7000 700/800- GPS ANTENNA	NAF5085A	555	$45.00
APX 7000 GPS STUBBY ANTENNA	NAG4000	555	$18.00

This antenna is needed when a user has a Public Safety Microphone attached to the radio and still requires GPS capability. Attaches to the APX radio directly and is only used when the radio is operating in a single band configuration of UHF or 700/800 MHz.

Batteries

Description	Nomenclature	APC	Price
ASSEMBLY,BATTERY,BATT IMP FM RUGGEDIZED LIION 4100M 4300T BLK	NNTN7033A	453	$175.00
Dimensions (HxWxD) 5.12" x 2.34" x 1.85"			
ASSEMBLY,BATTERY,BATT IMP STD RUGGEDIZED LIION 4200M 4400T BLK	NNTN7034A	798	$160.00
Dimensions (HxWxD) 5.13" x 2.34" x 1.65"			
APX 7000 IMPRES NIMH 2000MAH RUGGEDIZED PLUS FM BATTERY	NNTN7035	798	$147.00
Motorola now makes batteries to an even more stringent military standard for customers who require a higher level of submersibility protection - MIL-STD-810E, Method 512.3 Immersion, which are referred to as Ruggedized PLUS. Dimensions (HxWxD) 5.07" x 2.34" x 1.57"			
APX 7000 IMPRES NIMH 2000MAH SUBMERSIBLE (IP67) FM BATTERY	NNTN7036	798	$142.00
Dimensions (HxWxD) 5.34" x 2.34" x 1.57"			
APX 7000 IMPRES NIMH 2100MAH SUBMERSIBLE (IP67) BATTERY	NNTN7037	798	$125.00
Dimensions (HxWxD) 5.07" x 2.34" x 1.57"			
BATT IMP STD IP67 LiION 2900M 3100T BLK	NNTN7038	798	$140.00
Dimensions (HxWxD) 3.07" x 2.34" x 1.85"			
LIION IMPRES 2150MAH IP67 BATT	PMNN4403	453	$125.00
Dimensions (HxWxD) 3.39" x 2.34" x 1.46"			
APX 7000 IMPRES NIMH 2100MAH RUGGEDIZED PLUS BATTERY	NNTN7573	798	$130.00
Motorola now makes batteries to an even more stringent military standard for customers who require a higher level of submersibility protection - MIL-STD-810E, Method 512.3 Immersion, which are referred to as Ruggedized PLUS. Dimensions (HxWxD) 5.07" x 2.34" x 1.57"			
BATT IMP FM R LI ION 2300M 2350T	NNTN8092	453	$140.00
This Impress 2300MAH Lithium Ion battery is both FM certified and Ruggedized PLUS (submersible). The battery is offered in a small form factor. It is the standard battery offered with the XE(eXtrEma) radio products. Dimensions (HxWxD): 3.07" x 2.34" x 1.65"			

Battery Fleet Management

Description	Nomenclature	APC	Price
FLEET MANAGEMENT CHRGR INTERFACE UNIT	NNTN7677A	785	$80.00
Multi-Unit Charger Interface Unit, attaches to an APX or XTS IMPRES multi-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to IMPRES Battery Fleet Management.			
IMPRES BATTERY DATA READER	NNTN7392	785	$250.00
Provides IMPRES battery users ability to access key usage data via PC. Compatible w/all IMPRES batteries (HT/PRO,TRBO & APX adapter included)			
FLEET MANAGEMENT RELEASE 1.2	NNTN7676C	785	$10.00
CHARGR INTRFCE UNT GEN1 IMPRES SUC	NNTN8045A	785	$35.00
Single-Unit Charger Interface Unit , attaches to an APX IMPRES single-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to the IMPRES Battery Fleet Management.			
NA FLEET MANAGEMENT LICENSE KEY	HKVN4036A	785	$489.00

Bluetooth Mission Critical Wireless

Description	Nomenclature	APC	Price
EARPIECE W/9.5" CABLE	NTN2575A	742	$151.00
EARPIECE W/12" CABLE	NTN2572A	742	$151.00
FM Certified; MCW BT; Requires QA00583 to be ordered in the APX radio			
ASSEMBLY,ACCESSORY,WIRELESS ACCY KIT, NFP, 9.5" CABLE	NTN2573B	742	$295.00
FM Certified MCW BT Requires QA00583 to be ordered in the APX radio			
WIRELESS 2.0 COMMPORT IC MODULE	NTN2571B	742	$139.00
1-WIRE EARBUD,29CM CORD,BLACK	NNTN8294A	742	$40.00
1-WIRE EARBUD,116CM CORD,BLACK	NNTN8295A	742	$40.00
ACCY,KIT,EAR PIECE,2W SHORT CORD,BL	NNTN8296A	742	$180.00

Bluetooth, Mission Critical Wireless Replacement Parts

Description	Nomenclature	APC	Price
ACCY,SMPS,MICRO USB,FIXED,CLP,US	PMPN4009A	903	$21.00
COMMPORT EAR TUBES (PACK OF 10)	RLN5037	115	$26.00
COMMPORT MAINTENANCE KIT	NTN8821	115	$46.00
Includes Replacement Ear Tubes (qty 10), Windscreens (qty 2) and Microphone Seal Stripe (qty 10).			
COMMPORT EAR STRAP (PACK OF 10)	NTN8988A	115	$17.25
EARTIPS, REPLACEMENT	NNTN8299A	742	$3.15

Belt Clip(s)

Description	Nomenclature	APC	Price
3" PLASTIC BELT CLIP ATTACHMENT	HLN6875A	721	$12.00
2.5" PLASTIC BELT CLIP ATTACHMENT	NTN8266B	476	$12.00
2.5? Belt Clip is compatible with all APX subscribers except the APX4000 series			

Belt Loops

Description	Nomenclature	APC	Price
APX 7000 2.5" REPLACEMENT SWIVEL BELT LOOP	PMLN5407	271	$12.00
APX 7000 2.75" REPLACEMENT SWIVEL BELT LOOP	PMLN5408	795	$12.00
APX 7000 3" REPLACEMENT SWIVEL BELT LOOP	PMLN5409	271	$12.00

Carrying Case(s)

Note: The APX 6000XE and APX 6000 do not have leather carry cases available for the NNTN7035, NNTN7036, NNTN7037 and NNTN7573 batteries.

Description	Nomenclature	APC	Price
APX6000XE 2.75SWBL2900,2300&2150MAH	PMLN5875	271	$65.00
APX6000XE Carry Case			
APX6000XE 3 FIXBL 2900,2300&2150MAH	PMLN5876A	795	$62.00
APX6000XE CC 2.75 SWL BL 4200MAH	PMLN5877A	795	$65.00
APX6000XE CC 3 FIX BL 4200MAH	PMLN5879A	795	$62.00
APX6000XE UNIV C HOLDER	PMLN5880A	795	$29.00

Charger

Description	Nomenclature	APC	Price
IMPRES CHG MU MACKINAW US/NA/CA/LA	NNTN7065B	785	$788.00
IMPRES CG MUD MACKINAW US/NA/CA/LA	NNTN7073B	785	$1,350.00
APX DUAL UNIT CHARGER WITHOUT DISPLAY	NNTN7586	795	$295.00
This next generation IMPRES charger provides advanced features, including the ability to turn on/off reconditioning, reduced reconditioning time and improved energy efficiency.			
CHR IMP DISP DUC EXT US/NA/CA/LA	NNTN7593A	785	$375.00
APX CHARGER INSERT ADAPTER FOR XTS MULTI-UNIT CHARGER	NNTN7686A	795	$207.00
Six inserts will ship in one package. Requires charger containing Software Version 3.4 or greater.			
APX CHARGER INSERT ADAPTER FOR XTS SINGLE-UNIT CHARGER	NNTN7687A	795	$45.00
Only 1 SUC insert will ship. Requires charger containing Software Version 3.4 or greater.			
APX TRAVEL CHARGER	RLN6434A	785	$101.00
IMPRES VEHICULAR CHARGER (FULL KIT)	NNTN7624B	785	$390.00
APX Portable Vehicular Charger (NNTN7624B supports APX XE subscriber line as well)			

CPS

NEO PORT PROG CABLE	PMKN4012B	037	$75.00
APX DMR PORT PROG CABLE			
PROGRAMMING, TEST & ALIGNMENT CABLE	PMKN4013C	037	$92.00

Earpieces

Description	Nomenclature	APC	Price
RECEIVE-ONLY FOAM EARBUD WITH 3.5MM PLUG - INTRINSICALLY SAFE (FM)	AARLN4885	742	$25.00
When used with MTP3000 models, to be used with remote speaker microphones PMMN4076A, PMMN4072A and PMMN4074A			
EAR RCVR W/COIL CBL&3.5MM PLUG	WADN4190B	742	$43.00

Headsets

Description	Nomenclature	APC	Price
IMPRES TEMPLE TRANSDUCER	PMLN5101A	742	$228.00
FM Certified			
HEAVY DUTY HEADSET PMLN5275B	PMLN5275B	742	$485.00
FM Certified			
CORE L/W HEADSET	RMN5058A	742	$99.00
FM Certified			
RX/TX BOOMLESS TEMPLE TRANSDUCER	RMN5116A	742	$248.00
Temple Transducer Headset will ONLY work with: Microphone Compatibility HMN4101, HMN4103, HMN4104.			

Public Safety Microphones - PSM's

Public Safety Microphones are available with 700/800 MHz portables only.

For optimum RF reception, it is recommended to have the correct type of PSM antenna connected to the PSM. The radio antenna must remain on the radio antenna port for proper and optimum operation. It is recommended to have both PSM antenna and radio antenna connected.

Description	Nomenclature	APC	Price
APX 7000 IMPRES PUBLIC SAFETY MICROPHONE IP55 W/JACK - 18 INCH The antenna needs to be purchased seperately. The only antenna currently qualified to work with UHFR1 PSM is PMAE4065A. For optimum RF reception, it is recommended to have the correct type of PSM antenna connected to the PSM. The radio antenna must remain on the radio antenna port for proper and optimum operation. It is recommended to have both PSM antenna and radio antenna connected	PMMN4059	795	$164.00
APX 7000 IMPRES PUBLIC SAFETY MICROPHONE IP55 W/JACK - 30 INCH The antenna needs to be purchased separately. The only antenna currently qualified to work with UHFR1 PSM is PMAE4065A.	PMMN4061	795	$164.00

For optimum RF reception, it is recommended to have the correct type of PSM antenna connected to the PSM. The radio antenna must remain on the radio antenna port for proper and optimum operation. It is recommended to have both PSM antenna and radio antenna connected.

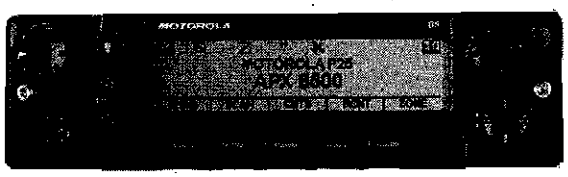
Remote Speaker Microphones - RSM's

Description	Nomenclature	APC	Price
IMPRES RSM DSPLY W JACK, W CHNL	HMN4104A	795	$375.00
APX7000 IMPRES RSM, NOISE CANC. EMERGENCY BUTTON 3.5MM JACK IP54	PMMN4062A	795	$107.00
APX IMPRES RSM W/VOL, IP57	PMMN4065A	795	$97.00
IMPRES RSM, 3.5MM AUDIO JACK	PMMN4069A	795	$110.00
IMPRES XE RSM, BLACK	NNTN8203ABLK	372	$335.00
RSM INTERFACE CABLE, NEXUS 4-POLE	PMKN4112A	795	$53.00
RSM INTERFACE CABLE, NEXUS 5-POLE	PMKN4107A	795	$53.00
DISPLAY RSM GCAI, REPLACEABLE CABLE	3075336B17	372	$90.00
RX ONLY EARPIECE W/TRANSLUCENT TUBE	RLN6424B	742	$80.00

Surveillance Kits, Wired

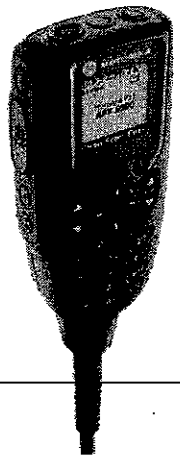
Description	Nomenclature	APC	Price
RUBBER EAR TIP, CLEAR	67009254001	795	$9.95
SURVEILLANCE LOW NOISE KIT	RLN5886A	742	$20.00
REPLACEMENT CLEAR ACOUSTIC TUBE	0105954U29	742	$7.90
SURVEILLANCE HIGH NOISE KIT	RLN5887A	742	$32.00
SPKR MIC W XLOAD EARPIECE Exceeds OSHA limits. REQUIRES NTN5664 Audio Adapter. FACTORY MUTUAL APPROVED.	ZMN6039	742	$190.00
2-WIRE SURVEILLANCE KIT WITH MICROPHONE AND PTT COMBINED - EXTRA LOUD Exceeds OSHA limits. Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8613 adapter	ZMN6038	476	$149.00
3-WIRE SURVEILLANCE KIT WITH MICROPHONE & PTT COMBINED, BEIGE Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8613 adapter	ZMN6031	742	$177.00
2-WIRE SURVEILLANCE KIT WITH MICROPHONE AND PTT COMBINED Requires NTN5664 Audio Adapter. Factory Mutual - (FM) *PR1500 - requires NTN8613 adapter	ZMN6032	476	$143.00

Data Compiled 16-May-2013 using DUP and all prices in USD



ASTRO® Digital APX 6500
Mobile Subscriber
700/800 MHz (10 – 35 Watts)
VHF - 136 -174 (10-50, 25 - 100 Watts)
UHFR1 - 380-470 (10-40, 25 - 110 Watts)
UHF R2 450-520 (10-45 Watts)

Secure and Trunked Radio Systems



Guideline

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749) OR HARDWARE KEY (QA01648) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. Also, an Advanced System Keys (ASK- DVN4046) will be required to be ordered. ******

http://ecat.comm.mot.com/ecat/pricebooks/dup/ASK.htm

This price page consists of the following sections:

A. Required Main Models and Options for standard operation (Steps 1-9)
B. Control Station, Dual Control Head, and Text Messaging Requirements
C. Optional Features
D. Aftermarket Accessories
E. Control Head Conversion Allied Sales Models
F. Retrofit Mounting Kits
G. Remote Control Head Replacement AND Dual Control Head Allied Sales Model

Online APX6500 Resources:

APX6500 Ordering Guide

APX6500 Specifications Sheet

APX Mobile Radio Brochure

APX6500 is not approved for use on motorcycle configurations.

Any notes relating to motorcycle configurations apply to the APX7500 product only.

Please be sure to use the most current version of Motorola APX Customer Programming Software (CPS) when programming new radios

Section A: Required Main Model and Options

For standard Radio Operation (including Motorcycle) **Steps 1 - 9 must be** selected.

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

1: Main Model *(Must Select One)*

Low/Mid Power

Description	Nomenclature	APC	Price
APX6500 7/800 MHZ MID POWER MOBILE	M25URS9PW1 N	527	$1,899.00
APX6500 VHF MID POWER	M25KSS9PW1 N	527	$1,899.00
APX6500 UHF R1 MID POWER	M25QSS9PW1 N	527	$1,899.00
APX6500 UHF R2 MID POWER	M25SSS9PW1 N	527	$1,899.00

High Power

Description	Nomenclature	APC	Price
APX6500 VHF HIGH POWER	M25KTS9PW1 N	527	$2,399.00
APX6500 UHF R1 HIGH POWER	M25QTS9PW1 N	527	$2,399.00

2: Operation Mode *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: SW ASTRO READY (ANALOG) NOT COMPATIBLE with Encryption Algorithm W969, W793, W797, G625, G298, G851, or G843 when combined with a Trunking Software Option.	G241	656	$0.00
ENH: ASTRO DIGITAL CAI OP APX	G806	656	$515.00

3: System Enhancement Software *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: CONVENTIONAL OPERATION APX6500	G48	527	$500.00

ENH: SMARTZONE OPERATION APX6500	G51	527	$1,200.00
Requires Advanced System Key option (QA01648 or QA01749)			
ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648	655	$5.00
A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4048 to be purchased.			
ADD: ADVANCED SYSTEM KEY - SOFTWARE KEY	QA01749	655	$0.00
A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking.			
ADD: ADVANCED WACN KEY SUPP DATA	QA02018	655	$5.00
A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.			

3b: Optional System Enhancement Software *(Not Required)*

Description	Nomenclature	APC	Price
ENH: SMARTZONE OMNILNK MULTZONE SYSTEM SW	G173	656	$200.00
Automatic Zoning Across Zones, Zone Registration, Trespass Protection, Over the Air Site Alias, 32 Preferred Sites, FastStart and AllStart Call Setup.			
ADD: P25 TRUNKING SOFTWARE	G361	656	$300.00
When ordering this option G51 & G806 MUST be ordered. G173 is included at "NO CHARGE".			
ADD: TDMA OPERATION	GA00580	656	$400.00
When ordering an APX6500Li model this option requires QA02756 software package			
ADD: DVRS PSU ACTIVATION	QA00631	655	$100.00
Enables DVRS Enhanced PSU functionality on APX Radios. Requires XTL MSU and Digital Operation.			

3c: Optional Data Link Manager CD *(Not Required)*

Description	Nomenclature	APC	Price
ADD: DATA LINK MANAGER APP CD- MOBILES	QA00205	655	$0.00
Option provides the NVN5424 Data CD. Please order this option if you would like the Data CD, and are unable to obtain it through other sources such as MOL.			

NOTE: OPTION QA00631 (DVRS PSU) ALLOWS THE MOBILE SUBSCRIBER TO BE USED AS A PSU. AN XTL MOBILE SUBSCRIBER IS STILL REQUIRED AS AN MSU

4: Control Head Hardware *(Must Select One)*

******O2 Control Head Hardware******

ADD: APX O2 CONTROL HEAD (Grey)	GA00804	656	$532.00

******O2 Control Head Colored Housing Trigger******

FOR THE IMPACT GREEN HOUSING YOU MUST STILL ORDER GA00804 ALONG WITH G201

ADD:IMPACT GREEN COLOR HOUSING (O2)	G201	656	$25.00

******O3 Control Head Hardware******

Description	Nomenclature	APC	Price
ADD:03 CONTROL HEAD	G72	656	$946.00
NOTE: VERSION PMUN1034C WILL NO LONGER SHIP FROM THE FACTORY AS IT HAS BEEN REPLACED BY VERSION PMUN1034E. PMUN1034C IS NO LONGER AVAILABLE *Select G90 (No MIC needed) when you order this option* AVAILABLE IN STANDARD KEYPAD AND LIGHTS AND SIREN KEYPAD VERSIONS. (For lights and siren add GA00806 Trigger Option)			
ADD: NO O3 CONTROL HEAD	GA00001	656	$0.00

******O5 Control Head Hardware******

Description	Nomenclature	APC	Price
ADD: APX O5 CONTROL HEAD	G442	656	$432.00
~~ADD: APX NO O2/O7 CH NEEDED MTCL~~	~~G88~~	~~656~~	~~$0.00~~

******O7 Control Head Hardware******

ADD: APX O7 CONTROL HEAD	GA00805	656	$632.00
AVAILABLE IN STANDARD KEYPAD AND LIGHTS AND SIREN KEYPAD VERSIONS. (For lights and siren add GA00806 Trigger Option)			

Vehicle Integration

******O7 Control Head Siren/Light Trigger******

Drives Siren & Light Keypad Printing and Factory Programming Software for Light relay operations

ADD: O7 CH SIREN & LIGHTS KEYPAD (O7 CH ONLY)	GA00806	656	$50.00
Available on O3 and O7 Control Heads			

(Required for Light and Siren and Gunlock Control)

Description	Nomenclature	APC	Price
ADD: UNIVERSAL RELAY CONTROLLER	GA00259	656	$250.00
Required to Control Vehicle Lights with 07 and O9 Control Heads.			
ADD: CABLE URC TO TRANSCEIVER	GA00260	656	$15.00
Connects Universal Relay Controller to APX Transciver via a RJ45 and CGAI connection.			
ADD: EXTERNAL ALARM RELAY AND CABLE	W116	656	$75.00
For either HORN or LIGHTS. NOT both			
ADD: GCAI EXTENSION CABLE 2 FT	GA00589	656	$30.00
For use with 07, O9 Control Heads and GCAI style Mic. KIT #PMKN4093A.			
ADD: REMOTE MOUNT VIP CBL APX	G322	656	$35.00
Park/Kill, Gunlock, "Horn Ring/Horn Transfer" or Horn/Lights Park/Kill and Horn "Ring/Horn Transfer" only available with Motorola Siren. Gunlock supported on O9 Control Head Only. CORRESPONDING KIT: (HKN6196B)			

5: Control Head Software ***(Must Always Select G444 - same software for O7, O5, O3 and O2 control heads)***

ADD: CONTROL HEAD SOFTWARE	G444	656	$0.00

6: Mounting ***(Must Select One for Mid Power Models)***

If a remote mount cable other than 5 meters (17ft) is desired for G67, please reference the "Remote Mount Cables" section below in Section C: Optional Features

High Power Models automatically include a Quick Release Keylock Remote Mounting option, no selection is required

Description	Nomenclature	APC	Price
ADD: DASH MOUNT Required for Control Station Operation	G66	656	$125.00
ADD: REMOTE MOUNT MID POWER Not Compatible with High Power. G67BA is required for Motorcycle Configuration. Motorcycle Remote Mount Option is $400 DUP.	G67	656	$297.00

7: RF Antenna

No Antenna Needed is Valid For All Bands

Description	Nomenclature	APC	Price
ADD: NO RF ANTENNA NEEDED	G89	656	$0.00

7/800

Description	Nomenclature	APC	Price
ADD: ANT 3DB LOW-PROFILE 762-870 Corresponding kit: HAF4013 Corresponding Motorcycle kit: HAF4018	G174	656	$43.00
ADD: ANT 3DB ELEVATED FEED 762-870 NOT Compatible with Motorcycle. Corresponding kit: HAF4014.	G175	656	$75.00
ADD: ANT 1/4 WAVE 762-870 MHZ Corresponding kit: HAF4016 Corresponding Motorcycle kit: HAF4015 **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.**	G335	656	$14.00
ALT: ANT 3DB GAIN 762-870MHZ Not compatible with Motorcycle. Corresponding kit: HAF4017.	W484	656	$38.00

VHF

Description	Nomenclature	APC	Price
ADD: 3BD ANT 136-174MHZ Not Compatible with Motorcycle Corresponding kit: HAD4022A.	G301	656	$58.50
ADD: 1/4 WAVE WHIP ROOF TOP 136-144 Corresponding kit: HAD4006 Corresponding Motorcycle kit: RAD4002ARB	G296	656	$13.50
ADD: 1/4 WAVE ROOF TOP 144-150.8 Corresponding kit: HAD4007 Corresponding Motorcycle kit: RAD4003ARB	G297	656	$13.50
ADD: 1/4 WAVE ROOF TOP 150.8-162 Corresponding kit: HAD4008 Corresponding Motorcycle kit: RAD4004ARB	G299	656	$19.50
ADD:1/4 WAVE ROOF TOP ANT VHF	G300	656	$13.50

Corresponding kit: HAD4009
Corresponding Motorcycle kit: RAD4005ARB

1/4 WAVE BROADBAND ANT 146-174	G629	656	$64.00
Not Compatible with Motorcycle Corresponding kit: HAD4017.			
ADD:VHF ANT WIDEBAND 136-174 MHZ	G792	656	$75.00
Not Compatible with Motorcycle Corresponding kit: HAD4021.			
ALT: 1/4 WV BDBD ANT 136-162 MHZ	W652	656	$47.75

UHF R1

Description	Nomenclature	APC	Price
ADD: ANT 3.5DB 380-420 MHZ MAXRAD	G427	656	$55.00
Not Compatible with Motorcycle Corresponding kit: HAE6010.			
ADD: ANT 5.0DB 380-420 MHZ MAXRAD	G429	656	$62.00
Not Compatible with Motorcycle Corresponding kit: HAE6011.			
ADD: ANT 5.0DB 445-470 MHZ	G430	656	$110.00
Not Compatible with Motorcycle Corresponding kit: RAE4014ARB.			
ADD: ANT 1/4 WAVE WHIP 380-420 MHZ	G425	656	$25.00
Not Compatible with Motorcycle Corresponding kit: HAE6012. **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.**			
ADD: ANT 1/4 WAVE WHIP 450-470 MHZ	G426	656	$25.00
Not Compatible with Motorcycle TEMPORARY: Not compatible with U2-7/800 Bandsplit. Corresponding kit: HAE4003.			
ADD: ANT 3.5DB 450-470 MHZ	G428	656	$50.00
Not Compatible with Motorcycle Corresponding kit: HAE4011.			
ADD: ANT WIDEBAND 380-470 MHZ MAXRA	G431	656	$58.00
Not Compatible with Motorcycle Corresponding kit: HAE6013.			
ADD: ANT 2DB WIDEBAND 380-520 MHZ	GA00505	656	$50.00
TEMPORARY: Not compatible with U2-7/800 Bandsplit. Corresponding kit: HAE6031_			

UHF R2

Description	Nomenclature	APC	Price
ADD: ANT 5.0DB 445-470 MHZ	G430	656	$110.00
Not Compatible with Motorcycle Corresponding kit: RAE4014ARB.			
ADD: ANT 1/4 WAVE WHIP 450-470 MHZ	G426	656	$25.00
Not Compatible with Motorcycle TEMPORARY: Not compatible with U2-7/800 Bandsplit. Corresponding kit: HAE4003.			
ADD: ANT 3.5DB 450-470 MHZ	G428	656	$50.00
Not Compatible with Motorcycle Corresponding kit: HAE4011.			
ADD: 5DB GAIN ANT 494-512 MHZ	G486	656	$58.00
Not Compatible with Motorcycle Corresponding kit: RAE4016ARB.			
ADD: ANT 1/4 WAVE 470-512 MHZ	G490	656	$14.00
Not Compatible with Motorcycle			

TEMPORARY: Not compatible with U2-7/800 Bandsplit.
Corresponding kit: HAE4004.

ADD: ANT 3 DB ROOF TOP 470-495 MHZ	G493	656	$33.00
Not Compatible with Motorcycle Corresponding kit: HAE4012.			
ADD: ANT 3 DB ROOF TOP 494-512 MHZ	G494	656	$33.00
Not Compatible with Motorcycle Corresponding kit: HAE4013.			
ADD: ANT LOW PROFILE 450-512 MHZ	G510	656	$50.00
Corresponding kit: HAE6016 TEMPORARY: Not compatible with U2-7/800 Bandsplit. Corresponding Motorcycle kit: HAE6016			
ADD: 2DB ANT WIDEBAND 450-520 MHZ	G511	656	$70.00
TEMPORARY: Not compatible with U2-7/800 Bandsplit.Corresponding kit:HAE6015 Corresponding Motorcycle kit:HAE6015			
ADD: ANT 2DB WIDEBAND 380-520 MHZ	GA00505	656	$50.00
TEMPORARY: Not compatible with U2-7/800 Bandsplit. Corresponding kit: HAE6031_			
ADD: ANT ROOF TOP 5 dB 470-494 MHz	GA00652	656	$81.75

8: Microphones *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED	G90	656	$0.00
Select this option when ordering O3 Handheld Control Head (G72)			
ADD: PALM MICROPHONE	W22	656	$72.00
Corresponding kit: HMN1090			
ADD: KEYPAD MIC GCAI	W20	656	$180.00
Compatible with motorcycle configuration. Supports Remote Monitor. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079			
ADD: CONTROL STATION DESK GCAI MIC	W382	656	$169.00
Dash Mount Required Corresponding Kit: RMN5070			
ENH: HAND MIC,GCAI WATER RESISTANT	G892	656	$72.00
Compatible with motorcycle configuration. Corresponding kit for O5: HMN1089A			
ADD: HANDSET/HANGUP COILED CABLE	G876	656	$415.00
Coiled Cable, No Toggle Switch Accessory Kit: HKN1017			
ADD: VISOR MIC REMOTE MOUNT	W872	656	$30.00
Requires G235 Footswith PTT. Kit Number: RMN5054_			
ADD: MODEL III GCAI KEYPAD HANDSET	GA00221	656	$295.00
Corresponding kit: HMN4097A			
ADD: GOOSENECK PTT	G233	656	$56.00
Requires W872 Visor Mic. Kit Number: HMN1087A			
ADD: HANDSET/HANGUP MIC ARMORED CABLE	W874	656	$300.00
Armored Cable, No Toggle Switch Accessory Kit: HKN1018			
ADD: PTT FOOTSWITCH	G235	656	$51.00
Requires W872 Visor Mic. Kit Number: GLN7278_			
ADD: PUSHBUTTON PTT	GA00304	656	$56.00

9: Speakers *(Must Select One)*

G142 NO SPEAKER Required for Control Station

Description	Nomenclature	APC	Price
ADD: SPKR 15W WATER RESISTANT	G831	656	$60.00
ADD: NO SPEAKER NEEDED	G142	656	$0.00
ADD: AUXILARY SPKR 7.5 WATT Corresponding kit: HSN4031.	B18	656	$60.00
ADD: AUXILARY SPKR 13W (3.2OHM)	W432	656	$71.50

Section B: Control Station and Dual Control Head Requirements

CONTROL STATION OPERATION

(Mid Power Radios Only)

I. First, you must review your selection of the following options from "Section 1: Required Options".

- Step 1 *(Note: Main Model)*
- Step 2 *(Note: All listed options are compliant)*
- Step 3 *(Note: All listed options are compliant)*
- Step 4 *(Note: O2, O5, O7 Control Head **OR** "No Control Head Needed" are compatible with Control Station Application- Must only select one).*
- Step 5 *(Note: Must Select G444. The O2, O5 and O7 Control Head Software is compatible with Control Station Application).*
- Step 6 *(Note: Must Select G66. Control Station operation is only offered in Dash mount configuration)*
- Step 7 *(Note: All listed options are compliant)*
- Step 8 *(Note: Some Microphones are **NOT** compatible. Please read option description).*
- Step 9 *(Note: Must Select G142 - No Speaker Needed)*

II. You Must Select W665. G91 is needed for control station operation, but is an optional purchase.

SPECIFIC CONTROL STATION OPTIONS

Control Station Operation and Power Supply

Description	Nomenclature	APC	Price
ADD: CONTROL STATION POWER SUPPLY	G91	656	$269.00
ADD: CONTROL STATION OPERATION	W665	656	$70.00

III. Features listed in "Section C: Optional Features" are optional, if applicable. Please read the option's description to determine compatibility.

DUAL CONTROL HEAD RADIO

What is an APX 6500 O5 Dual Control Head Configuration?

The APX 6500 mobile radio and the O5 control head can be configured in a dual control head configuration to support up to 2 control heads on a single transceiver. This allows control of a single APX 6500 transceiver from up to 2 different control head locations. The O5 control head is the only control head that supports dual control head configurations.

DUAL CONTROL HEAD ORDERING PROCEDURES

*** Dual Control Head Always Requires the O5, O7, O2 Control Head Hardware (G442) ***

*** Dual Control Head Always Requires Control Head Software (G444) ***

*** Dual Control Head Radios Always Require the Dual Control Head Option (GA00092).***

This Dual Control Head Option QTY should ALWAYS equal the main line item Qty.

Description	Nomenclature	APC	Price
ADD: DUAL-CONTROL HARDWARE	GA00092	656	$570.00

*** Dual Control Head Always Requires Remote Mount ***

*** THERE IS NO STANDARD 17' CABLE OFFERED FOR A DUAL CONTROL HEAD CONFIGURATION. YOU MUST ALWAYS ORDER ONE CABLE PER CONTROL HEAD ***

Description	Nomenclature	APC	Price
ADD:CBL REMOTE MOUNT 10 FEET Corresponding kit: HKN6170	G618	656	$10.00
ADD: REMOTE MOUNT CBL 17 FEET Included at no charge with Single Control Head Remote Mount installations and High Power. Corresponding kit: HKN6169	G628	656	$15.00
ADD: REMOTE MOUNT CBL 30 FEET Corresponding kit: HKN6166	G610	656	$25.00
ADD: REMOTE MOUNT CBL 50 FEET Corresponding kit: HKN6167	G609	656	$35.00
ADD:CBL REMOTE MOUNT 75 FEET Corresponding kit: HKN6166A	G607	656	$45.00
ADD:REMOTE MOUNT CBL 115 FEET Corresponding kit: HKN6165	G879	656	$55.00

*** Total # of microphones must match the total # of control heads being ordered. The G90 "No Mic Needed" option counts as a mic option ***

**** Total # of speakers must match the total # of control heads being ordered. The G142 "No Speaker Needed" option counts as a speaker option ***

NOTE: DEK BOX Hardware cannot be ordered as an option with Dual Control Head. You must order individual DEK Box Kits for each control head you need to have DEK box hardware.

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on APX 7000 Dual Display Portable radios. Advanced Messaging is NOT supported on APX 7000 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for APX Mobiles Require: (Note: some control heads are not available on all main models)

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- P25 Conventional (G48)
- Packet Data Interface (W947)

OR

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking Software (G361)
- Packet Data Interface (W947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

Section C: Optional Features

The following options are **optional** and will provide additional capabilities, if required.

System Enhancement Options

Description	Nomenclature	APC	Price
ADD: MULITCAST VOTING SCAN	G387	656	$200.00

This feature allows for voting of the Conventional Channels ONLY.			
ENH: OVER THE AIR PROVISIONING	G996	656	$100.00
Compatible with P25 Trunking OR ASTRO Conventional only; There is NO Analog Functionality for this feature. Requires W947 Data option. To do in field POP25 programming must use Advanced System Key (DVN4046A). Single unit POP25 with batch programming for trunking configuration coming in future.			
ADD: RS232 PACKET DATA INTERFACE	W947	656	$200.00
ADD: GPS ACTIVATION	GA00229	656	$100.00
Requires IV&D Activation.			
ENH: ENH: RADIO TRACE	G170	656	$75.00
Requires keypad mic (W20)when ordered with O5 control head.			
ADD: TRUNKED ONE TOUCH BUTTON APX	G683	656	$150.00
ADD: APX6500 RADIO AUTHENTICATION	GA01767	527	$100.00
Requires P25 Trunking (G361)			
ENH: ENHANCEMENT LEVEL 2	GA01771	527	$200.00
Please reference the Enhancement Level Reference Guide for more details.			

Enhancement Level Reference Guide

GPS Antennas

******Selection is required when ordering GA00229, GPS Activation******

Description	Nomenclature	APC	Price
ADD: NO GPS ANTENNA NEEDED	GA00235	656	$0.00
ADD: GPS ANTENNA	GA00226	656	$75.00
ADD: GPS ANTENNA GLASS MT	GA00270	656	$75.00

GPS Outdoor Location Solution Overview

Encryption Algorithms

All APX6500 Mobile Radios ship standard with Single Key Advanced Digital Privacy (ADP).
******ADP Privacy is not FIPS compliant - ADP Privacy not supported by OTAR - ADP is digital P25 conventional / P25 trunking only******

Description	Nomenclature	APC	Price
ADD: MULTIPLE KEY ENCRYPTION OPERATION	W969	656	$330.00
REQUIRED when using more than one encryption algorithm or encryption key.			
ADD: ENCRYPTION P25 & MDC OTAR	G298	656	$740.00
Includes Multi-key (W969)and Trunking OTAR. Includes Tectical OTAR. Tactical OTAR can only be utilized when IV&D is purchased.			
ADD: AES ENCRYPTION APX	G843	656	$475.00
Requires P25 operation.			
ADD: DES/DES-XL/DES-OFB ENCRYPTION	G625	656	$599.00
Analog Secure (DES and DVP) supported in radios shipped past June 1, 2010.			
ADD: DVP-XL ENCRYPTION APX7500	W797	656	$487.00
Analog Secure (DES and DVP) supported in radios shipped past June 1, 2010.			
ADD: AES/DES-XL/DES-OFB ENCRYPTION	G851	656	$799.00
G851 is NOT compatible with G843 and G625. W969 Multi-key required for use of more than 1 key. Analog Secure (DES and DVP) supported in radios shipped past June 1, 2010. AES and DES-OFB Operation Require Digital (G806).			
ADD: 3 DAY KEY RETENTION APX	GA00236	656	$100.00
Includes GA00227 REMOVABLE MEMORY 1 GB.			

Expandable Memory

Description	Nomenclature	APC	Price
ADD: REMOVABLE MEMORY 1 GB	GA00227	656	$75.00
Not compatible with GA00236 (ADD: 3 DAY KEY RETENTION APX) since 1 GB memory is inluded with that option.			

Remote Mount Cables

(All cables are for 07 or 05 control head only)

(The 5 meter (17 FT) Cable Ships Standard)

Description	Nomenclature	APC	Price
ADD:CBL REMOTE MOUNT 10 FEET	G618	656	$10.00
Corresponding kit: HKN6170			
ADD: REMOTE MOUNT CBL 30 FEET	G610	656	$25.00
Corresponding kit: HKN6168			
ADD: REMOTE MOUNT CBL 50 FEET	G609	656	$35.00
Corresponding kit: HKN6167			
ADD:CBL REMOTE MOUNT 75 FEET	G607	656	$45.00
Corresponding kit: HKN6166A			
ADD:REMOTE MOUNT CBL 115 FEET	G879	656	$55.00
Corresponding kit: HKN6165			
ADD: REMOTE MOUNT CABLE 131 FT	G582	656	$65.00
For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio			
Corresponding kit: HKN6164			

DEK

Description	Nomenclature	APC	Price
ADD: STATUS/MESSAGE 8	W355	656	$475.00
NOT compatible with O3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration.			
CORRESPONDING KIT: H1638A			
ADD: STATUS/MESSAGE 16	W374	656	$650.00
NOT compatible with O3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration.			
CORRESPONDING KIT: H1639A			

Direct Mode Entry

Description	Nomenclature	APC	Price
ADD: 8 MODE DIRECT ENTRY	W599	656	$180.00
NOT compatible with O3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration.			
CORRESPONDING KIT: H1635A			
ADD: 16 MODE DIRECT ENTRY	W614	656	$360.00
NOT compatible with O3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration.			
CORRESPONDING KIT: H1636A			
ADD: 24 MODE DIRECT ENTRY	W615	656	$540.00
NOT compatible with O3 or Motorcycle Control Heads or W269 Siren/PA or other DEK or Direct Mode Entry Selections. Not compatible with Dash Mount configuration. Requires Remote Mount configuration.			
CORRESPONDING KIT: H1637A			

WHELEN SIREN (MOTOROLA COMPATIBLE)

NOTE: THE NEW SIREN IS COMPATIBLE WITH APX AND XTL MOBILES WITH "O" SERIES CONTROL HEADS ONLY. THIS SIREN IS NOT COMPATIBLE WITH ANY "W" SERIES CONTROL HEADS

THE SIREN BASE MODEL TT2592, ONE CABLE AND THE SIREN MOUNTING HARDWARE TT0507 MUST ALWAYS BE ORDERED (THIS SIREN IS ORDERED AS A SEPARATE LINE ITEM, TT2592 IS THE MODEL)

DEK OPTIONS ARE AVAILABLE AS OPTIONS TO THE SUBSCRIBER AS SHOWN BELOW

Description	Nomenclature	APC	Price
WHELEN/MOTOROLA SIREN	TT2592	656	$395.00
SIREN HARDWARE INSTALL KIT	TT05707AA	656	$20.00
SIREN TO RADIO CABLE	TT05708AA	656	$65.00
SIREN TO DEK CABLE - O3 CONTROL HEAD ONLY	TT05709AA	656	$78.00

SIREN DEK/SWITCH OPTIONS

ADD: DEK FOR WHELEN SIREN W/ O3 CH ONLY	GA00812	656	$105.00
ADD: DEK FOR WHELEN SIREN	GA00814	656	$105.00

Auxiliary WILDCARD

Description	Nomenclature	APC	Price
ADD: AUXILIARY SWITCH PANEL	W591	656	$165.00

Corresponding kit: HLN1196.
Remote Mount Required. NOT compatible with O3 control head or motorcycle.

Alarm

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAY AND CABLE	W116	656	$75.00

For either HORN or LIGHTS. NOT both

Emergency

Description	Nomenclature	APC	Price
ADD: EMERGENCY ID EXT. FOOTSWITCH	W470	656	$56.00

Corresponding kit: HLN5113.

ADD: EXTERNAL EMERGENCY PUSHBUTTON	W688	656	$56.00

Corresponding kit: HLN5131

Data Cables

Description	Nomenclature	APC	Price
ADD: RS232 DATA INTFC CBL DASH	G303	656	$50.00

6 FT RS232 DATA CABLE
Corresponding kit: HKN6160A.

ADD: RS232 DATA INTFC CBL TRK	G304	656	$50.00

20 FT RS232 DATA CABLE
Corresponding kit: HKN6161A.

ADD: USB DATA INTFC CABLE-DASH	G308	656	$50.00

6 FT USB W/IGNITION SENSE

Corresponding kit: HKN6163B.
Can be used to program APX Mobile Radios.

ADD:USB DATA INTFC CABLE-TRK	G309	656	$50.00

16.5 FT USB W/IGNITION SENSE
Corresponding kit: HKN6172B.
Can be used to program APX Mobile Radios.

RF Modem

Description	Nomenclature	APC	Price
ENH: ENABLE RF MODEM	G319	656	$0.00

The APX mobiles do not support Site Lens or System Watch. Therefore, the APX RF Modem function does not support the legacy System Watch or Site Lens applications. The APX RF Modem supports Conventional or 9600 Trunking only. Enebling the RF Modem in conventional mode allows provisioned APX portables to pass accountability data through the portable option Q445.

RF ID Tag

Description	Nomenclature	APC	Price
ADD: RFID LABEL	GA00268	656	$15.00

Service Options

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$64.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$246.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00
ENH: 3 YR CANADA EXTND WRNTY APX	GA00314	386	$200.00
ENH: 5 YR CANADA EXT WRNTY APX	GA00317	386	$274.00

Amplifier

(UHF and VHF Mid and High Power Radios Only***)***

Description	Nomenclature	APC	Price
ADD: RF PREAMP	W12	656	$66.00

Options applies only to VHF & UHF radios.

Mounting Lock

Description	Nomenclature	APC	Price
ADD: KEY LOCK MOUNT APX	W81	656	$33.00

Remote Mount Mid Power Only.

Test Results

Description	Nomenclature	APC	Price
ADD: PRINTED TEST RESULTS APEX	G799	656	$0.00

Section D: Aftermarket Accessories

Antenna

7/800

Description	Nomenclature	APC	Price
ANTENNA (762-870 MHZ) 3DB LOW-PROFILE	HAF4013	500	$43.00
ANTENNA (762-870 MHZ) 3DB ELEVATED FEED	HAF4014	500	$75.00
ANTENNA (762-870 MHZ) 1/4 WAVE	HAF4016	500	$23.00
ANTENNA (762-870 MHZ) 3DB GAIN COLLINEAR	HAF4017	500	$38.00

VHF

Description	Nomenclature	APC	Price
ANTENNA, VHF (136-144MHZ) 1/4 WAVE ROOF TOP	HAD4006	554	$19.50
High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohmns, nominal			
ANTENNA, VHF (144-150.8 MHZ) 1/4 WAVE ROOF TOP	HAD4007	554	$19.50
High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohmns, nominal			
ANTENNA, VHF (150.8-162 MHZ) 1/4 WAVE ROOF TOP	HAD4008	554	$19.50
High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohmns, nominal			
ANTENNA, VHF (162-174 MHZ) 1/4 WAVE ROOF TOP	HAD4009	554	$19.50
High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohmns, nominal			
ANTENNA VHF 1/4 WAVE	RAD4002ARB	554	$100.00
ANTENNA VHF 1/4 WAVE	RAD4004ARB	554	$100.00
ANTENNA VHF 1/4 WAVE	RAD4005ARB	554	$75.00
ANTENNA 132-174 3DB GAIN	HAD4022A	585	$65.50
ANT ROOF MT WB VHF 146/174	HAD4017A	500	$44.00

Adapters

Description	Nomenclature	APC	Price
AUDIO CABLE ADAPTER	HKN6158	500	$49.00
ADAPTER CABLE DATA	HKN6159	500	$49.00
KEYLOADING CABLE ADAPTER (GCAI)	HKN6182	514	$41.50
Used to adapt keyload cable TKN8531 for all APX 7500, APX,6500, APX4500, XTL 5000 and XTL 2500. Not compatible with XTL1500.			

Bull Horns for Sirens and Public Address

Description	Nomenclature	APC	Price
SPEAKER SIREN, ROUND W/CHROME & BLACK	TDN6251	706	$329.00
SPEAKER RECTANGULAR WITH CHROME FINISH	TDN6252	706	$265.00
SPEAKER UNDERHOOD WITH GRAY FINISH	TDN6253	706	$220.00

SPEAKER ROUND WITH GRAY FINISH	TDN6254	706	$248.00

Control Station Tray and Power Supply

Description	Nomenclature	APC	Price
MOBILE DESK TRAY	HLN6042	617	$77.00
PS 14V 10A 117/240 VAC.	HPN4007C	500	$296.00

Customer Programming Software

CABLE CH, PROGRAMMING, USB	HKN6184C	518	$51.00

Programming and Data Cables
(Please see CPS PART NUMBER GUIDE for cable descriptions)

CABLE KIT 20' DATA	HKN6161	476	$50.00
RS232 Data Interface Cable - REMOTE			
CABLE CH, PROGRAMMING, USB	HKN6184C	518	$51.00
CABLE, DATA, USB, 4.5M, XTL5000	HKN6172B	500	$85.00

DEK/VIP

Description	Nomenclature	APC	Price
AUDIO CABLE ADAPTER	HKN6158	500	$49.00
ADAPTER CABLE DATA	HKN6159	500	$49.00
KEYLOADING CABLE ADAPTER (GCAI)	HKN6182	514	$41.50
Used to adapt keyload cable TKN8531 for all APX 7500, APX,6500, APX4500, XTL 5000 and XTL 2500. Not compatible with XTL1500.			

Emergency

Description	Nomenclature	APC	Price
EMERGENCY FOOT SWITCH	HLN5113	604	$61.75

Microphones

XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00
AS. SPECTRA & XTL5000 DESKTOP MIC	RMN5070A	706	$172.00
HANDSET/HANGUP (HANGUP CUP)	HLN1457	706	$285.00
MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	706	$295.00
PUSH BUTTON PTT	RLN5926A	706	$39.00

Microphone Extension Cable

Description	Nomenclature	APC	Price
CABLE, MOBILE MIC EXTENSION, 10FT	PMKN4033A	706	$42.00
Not for use with the W20 GCAI Microphone.			

Power

Description	Nomenclature	APC	Price

POWER CABLE, 10 FT. (LOW/MID POWER) 30 & 35 WATT	HKN4191	412	$18.00
POWER CABLE, 20 FOOT TO 12V BATTERY VHF & UHF models.	HKN4192	508	$38.25
CABLE, POWER, 100W	HKN6110	585	$37.00
CONTROL HEAD / IGNITION SENSE POWER CABLE	HKN6188	514	$20.75

Programming AND Flash

CABLE CH, PROGRAMMING, USB	HKN6184C	518	$51.00

O5 Remote Mount Cables

CABLE, REMOTE MOUNT, 5M	HKN6169B	518	$58.00
CABLE, REMOTE MOUNT, 15M	HKN6167B	518	$75.00
CABLE, REMOTE MOUNT, 75 FT	HKN6166	514	$80.00
CABLE, REMOTE MOUNT, 115 FT	HKN6165	514	$105.00
CABLE,REMOTE MOUNT,131 FT	HKN6164	514	$122.00

O3 Remote Mount Cables

O3 CAN 17' EXTENSION CABLE O3 Remote Mount Cable. Included in O3 Remote Mount G67 Option	PMLN4958A	585	$94.50

O3 Remote Mount Cable

Description	Nomenclature	APC	Price
O3 CAN 18' EXTENSION CABLE Included in O3 Remote Mount G67 Option	PMLN4958	500	$94.50

Siren/DEK

Please include the H1831 model when ordering the following for DEKs:

Description	Nomenclature	APC	Price
ODYSSEY CH DEK KIT Includes cable and mounting hardware.	H1831	500	$35.75
8 STATUS/MESSAGE (W355) Message buttons are inlcuded, however, they are ONLY applicable for systems 3.X and earlier.	H1338	604	$475.00

Speakers

Description	Nomenclature	APC	Price
EXTERNAL WATER RESISTANT SPEAKER 15 WATTS	HSN4040A	795	$76.00
MCS EXT SPKR 13W	HSN4032B	500	$71.50
EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	HSN4038	476	$60.50
MCYCLE WP SPEAKER	HSN6003B	500	$63.50

Miscellaneous

Description	Nomenclature	APC	Price
WILDCARD	HLN1196	412	$165.00

Manuals

*** Currently, the APX6500 O5 User Guide and the APX6500 O5 Install Manual can be downloaded from MOL (Motorola Online). ***
*** These documents can be found in Resource Center > Product Information >Manuals >Two-Way Mobile ***

Section E: Control Head Conversion AND Retrofit Allied Sales Models

PLEASE READ ALL ALLIED MODEL AND OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

FYI: THE FOLLOWING ALLIED SALES MODELS ARE ORDERABLE VIA COF, MOL, AND R12 ONLY - THESE KITS ARE NOT STOCKED IN THE AFTERMARKET PARTS DIVISION

NOTE: IF YOU WOULD LIKE AN EXTENSION CABLE FOR YOUR O3 CONTROL HEAD TO MAKE YOUR O3 A REMOTE MOUNT, PLEASE ORDER H1849B. (IF ORDERING THIS KIT ALONG WITH ANOTHER ALLIED SALES MODEL, PLEASE ORDER THEM AS SEPARATE LINE ITEMS)

Control Head Conversion Allied Sales Models

APX RETROFIT ALLIED SALES MODELS

HIGH POWER

HIGH POWER O3 CONTROL HEAD TO O5 CONTROL HEAD REMOTE MOUNT (REQUIRES MICROPHONE OPTION)

O3 TO O5 RM HIPWR W/CH	H1840	656	$650.00

MID POWER

MID POWER O3 CONTROL HEAD TO O5 CONTROL HEAD **DASH MOUNT** (REQUIRES MICROPHONE OPTION)

Description	Nomenclature	APC	Price
O5 MID POWER DASH CONVERSION KIT	H1819	500	$650.00

Contains complete O5 dash control head and O5 dash transceiver faceplate. O5 mic available as option. Does not include transceiver trunion. If you have a secure capable unit with HLN6876 (3 DAY KEY RETENTION BOARD) or HLN6877 (30 SEC KEY RETENTION BOARD), you must replace it with either MHLN6918 (3 DAY KEY RETENTION BOARD) or MHLN6919 (30 SEC KEY RETENTION BOARD).

MID POWER O3 CONTROL HEAD TO O5 CONTROL HEAD **REMOTE MOUNT** (REQUIRES MICROPHONE OPTION)

Description	Nomenclature	APC	Price
O3 TO O5 RM MIDPWR W/CH	H1843	656	$650.00

O3 CONTROL HEAD **DASH MOUNT** TO O3 CONTROL HEAD **REMOTE MOUNT**

Description	Nomenclature	APC	Price
O3DM TO O3 RM MIDPWR NOCH	H1849	656	$159.00

MID POWER O5 CONTROL HEAD **REMOTE MOUNT** TO O3 CONTROL HEAD **DASH MOUNT**

Description	Nomenclature	APC	Price
O5 REM TO 03 DM MIDPWR W/CH	H1847	656	$625.00

MID POWER O5 CONTROL HEAD **REMOTE MOUNT** TO O5 CONTROL HEAD **DASH MOUNT**

Description	Nomenclature	APC	Price
O5 RM TO 05 DM MIDPWR NOCH	H1848	656	$159.00

MID POWER O5 CONTROL HEAD **DASH MOUNT** TO O5 CONTROL HEAD **REMOTE MOUNT**

Description	Nomenclature	APC	Price
O5 DM TO O5 RM (MP)	H1853	656	$325.00

07 Control Head Kits

Description	Nomenclature	APC	Price
O7 CH DASH MOUNT RETROFIT KIT	H1869	656	$850.00
Description	**Nomenclature**	**APC**	**Price**
O7 CH REMOTE MOUNT RETROFIT KIT	H1870	656	$850.00

02 Control Head Kit

itemhn=h1872,0#

Microphones

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED	G90	500	$0.00
Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ADD: PALM MICROPHONE	W22	500	$72.00
Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090			
ADD: KEYPAD MIC (GCAI)	W20	514	$180.00
Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079			

9: Speakers *(OPTIONAL)*

Description	Nomenclature	APC	Price

ADD: SPKR 15W WATER RESISTANT	G831	656	$60.00
ADD: NO SPEAKER NEEDED	G142	656	$0.00
ADD: AUXILARY SPKR 7.5 WATT Corresponding kit: HSN4031.	B18	656	$60.00
ADD: AUXILARY SPKR 13W (3.2OHM)	W432	656	$71.50

Section G: Remote Control Head Replacement AND Multiple Control Head Allied Sales Model

PLEASE READ ALL ALLIED MODEL AND OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

Remote Control Head Replacement AND Multiple Control Head Retrofit Kit

The APX 7500 Remote Control Head Replacement AND Multiple Control Head Retrofit allied sales model provide the following:

- QTY 1: **REMOTE** mount control head assembly that includes a control head + flex cable + control head interface board rear housing (CHIB)
- Qty 1: Remote Control Head Power cable (HKN6188)
- Qty 1: Remote Control Head Mounting trunion and hardware
- Qty 1: Manual CD and dust cover kit
- OPTION: Must select a microphone option
- OPTION: Must select a speaker option
- OPTION: Must select a remote cable option

***IF YOU ARE ADDING A CONTROL HEAD TO CONVERT A SINGLE CONTROL REMOTE MOUNT RADIO TO A DUAL CH CONFIGURATION THEN YOU MUST MAKE SURE THE RADIO HAD VERSION 6.9 SOFTWARE OR GREATER.

THE ALLIED SALES MODEL BELOW DOES NOT INCLUDE A FLASH FIRMWARE REFRESH. PLEASE SEE FLASH UPGRADE PRICE PAGE ***

FIRMWARE VERSION R09.00.00 OR HIGHER IS REQUIRED.

Description	Nomenclature	APC	Price
O5 REMOTE CTRL HD/CHIB REPLACEMENT/ADDITION	H1823	500	$570.00

Microphones

(Must Select One and Only One)

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.	G90	500	$0.00
ADD: PALM MICROPHONE Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090	W22	500	$72.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079	W20	514	$180.00

Speakers

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$60.00
ADD: INCREASED AUDIO POWER 13W Corresponding kit: HSN4032. NOT COMPATIBLE with W665 Control Station and Motorcycle Configuration.	W432	500	$71.50
ADD: SPKR 7.5W WATER RESISANT Corresponding kit: HSN4038	G832	656	$60.50

Remote Mount Cables

*****For Dual CH configurations, the total cable length may not be greater that 131 ft (40 meters)*****

(Must Select One and Only One)

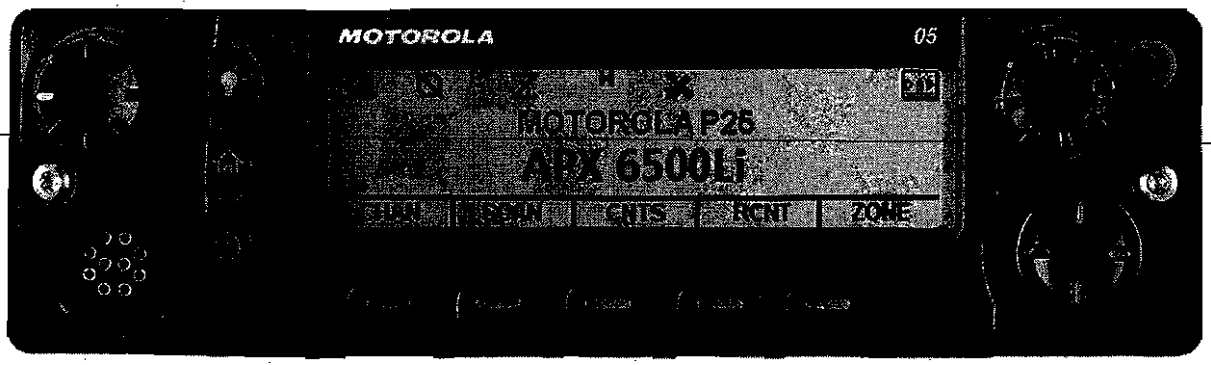
Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT) ***For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio*** Corresponding kit: HKN6164	G582	514	$65.00

For product questions please contact your Subscriber BDM or Product Planner (GDXV38)

Data Compiled 16-May-2013 using DUP and ell prices in USD

ASTRO® Digital APX 6500Li Mobile Subscriber
700/800 MHz (10 – 35 Watts)
VHF - 136 -174 (10-50, 25 - 100 Watts)
UHFR1 - 380-470 (10-40, 25 -110 Watts)
UHF R2 450-520 (10-45 Watts)

Secure and Trunked Radio Systems



Guideline

******NOTE: APX 6500Li digital radios require either a SOFTWARE KEY (QA01749) OR HARDWARE KEY (QA01648) to be ordered to operate/program on a trunking system. IF QA01648-HARDWARE KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. Also, an Advanced System Keys (ASK- DVN4046) will be required to be ordered. ******

http://ecat.comm.mot.com/ecat/pricebooks/dup/ASK.htm

This price page consists of the following sections:

A. Required Main Models and Options for standard operation (Steps 1-9)
B. Control Station and Text Messaging Requirements
C. Optional Features
D. Aftermarket Accessories

Online APX6500Li Resources:

APX6500 Ordering Guide

APX6500 Specifications Sheet

APX Mobile Radio Brochure

APX6500Li is not approved for use on motorcycle configurations.

Any notes relating to motorcycle configurations apply to the APX7500 product only.

Please be sure to use the most current version of Motorola APX Customer Programming Software (CPS) when programming new radios

Section A: Required Main Model and Options

For standard Radio Operation (including Motorcycle) **Steps 1 - 9 must be** selected.

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

1: Main Model *(Must Select One)*

Low/Mid Power

Description	Nomenclature	APC	Price
APX6500 7/800 MHZ MID POWER MOBILE	M25URS9PW1 N	527	$1,899.00
APX6500 VHF MID POWER	M25KSS9PW1 N	527	$1,899.00
APX6500 UHF R1 MID POWER	M25QSS9PW1 N	527	$1,899.00
APX6500 UHF R2 MID POWER	M25SSS9PW1 N	527	$1,899.00

High Power

Description	Nomenclature	APC	Price
APX6500 VHF HIGH POWER	M25KTS9PW1 N	527	$2,399.00
APX6500 UHF R1 HIGH POWER	M25QTS9PW1 N	527	$2,399.00

2: Software Packages *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: 9600 OR 3600 SINGLE SYSTEM DIG	QA02756	652	$1,570.00
ENH: ANALOG 3600 TRUNKING	Q443	652	$1,100.00
Software Package INCLUDES: 3600 Baud, SmartZone, and OmniLink.			
ENH: DIGITAL CONVENTIONAL	Q811	652	$650.00
ENH: ANALOG CONVENTIONAL	QA02829	652	$400.00

3: Advanced System Key Options *(Must Select One if Trunking is ordered)*

ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648	655	$5.00
A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.			
ADD: ADVANCED SYSTEM KEY - SOFTWARE KEY	QA01749	655	$0.00
A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking.			
ADD: ADVANCED WACN KEY SUPP DATA	QA02018	655	$5.00
A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.			

3b: Optional System Enhancement Software *(Not Required)*

ADD: TDMA OPERATION	GA00580	656	$400.00

When ordering an APX6500Li model this option requires QA02756 software package

NOTE: OPTION QA00631 (DVRS PSU) ALLOWS THE MOBILE SUBSCRIBER TO BE USED AS A PSU. AN XTL MOBILE SUBSCRIBER IS STILL REQUIRED AS AN MSU

4: Control Head Hardware

O5 Control Head Hardware

Description	Nomenclature	APC	Price
ADD: APX O5 CONTROL HEAD	G442	656	$432.00
ADD: APX NO O2/O7 CH NEEDED MTCL	G88	656	$0.00

O2 Control Head Hardware

Available Only for Dash Mount. Remote Mount Available Q1 2013

ADD: APX O2 CONTROL HEAD (Grey)	GA00804	656	$532.00

O2 Control Head Colored Housing Trigger

*FOR THE IMPACT GREEN HOUSING YOU **MUST** STILL ORDER GA00804 ALONG WITH G201*

ADD:IMPACT GREEN COLOR HOUSING (O2)	G201	656	$25.00

5: Control Head Software *(Must Always Select G444 - same software for O5 and O2 control heads)*

ADD: CONTROL HEAD SOFTWARE	G444	656	$0.00

6: Mounting *(Must Select One for Mid Power Models)*

****If a remote mount cable other than 5 meters (17ft) is desired for G67, please reference the "Remote Mount Cables" section below in Section C: Optional Features****

High Power Models automatically include a Quick Release Keylock Remote Mounting option, no selection is required

Description	Nomenclature	APC	Price
ADD: DASH MOUNT	G66	656	$125.00
Required for Control Station Operation			
ADD: REMOTE MOUNT MID POWER	G67	656	$297.00
Not Compatible with High Power. G67BA is required for Motorcycle Configuration. Motorcycle Remote Mount Option is $400 DUP.			

7: RF Antenna

No Antenna Needed is Valid For All Bands

Description	Nomenclature	APC	Price
ADD: NO RF ANTENNA NEEDED	G89	656	$0.00

7/800

Description	Nomenclature	APC	Price
ADD: ANT 3DB LOW-PROFILE 762-870	G174	656	$43.00

Corresponding kit: HAF4013 Corresponding Motorcycle kit: HAF4018			
ADD: ANT 3DB ELEVATED FEED 762-870	G175	656	$75.00
NOT Compatible with Motorcycle. Corresponding kit: HAF4014.			
ADD: ANT 1/4 WAVE 762-870 MHZ	G335	656	$14.00
Corresponding kit: HAF4016 Corresponding Motorcycle kit: HAF4015 **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.**			
ALT: ANT 3DB GAIN 762-870MHZ	W484	656	$38.00
Not compatible with Motorcycle. Corresponding kit: HAF4017.			

VHF

Description	Nomenclature	APC	Price
ADD: 3BD ANT 136-174MHZ	G301	656	$58.50
Not Compatible with Motorcycle Corresponding kit: HAD4022A.			
ADD: 1/4 WAVE WHIP ROOF TOP 136-144	G296	656	$13.50
Corresponding kit: HAD4008 Corresponding Motorcycle kit: RAD4002ARB			
ADD: 1/4 WAVE ROOF TOP 144-150.8	G297	656	$13.50
Corresponding kit: HAD4007 Corresponding Motorcycle kit: RAD4003ARB			
ADD: 1/4 WAVE ROOF TOP 150.8-162	G299	656	$19.50
Corresponding kit: HAD4008 Corresponding Motorcycle kit: RAD4004ARB			
ADD:1/4 WAVE ROOF TOP ANT VHF	G300	656	$13.50
Corresponding kit: HAD4009 Corresponding Motorcycle kit: RAD4005ARB			
1/4 WAVE BROADBAND ANT 146-174	G629	656	$64.00
Not Compatible with Motorcycle Corresponding kit: HAD4017.			
ADD:VHF ANT WIDEBAND 136-174 MHZ	G792	656	$75.00
Not Compatible with Motorcycle Corresponding kit: HAD4021.			
ALT: 1/4 WV BDBD ANT 136-162 MHZ	W652	656	$47.75

UHF R1

Description	Nomenclature	APC	Price
ADD: ANT 3.5DB 380-420 MHZ MAXRAD	G427	656	$55.00
Not Compatible with Motorcycle Corresponding kit: HAE6010.			
ADD: ANT 5.0DB 380-420 MHZ MAXRAD	G429	656	$62.00
Not Compatible with Motorcycle Corresponding kit: HAE6011.			
ADD: ANT 5.0DB 445-470 MHZ	G430	656	$110.00
Not Compatible with Motorcycle Corresponding kit: RAE4014ARB.			
ADD: ANT 1/4 WAVE WHIP 380-420 MHZ	G425	656	$25.00
Not Compatible with Motorcycle Corresponding kit: HAE6012. **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.**			
ADD: ANT 1/4 WAVE WHIP 450-470 MHZ	G426	656	$25.00
Not Compatible with Motorcycle TEMPORARY: Not compatible with U2-7/600 Bandsplit. Corresponding kit: HAE4003.			
ADD: ANT 3.5DB 450-470 MHZ	G428	656	$50.00
Not Compatible with Motorcycle Corresponding kit: HAE4011.			
ADD: ANT WIDEBAND 380-470 MHZ MAXRA	G431	656	$58.00

Not Compatible with Motorcycle Corresponding kit: HAE6013.			
ADD: ANT 2DB WIDEBAND 380-520 MHZ TEMPORARY: Not compatible with U2-7/800 Bendsplit. Corresponding kit: HAE6031_	GA00505	656	$50.00

UHF R2

Description	Nomenclature	APC	Price
ADD: ANT 5.0DB 445-470 MHZ Not Compatible with Motorcycle Corresponding kit: RAE4014ARB.	G430	656	$110.00
ADD: ANT 1/4 WAVE WHIP 450-470 MHZ Not Compatible with Motorcycle TEMPORARY: Not compatible with U2-7/800 Bendsplit. Corresponding kit: HAE4003.	G426	656	$25.00
ADD: ANT 3.5DB 450-470 MHZ Not Compatible with Motorcycle Corresponding kit: HAE4011.	G428	656	$50.00
ADD: 5DB GAIN ANT 494-512 MHZ Not Compatible with Motorcycle Corresponding kit: RAE4016ARB.	G486	656	$58.00
ADD: ANT 1/4 WAVE 470-512 MHZ Not Compatible with Motorcycle TEMPORARY: Not compatible with U2-7/800 Bendsplit. Corresponding kit: HAE4004.	G490	656	$14.00
ADD: ANT 3 DB ROOF TOP 470-495 MHZ Not Compatible with Motorcycle Corresponding kit: HAE4012.	G493	656	$33.00
ADD: ANT 3 DB ROOF TOP 494-512 MHZ Not Compatible with Motorcycle Corresponding kit: HAE4013.	G494	656	$33.00
ADD: ANT LOW PROFILE 450-512 MHZ Corresponding kit: HAE6016 TEMPORARY: Not compatible with U2-7/800 Bandsplit. Corresponding Motorcycle kit: HAE6018	G510	656	$50.00
ADD: 2DB ANT WIDEBAND 450-520 MHZ TEMPORARY: Not compatible with U2-7/800 Bandsplit.Corresponding kit:HAE6015 Corresponding Motorcycle kit:HAE6015	G511	656	$70.00
ADD: ANT 2DB WIDEBAND 380-520 MHZ TEMPORARY: Not compatible with U2-7/800 Bandsplit. Corresponding kit: HAE6031_	GA00505	656	$50.00
ADD: ANT ROOF TOP 5 dB 470-494 MHz	GA00652	656	$81.75

8: Microphones ***(Must Select One)***

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED Select this option when ordering O3 Handheld Control Head (G72)	G90	656	$0.00
ADD: PALM MICROPHONE Corresponding kit: HMN1090	W22	656	$72.00
ADD: KEYPAD MIC GCAI Compatible with motorcycle configuration. Supports Remote Monitor. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079	W20	656	$180.00
ADD: CONTROL STATION DESK GCAI MIC Dash Mount Required Corresponding Kit: RMN5070	W382	656	$169.00
ENH: HAND MIC,GCAI WATER RESISTANT Compatible with motorcycle configuretion. Corresponding kit for O5: HMN1089A	G892	656	$72.00
ADD: HANDSET/HANGUP COILED CABLE Coiled Cable, No Toggle Switch Accessory Kit: HKN1017	G876	656	$415.00

ADD: VISOR MIC REMOTE MOUNT Requires G235 Footswith PTT. Kit Number: RMN5054_	W872	656	$30.00
ADD: MODEL III GCAI KEYPAD HANDSET Corresponding kit: HMN4097A	GA00221	656	$295.00
ADD: GOOSENECK PTT Requires W872 Visor Mic. Kit Number: HMN1087A	G233	656	$56.00
ADD: HANDSET/HANGUP MIC ARMORED CABLE Armored Cable, No Toggle Switch Accessory Kit: HKN1016	W874	656	$300.00
ADD: PTT FOOTSWITCH Requires W872 Visor Mic. Kit Number: GLN7276_	G235	656	$51.00
ADD: PUSHBUTTON PTT	GA00304	656	$56.00

9: Speakers ***(Must Select One)***

****G142 NO SPEAKER Required for Control Station****

Description	Nomenclature	APC	Price
ADD: SPKR 15W WATER RESISTANT	G831	656	$60.00
ADD: NO SPEAKER NEEDED	G142	656	$0.00
ADD: AUXILARY SPKR 7.5 WATT Corresponding kit: HSN4031.	B18	656	$60.00
ADD: AUXILARY SPKR 13W (3.2OHM)	W432	656	$71.50

Section B: Control Station Requirements

CONTROL STATION OPERATION

(Mid Power Radios Only)

I. First, you must review your selection of the following options from "Section 1: Required Options".

- Step 1 *(Note: Main Model)*
- Step 2 *(Note: All listed options are compliant)*
- Step 3 *(Note: All listed options are compliant)*
- Step 4 *(Note: O5 Control Head, O2 Control Head **OR** "No Control Head Needed" are compatible with Control Station Application- Must only select one).*
- Step 5 *(Note: Must Select G444. The)2 and O5 Control Head Software is compatible with Control Station Application).*
- Step 6 *(Note: Must Select G66. Control Station operation is only offered in Dash mount configuration)*
- Step 7 *(Note: All listed options are compliant)*
- Step 8 *(Note: Some Microphones are **NOT** compatible. Please read option description).*
- Step 9 *(Note: Must Select G142 - No Speaker Needed)*

II. You Must Select W665. G91 is needed for control station operation, but is an optional purchase.

SPECIFIC CONTROL STATION OPTIONS

Control Station Operation and Power Supply

Description	Nomenclature	APC	Price
ADD: CONTROL STATION POWER SUPPLY	G91	656	$269.00
ADD: CONTROL STATION OPERATION	W665	656	$70.00

III. Features listed in "Section C: Optional Features" are optional, if applicable. Please read the option's description to determine compatibility.

ASTRO Text Messaging Service

ASTRO Text Messaging Service is available on the ASTRO 25 APX 6500Li mobile radio. Text Messaging Service (TMS) allows subscriber users to send and receive text messages to other subscribers or dispatch operators. Users can select messages and addresses from a predefined list or enter freeform text messages and addresses via the keypad. Text Messaging Service is available on ASTRO Trunked IV&D Systems and Subscribers.

For full Text Messaging functionality, including freeform text messaging and addressing, must order an O2 or O5 Control Head with Keypad Microphone. O2 and O5 Control Head without the Keypad Microphone supports Limited Text Messaging functionality such as selecting predefined messages or addresses from a list programmed in the radio.

Ordering requirements for APX 6500Li Mobile:

- Requires O5 Control Head (G442) or O2 Control Head (GA00804)
- Full functionality including free form messaging requires the Keypad Microphone (W20) for O5 or O2 Control Head
- ASTRO Digital CAI Operation (QA02756)
- OR ASTRO Digital Conventional (Q811)
- Packet Data Interface (W947)

NOTE: There is no specific option to order for the Text Messaging Service on the subscribers as the functionality is included in the Packet Data option.

Section C: Optional Features

The following options are **optional** and will provide additional capabilities, if required.

System Enhancement Options

Description	Nomenclature	APC	Price
ADD: MULITCAST VOTING SCAN	G387	656	$200.00
This feature allows for voting of the Conventional Channels ONLY.			
ENH: OVER-THE-AIR PROVISIONING	G996	656	$100.00
Compatible with P25 Trunking OR ASTRO Conventional only; There is NO Analog Functionality for this feature. Requires W947 Data option. To do in field POP25 programming must use Advanced System Key (DVN4046A). Single unit POP25 with batch programming for trunking configuration coming in future.			
ADD: RS232 PACKET DATA INTERFACE	W947	656	$200.00
ADD: GPS ACTIVATION	GA00229	656	$100.00
Requires IV&D Activation.			
ENH: ENH: RADIO TRACE	G170	656	$75.00
Requires keypad mic (W20)when ordered with O5 control head.			
ADD: TRUNKED ONE TOUCH BUTTON APX	G683	656	$150.00
ADD: APX6500 RADIO AUTHENTICATION	GA01767	527	$100.00
Requires P25 Trunking (G361)			

Enhancement Level Reference Guide

GPS Antennas

******Selection is required when ordering GA00229, GPS Activation******

Description	Nomenclature	APC	Price
ADD: NO GPS ANTENNA NEEDED	GA00235	656	$0.00
ADD: GPS ANTENNA	GA00226	656	$75.00
ADD: GPS ANTENNA GLASS MT	GA00270	656	$75.00

GPS Outdoor Location Solution Overview

Encryption Algorithms

All APX6500Li Mobile Radios ship standard with Single Key Advanced Digital Privacy (ADP). Multiple algorithms are NOT supported on APX6500Li.

******ADP Privacy is not FIPS compliant - ADP Privacy not supported by OTAR - ADP is digital P25 conventional / P25 trunking only******

Description	Nomenclature	APC	Price
ADD: MULTIPLE KEY ENCRYPTION OPERATION REQUIRED when using more than one encryption algorithm or encryption key.	W969	656	$330.00
ADD: AES ENCRYPTION APX Requires P25 operation.	G843	656	$475.00
ADD: DES/DES-XL/DES-OFB ENCRYPTION Analog Secure (DES and DVP) supported in radios shipped psst June 1, 2010.	G625	656	$599.00
ADD: DVP-XL ENCRYPTION APX7500 Analog Secure (DES and DVP) supported in radios shipped past June 1, 2010.	W797	656	$487.00
ADD: 3 DAY KEY RETENTION APX Includes GA00227 REMOVABLE MEMORY 1 GB.	GA00236	656	$100.00

Expandable Memory

Description	Nomenclature	APC	Price
ADD: REMOVABLE MEMORY 1 GB Not compatible with GA00236 (ADD: 3 DAY KEY RETENTION APX) since 1 GB memory is inluded with that option.	GA00227	656	$75.00

Remote Mount Cables

(All cables are for 05 control head only)

(The 5 meter (17 FT) Cable Ships Standard)

Description	Nomenclature	APC	Price
ADD:CBL REMOTE MOUNT 10 FEET Corresponding kit: HKN6170	G618	656	$10.00
ADD: REMOTE MOUNT CBL 30 FEET Corresponding kit: HKN6168	G610	656	$25.00
ADD: REMOTE MOUNT CBL 50 FEET Corresponding kit: HKN6167	G609	656	$35.00
ADD:CBL REMOTE MOUNT 75 FEET Corresponding kit: HKN6166A	G607	656	$45.00
ADD:REMOTE MOUNT CBL 115 FEET Corresponding kit: HKN6165	G879	656	$55.00
ADD: REMOTE MOUNT CABLE 131 FT ***For Dual/Tri/Qued configuretions, the total cable length may not be greater thet 131 ft (40 meters). Therefore, this cable should not be used with a duel, tri, or quad control radio*** Corresponding kit: HKN6164	G582	656	$65.00

DEK

Description	Nomenclature	APC	Price
ADD: STATUS/MESSAGE 8	W355	656	$475.00

NOT compatible with O3 or Motorcycle Control Heeds. Not compatible with Dash Mount configuration. Requires Remote Mount configuretion. CORRESPONDING KIT: H1838A			
ADD: STATUS/MESSAGE 16	W374	656	$650.00
NOT compatible with O3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration. CORRESPONDING KIT: H1839A			

Direct Mode Entry

Description	Nomenclature	APC	Price
ADD: 8 MODE DIRECT ENTRY	W599	656	$180.00
NOT compatible with O3 or Motorcycle Control Heads. Not compatible with Desh Mount configuration. Requires Remote Mount configuration. CORRESPONDING KIT: H1835A			
ADD: 16 MODE DIRECT ENTRY	W614	656	$360.00
NOT compatible with O3 or Motorcycle Control Heeds. Not compatible with Dash Mount configuretion. Requires Remote Mount configuration. CORRESPONDING KIT: H1838A			
ADD: 24 MODE DIRECT ENTRY	W615	656	$540.00
NOT compatible with O3 or Motorcycle Control Heads or W289 Siren/PA or other DEK or Direct Mode Entry Selections. Not compatible with Dash Mount configuration. Requires Remote Mount configuretion. CORRESPONDING KIT: H1837A			

WHELEN SIREN (MOTOROLA COMPATIBLE)

NOTE: THE NEW SIREN IS COMPATIBLE WITH APX AND XTL MOBILES WITH "O" SERIES CONTROL HEADS ONLY. THIS SIREN IS NOT COMPATIBLE WITH ANY "W" SERIES CONTROL HEADS

THE SIREN BASE MODEL TT2592, ONE CABLE AND THE SIREN MOUNTING HARDWARE TT0507 MUST ALWAYS BE ORDERED (THIS SIREN IS ORDERED AS A SEPARATE LINE ITEM, TT2592 IS THE MODEL)

DEK OPTIONS ARE AVAILABLE AS OPTIONS TO THE SUBSCRIBER AS SHOWN BELOW

Description	Nomenclature	APC	Price
WHELEN/MOTOROLA SIREN	TT2592	656	$395.00
SIREN HARDWARE INSTALL KIT	TT05707AA	656	$20.00
SIREN TO RADIO CABLE	TT05708AA	656	$65.00
SIREN TO DEK CABLE - O3 CONTROL HEAD ONLY	TT05709AA	656	$78.00

SIREN DEK/SWITCH OPTIONS

ADD: DEK FOR WHELEN SIREN W/ O3 CH ONLY	GA00812	656	$105.00
ADD: DEK FOR WHELEN SIREN	GA00814	656	$105.00

Auxiliary Switches DEK

Description	Nomenclature	APC	Price
ADD: AUXILIARY SWITCH PANEL	W591	656	$165.00
Corresponding kit: HLN1196. Remote Mount Required. NOT compatible with O3 control head or motorcycle.			

Alarm

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAY AND CABLE	W116	656	$75.00
For either HORN or LIGHTS. NOT both			

Emergency

Description	Nomenclature	APC	Price
ADD: EMERGENCY ID EXT. FOOTSWITCH Corresponding kit: HLN5113.	W470	656	$56.00
ADD: EXTERNAL EMERGENCY PUSHBUTTON Corresponding kit: HLN5131	W688	656	$56.00

Data Cables

Description	Nomenclature	APC	Price
ADD: RS232 DATA INTFC CBL DASH 6 FT RS232 DATA CABLE Corresponding kit: HKN6160A.	G303	656	$50.00
ADD: RS232 DATA INTFC CBL TRK 20 FT RS232 DATA CABLE Corresponding kit: HKN6161A.	G304	656	$50.00
ADD: USB DATA INTFC CABLE-DASH 6 FT USB W/IGNITION SENSE Corresponding kit: HKN6163B. Can be used to program APX Mobile Radios.	G308	656	$50.00
ADD:USB DATA INTFC CABLE-TRK 16.5 FT USB W/IGNITION SENSE Corresponding kit: HKN6172B. Can be used to program APX Mobile Radios.	G309	656	$50.00

RF Modem

Description	Nomenclature	APC	Price
ENH: ENABLE RF MODEM The APX mobiles do not support Site Lens or System Watch. Therefore, the APX RF Modem function does not support the legacy System Watch or Site Lens applications. The APX RF Modem supports Conventional or 9600 Trunking only. Enabling the RF Modem in conventional mode allows provisioned APX portables to pass accountability data through the portable option Q445.	G319	656	$0.00

RF ID Tag

Description	Nomenclature	APC	Price
ADD: RFID LABEL	GA00268	656	$15.00

Service Options

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$64.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$246.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00
ENH: 3 YR CANADA EXTND WRNTY APX	GA00314	386	$200.00
ENH: 5 YR CANADA EXT WRNTY APX	GA00317	386	$274.00

Amplifier

(UHF and VHF Mid and High Power Radios Only***)***

Description	Nomenclature	APC	Price
ADD: RF PREAMP Options applies only to VHF & UHF radios.	W12	656	$66.00

Mounting Lock

Description	Nomenclature	APC	Price
ADD: KEY LOCK MOUNT APX	W81	656	$33.00
Remote Mount Mid Power Only.			

Test Results

Description	Nomenclature	APC	Price
ADD: PRINTED TEST RESULTS APEX	G799	656	$0.00

Section D: Aftermarket Accessories

Antenna

7/800

Description	Nomenclature	APC	Price
ANTENNA (762-870 MHZ) 3DB LOW-PROFILE	HAF4013	500	$43.00
ANTENNA (762-870 MHZ) 3DB ELEVATED FEED	HAF4014	500	$75.00
ANTENNA (762-870 MHZ) 1/4 WAVE	HAF4016	500	$23.00
ANTENNA (762-870 MHZ) 3DB GAIN COLLINEAR	HAF4017	500	$38.00

VHF

Description	Nomenclature	APC	Price
ANTENNA, VHF (136-144MHZ) 1/4 WAVE ROOF TOP	HAD4006	554	$19.50
High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohms, nominal			
ANTENNA, VHF (144-150.8 MHZ) 1/4 WAVE ROOF TOP	HAD4007	554	$19.50
High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohms, nominal			
ANTENNA, VHF (150.8-162 MHZ) 1/4 WAVE ROOF TOP	HAD4008	554	$19.50
High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohms, nominal			
ANTENNA, VHF (162-174 MHZ) 1/4 WAVE ROOF TOP	HAD4009	554	$19.50
High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohms, nominal			
ANTENNA VHF 1/4 WAVE	RAD4002ARB	554	$100.00
ANTENNA VHF 1/4 WAVE	RAD4004ARB	554	$100.00
ANTENNA VHF 1/4 WAVE	RAD4005ARB	554	$75.00
ANTENNA 132-174 3DB GAIN	HAD4022A	585	$65.50
ANT ROOF MT WB VHF 146/174	HAD4017A	500	$44.00

Adapters

Description	Nomenclature	APC	Price
AUDIO CABLE ADAPTER	HKN6158	500	$49.00
ADAPTER CABLE DATA	HKN6159	500	$49.00
KEYLOADING CABLE ADAPTER (GCAI)	HKN6182	514	$41.50
Used to adapt keyload cable TKN6531 for all APX 7500, APX,6500, APX4500, XTL 5000 and XTL 2500. Not compatible with XTL1500.			

Bull Horns for Sirens and Public Address

Description	Nomenclature	APC	Price
SPEAKER SIREN, ROUND W/CHROME & BLACK	TDN6251	706	$329.00
SPEAKER RECTANGULAR WITH CHROME FINISH	TDN6252	706	$265.00
SPEAKER UNDERHOOD WITH GRAY FINISH	TDN6253	706	$220.00
SPEAKER ROUND WITH GRAY FINISH	TDN6254	706	$248.00

Control Station Tray and Power Supply

Description	Nomenclature	APC	Price
MOBILE DESK TRAY	HLN6042	617	$77.00
PS 14V 10A 117/240 VAC.	HPN4007C	500	$296.00

Customer Programming Software

CABLE CH, PROGRAMMING, USB	HKN6184C	518	$51.00

Programming and Data Cables
(Please see CPS PART NUMBER GUIDE for cable descriptions)

CABLE KIT 20' DATA	HKN6161	476	$50.00
RS232 Data Interface Cable - REMOTE			
CABLE CH, PROGRAMMING, USB	HKN6184C	518	$51.00
CABLE, DATA, USB, 4.5M, XTL5000	HKN6172B	500	$85.00

DEK/VIP

Description	Nomenclature	APC	Price
AUDIO CABLE ADAPTER	HKN6158	500	$49.00
ADAPTER CABLE DATA	HKN6159	500	$49.00
KEYLOADING CABLE ADAPTER (GCAI)	HKN6182	514	$41.50
Used to adapt keyload cable TKN8531 for all APX 7500, APX,6500, APX4500, XTL 5000 and XTL 2500. Not compatible with XTL1500.			

Emergency

Description	Nomenclature	APC	Price
EMERGENCY FOOT SWITCH	HLN5113	604	$61.75

Microphones

XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00
AS. SPECTRA & XTL5000 DESKTOP MIC	RMN5070A	706	$172.00
HANDSET/HANGUP (HANGUP CUP)	HLN1457	706	$285.00
MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	706	$295.00
PUSH BUTTON PTT	RLN5926A	706	$39.00

Microphone Extension Cable

Description	Nomenclature	APC	Price
CABLE, MOBILE MIC EXTENSION, 10FT	PMKN4033A	706	$42.00
Not for use with the W20 GCAI Microphone.			

Power

Description	Nomenclature	APC	Price
POWER CABLE, 10 FT. (LOW/MID POWER) 30 & 35 WATT	HKN4191	412	$18.00
POWER CABLE, 20 FOOT TO 12V BATTERY VHF & UHF models.	HKN4192	508	$38.25
CABLE, POWER, 100W	HKN6110	585	$37.00
CONTROL HEAD / IGNITION SENSE POWER CABLE	HKN6188	514	$20.75

Programming AND Flash

CABLE CH, PROGRAMMING, USB	HKN6184C	518	$51.00

O5 Remote Mount Cables

CABLE, REMOTE MOUNT, 5M	~~HKN6169B~~	~~518~~	~~$58.00~~
CABLE, REMOTE MOUNT, 15M	HKN6167B	518	$75.00
CABLE, REMOTE MOUNT, 75 FT	HKN6166	514	$80.00
CABLE, REMOTE MOUNT, 115 FT	HKN6165	514	$105.00
CABLE,REMOTE MOUNT,131 FT	HKN6164	514	$122.00

Siren/DEK

Please include the H1831 model when ordering the following for DEKs:

Description	Nomenclature	APC	Price
ODYSSEY CH DEK KIT Includes cable and mounting hardware.	H1831	500	$35.75
8 STATUS/MESSAGE (W355) Message buttons are inlcuded, however, they are ONLY applicable for systems 3.X and earlier.	H1338	604	$475.00

Speakers

Description	Nomenclature	APC	Price
EXTERNAL WATER RESISTANT SPEAKER 15 WATTS	HSN4040A	795	$76.00
MCS EXT SPKR 13W	HSN4032B	500	$71.50
EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	HSN4038	476	$60.50
MCYCLE WP SPEAKER	HSN6003B	500	$63.50

Miscellaneous

Description	Nomenclature	APC	Price
WILDCARD	HLN1196	412	$165.00

Manuals

*** Currently, the APX6500 O5 User Guide and the APX6500 O5 Install Manual can be downloaded from MOL (Motorola Online). ***

*** These documents can be found in Resource Center > Product Information >Manuals >Two-Way Mobile ***

Section E: Control Head Conversion AND Retrofit Allied Sales Models

PLEASE READ ALL ALLIED MODEL AND OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

The APX 7500 O5 Remote Control Head Replacement AND Multiple Control Head Retrofit allied sales model provide the following:

- QTY 1: **REMOTE** mount control head assembly that includes a control head + flex cable + control head interface board rear housing (CHIB)
- Qty 1: Remote Control Head Power cable (HKN6188)
- Qty 1: Remote Control Head Mounting trunion and hardware
- Qty 1: Manual CD and dust cover kit
- OPTION: Must select a microphone option
- OPTION: Must select a speaker option
- OPTION: Must select a remote cable option

FIRMWARE VERSION R09.00.00 OR HIGHER IS REQUIRED.

Description	Nomenclature	APC	Price
O5 REMOTE CTRL HD/CHIB REPLACEMENT/ADDITION	H1823	500	$570.00

Microphones
(Must Select One and Only One)

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED	G90	500	$0.00
Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ADD: PALM MICROPHONE	W22	500	$72.00
Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090			
ADD: KEYPAD MIC (GCAI)	W20	514	$180.00
Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079			

Speakers
(Must Select One and Only One)

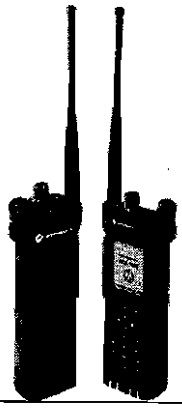
Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT	B18	500	$60.00
Corresponding kit: HSN4031.			
ADD: INCREASED AUDIO POWER 13W	W432	500	$71.50
Corresponding kit: HSN4032. NOT COMPATIBLE with W665 Control Station and Motorcycle Configuration.			
ADD: SPKR 7.5W WATER RESISANT	G832	656	$60.50
Corresponding kit: HSN4038			

Remote Mount Cables
*****The total cable length may not be greater that 131 ft (40 meters)*****
(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN8167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT) ***For Dual/Tri/Quad configurations, the total cable length may not be greeter that 131 ft (40 meters). Therefore, this cable should not be used with a duel, tri, or quad control radio*** Corresponding kit: HKN6164	G582	514	$65.00

For product questions please contact your Subscriber BDM or Product Planner (GWT846)

Data Compiled 16-May-2013 using DUP and all pricas in USD



ASTRO® Digital APX 7000™ Portable Series

700/800 MHz & VHF

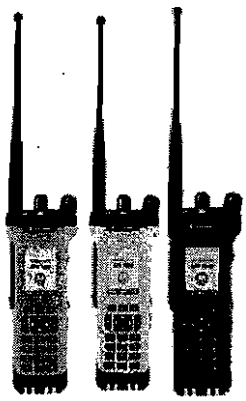
UHFR1 & 700/800 MHz

UHFR1 & VHF

UHFR2 & 700/800 MHz

UHFR2 & VHF

UHFR1 & UHFR2



Note: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749) OR HARDWARE KEY (QA01648) OR WACN KEY (QA02018) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error.

Special Note for United States - State & Local Markets only:

In accordance with FCC mandate; the APX7000 UHF R1 & UHFR2 combination (QA00571 with QA00576 OR QA00572 with QA00575) dual band radio is restricted to NOT allow programming for 25 KHz operation. These frequencies are RESTRICTED to 12.5 KHz operation only.

Ship Card

Features

All ASTRO Digital APX 7000 models include the following features:

- Dual Microphone
- 1 Watt Rated Audio
- Integrated GPS Hardware Capable*
- Seamless Wideband Scan
- Detachable Belt Clip for Top Display
- IP67 Standard
- Lilon 2900 mAh Battery
- Intelligent Lighting
- Top Display: 1 line of text, 1 line of icons, 0 menu linea
- 3 Programmable Side Buttons
- Orange Programmable Button
- 16 Position Mode Rotary Select Switch
- Angled On/Off Volume Knob
- Low Battery Alert Tone
- Antenna (Dependent on Frequency Band and Type)
- Noise Cancelletion Software
- 1 Top Mounted Programmable 3 Position Toggle Switch

ASTRO Digital APX 7000 Dual Display Model also includes:

- Universal Carry Holder
- Unified Call List
- Dual Speakers
- Front Color Display: 4 lines of text, 2 lines of icon, 1 menu line
- Radio Profiles
- Full Keypad: 3 x 4 alpha-numeric 3 programmable button, 4 way navigation, home and data

buttons

* Feature is dependant on a specific ordered option (QA00782).

** All APX7000 Portable Radios ship standard with SW & HW ADP Privacy - ships standard with Single Key.

All ASTRO Digital APX 7000 Portables are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the current RF capabilities of the radio).

******NOTE: The APX 7000 digital radios require either a SOFTWARE KEY (QA01749) OR HARDWARE KEY (QA01648) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Also, an Advanced System Keys (ASK- DVN4046) will be required to be ordered. ******

http://ecat.comm.mot.com/ecat/pricebooks/dup/ASK.htm

General Information

The ASTRO Digital APX 7000 Portable Line offers two different radio hardware models:

Hardware Model	Modes	Alphanumeric Display Lines/Characters	Keypad	Navigation Pad
ASTRO APX 7000 Top Display	1200	8 (top)	-	No
ASTRO APX 7000 Dual Display	2000	14 (front) & 8 (top)	3 x 4	Yes

Operating Modes

ASTRO Digital APX 7000 Radio Models are capable of operating in four different voice communication modes:

- Normal Analog (clear voice)
- 3.6KB ASTRO Digital (both clear and coded voice)
- 9.6 KB ASTRO 25 Digital (both Cleer and Coded voice)
- 9.6KB 12.5kHz 2 slot digital TDMA (both clear and coded voice).
- Will be capable of APCO25 Phase 2 functionality in future software releases.

MULTI BAND/SINGLE BAND

APX 7000 meets P25 public safety specifications for seamless multi-agency collaboration by offering the option to operate in two separate band configurations. APX 7000 capable of operating in 700MHz, 800MHz & VHF* and can act as 2 XTS radios in one; enabling instant, interoperable communications for improved coordination, response, and first responder safety. Public safety officials can now reduce the amount of equipment responders must carry and maintain.

TDMA

FDMA (Frequency Division Multiple Access) is a proven technology that is widely used today in radio systems and is part of APCO 25 Project 25 Phase 1 standard. FDMA carries one call per channel. TDMA (Time Division Multiple Access) will be part of P25 Phase 2 standard and provides double the voice capacity as 2 calls can share 1 channel. Customers can add more users to their systems without the need of additional frequencies or infrastructure. The APX radios support both P25 Phase 1 and TDMA technologies seamlessly. Using Motorola's unique Dynamic Dual Mode (DDM) capability, the radios dynamically switch between FDMA and TDMA without the user having to change channels. This provides interoperability on demand with existing and future networks.

FLASHport AFTERMARKET UPGRADES

The ASTRO Digital APX 7000 Portable Series Radios are part of the FLASHport Program. This means that ASTRO Digital APX 7000 hardware models can be loaded with different software packages that provide the features and functionalities that our customers require.

System Enhancement Options can be loaded at the time of radio purchase or at a later date through the use of software field upgrades (a USB cable is required for all software upgrades.) The ASTRO Digital APX 7000 portable can be upgraded electronically in the field with new features in the current system or to new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

Ordering Requirements

Ordering procedure is as follows...

		Comments
1 H97TGD9PW1AN	**ASTRO APX 7000 Portable**	
1A QA00569AA	700/800MHz PRIMARY BAND	• Choose Primary band (operational band)
1B QA00574AA	VHF SECONDARY BAND	• Choose Secondary Band (additional cost to enable)
1C QA00579AA	ENABLE DUAL BAND OPERATION	• Select this option to enable secondary band (primary band is automatically enabled)
1D QA00577AA	FRONT DISPLAY AND FULL KEYPAD	• Select this option for Dual Display Model
1E Q361AN	P25 9800 BAUD TRUNKING	• Select Operating Mode.

1. Order the APX 7000 Portable Series as the main line item.

- A Primary Band MUST be ordered with each hardware model
- A Secondary band MUST be ordered with each hardware model
- If you went the secondary band enabled, you MUST select the "enable dual band operation" option.
- Default configurations is Top Display only model. If additional front display, navigation, and keypad required, you MUST order the " front display and full keypad" option.
- Each hardware model MUST be ordered with one operation mode.
- Default battery is Lilon 2900mAh (-20°c)
- Default Antanna is the single or multi-band appropriate antenna for your RF configuration.

2. Select any other system enhancement options you desire.

- Note - APX Radio ships with 12 month standard warranty.

Common Software Features Supported By

	H37 "SMARTNET"/H38 "SmartZone"			
	"Analog Operation"(Q241)	"ASTRO Digital"(Q806)	"ASTRO Digital"(H38/Q806/Q361)	"TDMA"(QA00580AA)
	Non-Project 25 (3600 Baud)	Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	TDMA OPERATION
RADIO WIDE FEATURES				
Maximum Modes				
ASTRO Digital APX 7000 Top Display	1200	1200	1200	1200
ASTRO Digital APX 7000 Dual Display	2000	2000	2000	2000
Analog and Digital Operation	Yes	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable	No	Yes (Digital Only)	Yes (Digital Only)	Yes (Digital Only)
One Touch Operation	Yes	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes	Yes
Surveillance Mode	Yes	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes	Yes
Radio Lock	Yes	Yes	Yes	Yes
Smart Battery	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified above.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes	Yes
Monitor	Yes	Yee	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
DTMF Signaling	Future	Future	Future	Future

Quick-Call Signaling	Future	Future	Future	Future
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Conventional Interoperable Features when used in the ASTRO Digital CAI Mode (Q806).				
Unaddressed Voice Call (Dispatch Call)	Yes	Yes	Yes	Yes
Talk Group Call	Yes	Yes	Yes	Yes
Group Call Alert™	Yes	Yes	Yes	Yes
Talk Group Identification (TGID)	Yes	Yes	Yes	Yes
Selective Call (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
PTT ID (Individual Identification)	MDC-1200 Only	Yes	Yes	Yes
Call Alert Encode/Decode	MDC-1200 Only	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	MDC-1200 Only	Yes	Yes	Yes
Telephone Interconnect	Yes	Yes	Yes	Yes
Manual Phone Number Entry	Dual Display Only	Dual Display Only	Dual Display Only	Dual Display Only
Selective Radio Inhibit	MDC-1200 Only	Yes	Yes	Yes
Radio Check	MDC-1200 Only	Yes	Yes	Yes
Status/Message	MDC-1200 Only	Yes	Yes	Yes
Trunking Type II Only Features				
Maximum Number of Trunked Systems-20	Yes	Yes	Yes	Yes
Talkgroup Calls	Yes	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes	Yes
Analog/Digital Dual Mode Scan	No	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only	Status Only
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes	Yes
Remote Monitor/Radio Trace	Yes	Yes	Yes	Yes
Reprogram Request	Yes	Yes	Yes	Yes

H38 "SmartZone"				
	"Analog Operation" (Q241)	"ASTRO Digital" (Q806)	"ASTRO Digital" (H37/Q806/Q361)	"TDMA" (QA00580AA)
		Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	Project 25 (TDMA Operation)
Trunking Type II Only Features				
Voice on Control	-	-	-	-
SmartZone Automatic Site Registration	Yes	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes	Yes
SmartZone Preferred Site	Yes	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the APX 7000 portable series. Separation of frequencies can be as wide as the allowable band per radio model with no degradation of any performance specifications. If an incorrect antenna is used, degraded performance may be experienced.

ZONED OPERATION

This option converts MODE-ONLY ASTRO Digital APX 7000 portables to Zone Operation radios.

For Top Display radios, a maximum of 16 channels (conventional RX and TX pairs or trunking talkgroups) can be placed into a zone. There is a maximum of six zones (1200 modes) when zone selection operation is programmed on the 3 position toggle switch and the Zone Bank feature is programmed on a button. The Zone Bank feature allows the 3 position toggle switch to access zones 1-3 or 4-6.

For the Dual Display radios there is a meximum of 50 zones, 625 channels per zone with the overall maximum of 2000 modes. The zones and channels can be accessed with the same method as the Top Display radio. In eddition, the Duel Display radio provides "ZONE" and "CHAN" menus that ellows access to zones and channels not accessible via the switches.

PROJECT 25 ENCRYPTION

The mode of operation is programmed on a channel-by-channel basis. With the coded/clear switch set to the clear mode, the ASTRO Digital APX7000 radio is capable of transmitting clear analog voice or cleer (unencrypted) ASTRO Digital voice, depending on the channel programming. With the coded/clear switch set to the coded mode, the ASTRO Digital APX 7000 radio will transmit ASTRO Digitel encryption depending on the channel programming. ASTRO Digital encryption provides secure communications. ASTRO Digital Encryption (operation in encrypted mode while also operation in 3.6KB or 9.6KB end TDMA ASTRO mode) is capable of XL type encryptions; ASTRO Digital Encryptions does not operate with non-XL encryptions.

An encryption option is not raquirad for either clear analog operation or clear ASTRO Digital operation. Encryption can be orderad with the ASTRO Digital APX 7000 radio either as a factory installed option or seperate from the radio for later field installation. ASTRO Digital APX 7000 radio functions include selected ASTRO digital signaling and digitel speech coding.

When ordering any of the Encryption Algorithms:

- The DES-OFB and AES encryption algorithms offered are compliant with digital Project 25 standerds and does not support analog encryption operation.
- **Requires** the ASTRO Digital CAI (Q806) to operate the DES-OFB and AES encryption.

If ordering a Dual Encryption:

- The non-OFB encryption (XL versions) can be operated in either anelog , or CAI digital mode, but will not be Project 25 compliant.
- **Requires** the Multikey (H669).

When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

- Encryption Algorithms can be ordered later via Flash Port.

FIPS 140-2 Compliance

Encryption Modules equipped with AES are FIPS 140-2 compliant. Details regarding the certification, and copies of the ralevant certificates, can be obtained on the NIST website at: http://csrc.nist.gov/groups/STM/cmvp/validation.html.

Further information regarding FIPS 140-2 certification may ba found using the following link - FIPS 140-2 Crypto Module Vetidation Program (CMVP) http://csrc.nist.gov/groups/STM/cmvp/index.html

FM INFORMATION

APX 7000 *Top Display* when properly equipped with options Q393BW OR QA00581AA OR QA00582AA OR QA02818 are Factory Mutual (FM/CSA) Approved as intrinsically safe for use in Div 1, Class I, II, III, Groups C,D,E,F,G.

APX 7000 *Dual Display* when properly equipped with options Q393BW OR QA00581AA OR QA00582AA OR QA02818 are Factory Mutual (FM/CSA) Approved as intrinsically safe for use in Div 1, Class I, II, III, Groups D,F,G.

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time informetion access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon tha configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety egencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capebility to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on APX 7000 Dual Display Portable radios. Advanced Messaging is NOT supported on APX 7000 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for APX 7000 Portable Requires:

- APX 7000 Dual Display
- ASTRO Digital CAI Operation (Q806)
- P25 Conventional (H35)
- Packet Dete Interface (Q947)

OR

- APX 7000 Dual Display
- ASTRO Digital CAI Operation (Q806)
- SmartZone Operation (H38)
- ASTRO Project 25 Trunking Software (Q361)
- Packet Data Interface (Q947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit - http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm*

Outdoor Personnel Location Global Positioning Satellite (GPS) Feature

The personnel outdoor location tracking GPS feature enables a dispatcher the ability to locate on-foot patrols and out of the vehicle officers who are involved in life threatening situations. The radio user's GPS position information is sent over the ASTRO 25 Integrated Voice & Data (IV&D) network and is delivered to the dispatch operator using a third party mapping display application at the dispatch center *(Mapping Application is not yet available through Motorola at this time, however an Application Developers Tool Kit is available for 3rd party vendors to use to modify existing applications. See link below for more details.)* On the Dual Display model only it is possible to the user to determine their own location (latitude/longitude) through the use of the location menu.

During normal operation the radio battery capacity will be reduced by 10% to 15%.

In order to obtain an initial GPS fix position, the radio must be located in an open sky, outdoor environment with no barriers that could effect the signal around you or above you. During this initial fix, the radio should NOT be worn on the body as this may affect the process of acquiring signal and/or add additional time to first fix.

NOTE LIMITATIONS OF USE:

GPS works best in an open sky (clear view of the sky with no obstructions) environment. Due to the limitations of the technology, there are certain situations which prevent GPS coverage. These situations include but are not limited to:

- Underground locations (tunnels, subways, etc.)
- Inside of buildings, elevators, parking garages, trains, other covered vehicles, etc.
- Under metal or concrete roof structures
- Urban canyons (between tall buildings or under dense tree coverage)

***GPS Performance may be degraded when the radio is worn against the body and/or against the body within a vehicle.

Due to the limitations mentioned above, GPS should only be utilized as a method to assist the user with location information but not as a means for mission critical communication. Therefore, in any emergency situation, the location should always be verbally reported to the dispatcher.

For further information regarding System Requirements, go to the location solutions price pages at:
http://ecat.comm.mot.com/ecat/pricebooks/dup/ALOCATION.htm

Ordering GPS for APX 7000 Portable Requires:

- Enable Internal GPS Operation (QA00782)
- Packet Data Interface (Q947)

VHF SELF-QUIETING SPURS

Model 1 Quieters	Model 3 Quieters	Identified Source
	138.66	5.333MHz LCD PCCLK
	143.99	5.333MHz LCD PCCLK
147.455	147.455	24.576MHz MAKO clock
	149.325	5.333MHz LCD PCCLK
	154.6575	5.333MHz LCD PCCLK
	159.99	5.333MHz LCD PCCLK
	165.32	5.333MHz LCD PCCLK
	170.655	5.333MHz LCD PCCLK
172.03	172.03	24.576MHz MAKO clock

700/800 MHz SELF-QUIETING SPURS

Model 1 Quieters	Model 3 Quieters	Identified Source
767.95000	767.95000	191.9875MHz OMAP clock

UHF SELF-QUIETING SPURS

Model 1 Quieters	Model 3 Quieters	Identified Sources
383.9750	383.9750	191.6875MHz OMAP clock
393.2125	393.2125	24.576MHz MAKO clock
	394.6375	5.33MHz LCD PCLK
	399.9750	5.33MHz LCD PCLK
	405.3100	5.33MHz LCD PCLK
	410.6375	5.33MHz LCD PCLK
	415.9750	5.33MHz LCD PCLK
417.7875	417.7875	24.576MHz MAKO clock
	421.3000	5.33MHz LCD PCLK
	426.6375	5.33MHz LCD PCLK
	431.9750	5.33MHz LCD PCLK
	437.3050	5.33MHz LCD PCLK
442.3625	442.3625	24.576MHz MAKO clock
	442.6375	5.33MHz LCD PCLK
	447.9750	5.33MHz LCD PCLK

Model 1 Quieters	Model 3 Quieters	Identified Source
	453.30500	5.333MHz LCD PCLK
	458.63750	5.333MHz LCD PCLK
	463.97500	5.333MHz LCD PCLK
466.94000	466.94000	24.576MHz MAKO clock
	469.30500	5.333MHz LCD PCLK
470.40000	470.40000	16.8MHz TCXO
	474.63750	5.333MHz LCD PCLK
	479.97500	5.333MHz LCD PCLK
	485.30500	5.333MHz LCD PCLK
	490.63750	5.333MHz LCD PCLK
491.51500	491.51500	24.576MHz MAKO clock
	495.97000	5.333MHz LCD PCLK
	501.30000	5.333MHz LCD PCLK
504.00000	504.00000	16.8MHz TCXO
	506.63750	5.333MHz LCD PCLK
	511.97000	5.333MHz LCD PCLK
516.09500	516.09500	24.576MHz MAKO clock
	517.30000	5.333MHz LCD PCLK

CPS INFORMATION

****Please note that a NEW version of CPS (RVN5224) is required for initial customer orders for this product. This new version of CPS is required for the APX radio shipments. ****

FCC Information

Band Combination	Power Output	FCC ID	Emission Designators	Applicable Rules
VHF – 700/800 MHz (136-174 MHz) and (764-775, 794-805, 806-824, and 851-869 MHz)	1-6W, 1-2.5W, 1-3W	AZ489FT7036	16K0F3E**, 11K0F3E, 8K10F1E, 8K10F1D, 8K10F1W, 20K0F1E**	90 & 80
UHF R1 – 700/800 MHz (380-470 MHz) and (764-776, 793-806, 806-824, and 851-869 MHz)	1-5W, 1-2.5W, 1-3W	AZ489FT7040	16K0F3E**, 11K0F3E, 8K10F1E, 8K10F1D, 8K10F1W, 20K0F1E**	90
UHF R1 – VHF (380-470 MHz) and (136-174 MHz)	1-5W, 1-6W	AZ489FT4886	16K0F3E**, 11K0F3E, 8K10F1E, 8K10F1D, 8K10F1W, 20K0F1E**	90
UHF R2 – 700/800 MHz (450-512 MHz) and (764-775, 794-805, 806-824, and 851-869 MHz)	1-5W, 1-2.5W, 1-3W	AZ489FT7042	16K0F3E**, 11K0F3E, 8K10F1E, 8K10F1D, 8K10F1W, 20K0F1E**	90
UHF R2 – VHF (450-520 MHz) and (136-174 MHz)	1-5W, 1-6W	AZ489FT4893	16K0F3E**, 11K0F3E, 8K10F1E, 8K10F1D, 8K10F1W, 20K0F1E**	90
UHF R1 – UHF R2 * (380-406 MHz) and (406.1-520 MHz)	1-5W, 1-5W	AZ489FT4906	11K0F3E, 8K10F1E, 8K10F1D, 8K10F1W	90

Bluetooth (2402-2480 MHz)	0.012W	AZ489FT6000884KF1D, 1M27G1D	15

* Currently on the APX7000XE, only the UHFR1 & UHFR2 Dual Band Combination (FULL UHF) is limited to 12.5 kHz (Narrowband) operation.

** The FCC is mandating all Public Safety and Industrial/Business licensees convert existing 25 kHz efficiency operations in the VHF and UHF bands to minimum 12.5 kHz efficiency analog or digital operation, and that going forward they implement no more 25 kHz efficiency systems. To implement this mandate, the FCC developed rules and deadlines that impact both radio users and equipment providers.

Ordering Guide

Fleet Management Ordering Guide

APX 7000 FAQ

Brochure

Spec Sheet

Models

Description	Nomenclature	APC	Price
APX7000 DIGITAL PORTABLE RADIO	H97TGD9PW1 N	655	$2,797.00

Options

Frequency Band

Description	Nomenclature	APC	Price
ADD: 7/800MHZ PRIMARY BAND Required to Choose One Primary Band.	QA00569	655	$0.00
ADD: VHF PRIMARY BAND Required to Choose One Primary Band.	QA00570	655	$0.00
ADD: UHF RANGE 1 PRIMARY BAND Required to Choose One Primary Band.	QA00571	655	$0.00
ADD: UHF RANGE 2 PRIMARY BAND Required to Choose One Primary Band.	QA00572	655	$0.00
ADD: 7/800MHZ SECONDARY BAND Required to Choose One Secondary Band.	QA00573	655	$0.00
ADD: VHF SECONDARY BAND Required to Choose One Secondary Band.	QA00574	655	$0.00
ADD: UHF RANGE 1 SECONDARY BAND Required to Choose One Secondary Band.	QA00575	655	$0.00
ADD: UHF RANGE 2 SECONDARY BAND Required to Choose One Secondary Band.	QA00576	655	$0.00

Operating

Description	Nomenclature	APC	Price
ADD: LARGE COLOR DISPLAY AND FULL KEYPAD This option upgrades the radio to the Dual Display version. Provides: large, color display and full alpha-numeric, navigation, and programmable keypad.	QA00577	655	$500.00
ADD: ENABLE DUAL BAND OPERATION Required to Enable Dual Band Operation. When this option is chosen, an internal dual band antenna will be generated and there is no need to ADD an antenna option.	QA00579	655	$1,000.00

Operation Mode

Description	Nomenclature	APC	Price
ADD: ANALOG OPERATION	Q241	655	$0.00
ADD: ASTRO DIGITAL CAI OPERATION	Q606	655	$515.00

System Enhancement Software

Description	Nomenclature	APC	Price
ADD: CONVENTIONAL OPERATION	H35	655	$600.00
ADD: SMARTNET OPERATION	H37	655	$1,200.00

A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN

KEY will still REQUIRE a DVN4046 to be purchased.

ADD: SMARTZONE OPERATION A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	H38	655	$1,500.00
ADD: SMARTZONE OMNILINK (NON-P25) ONLY compatible with H38 SmartZone and Q806 Digital Operation (required for 3600 baud only trunked systems.) Auto roaming across zones, zone registration, trespass protection, over the air site alias, 32 preferred sites, FastStart and AllStart Call Set-up.The APX 7000 digital radios require Advanced System Keys (ASK - DVN4046A) to be configured to operate on a trunking system.	Q173	655	$200.00
ADD: P25 9600 BAUD TRUNKING MUST also order H38 & Q806. INCLUDED at "NO Charge" Q173-OmniLink. The APX 7000 digital radios require Advanced System Keys (ASK- DVN4046A) to be configured to operate on a trunking system.	Q361	655	$300.00
ADD: TDMA OPERATION Requires Q806, H38, Q361. A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA00580	655	$400.00
ADD: ADVANCED SYSTEM KEY - HARDWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA01648	655	$5.00
ADD: ADVANCED SYSTEM KEY - SOFTWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking.	QA01749	655	$0.00
ADD: ADVANCED WACN KEY SUPP DATA A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA02016	655	$5.00

Systems Enhancement Options

Description	Nomenclature	APC	Price
ADD: PROGRAMMING OVER P25 (OTAP) Compatible with P25 Trunking only. Requires Q947 Data option. To do in field POP25 programming must use Advanced System Key (DVN4046A). Single unit POP25 with batch programming for trunking configuration coming in future.	G996	655	$100.00
ADD: MULTICAST VOTING SCAN	Q387	655	$200.00
ADD: APX Personnel Accountability	Q445	461	$150.00
ADD: RADIO PACKET DATA This option is only capable of being used on P25 Digital Conventional and 9600 Trunking Systems. This option is required for IV & D operation.	Q947	655	$200.00
ADD: DVRS PSU ACTIVATION Enables DVRS Enhanced PSU functionality on APX Radios. Requires XTL MSU and Digital Operation.	QA00631	655	$100.00
ADD: ENABLE INTERNAL GPS OPERATION Must have IV&D (Q947) enabled.	QA00782	655	$100.00
ADD: APX 7000 RADIO AUTHENTICATION Requires P25 Trunking (Q361)	QA01767	655	$100.00
ADD: EXTREME 1-SIDED NOISE REDUCTION	QA01833	655	$25.00
ADD: APX7000 MAN-DOWN	QA01843	655	$150.00

Algorithm Options

Description	Nomenclature	APC	Price
ENH: DVP-XL ENCRYPTION (Analog 25 khz Only)	H797	655	$487.00
ENH: MULTIKEY	H869	655	$330.00
ENH: AES/DES,DES-XL,DES-OFB NOT compatible with Q629 or Q825. Must order multikey if you want to use both algorithms.	Q15	655	$799.00
ENH: ASTRO P25 OTAR W/ MULTIKEY Includes Tactical OTAR. Tactical OTAR can only be utilized when IV&D is purchased.	Q498	655	$740.00
ENH: DES,DES-XL,DES-OFB ENCRYPTION (Analog 25 khz) / DES-OFB (Digital 12.5 khz Only)	Q825	655	$599.00
ENH: AES ENCRYPTION	Q629	655	$475.00

Antenna

Description	Nomenclature	APC	Price
DEL: DELETE STANDARD ANTENNA	H112	481	($10.00)
ALT: 1/4 WAVE 7/8 STUBBY (NAR6595) Length: 3.93"	H122	655	$24.00
ALT: GPS STUBBY ANTENNA (NAG4000A) Deletes Standard Antenna and ADDS GPS ONLY antenna.	QA00785	655	$18.00
ALT: DUAL BAND 7/800 VHF (136-174MHZ) GPS ANTENNA (NAR6594A)	QA00787	655	$65.00
ADD: 7/800 UHF (360-520) GPS ANTENNA Length: 7.78"	QA01372	655	$65.00
ADD: UHF (380-520) GPS ANTENNA Length: 5.56"	QA01374	655	$55.00
ADD: VHF (136-188) UHF (380-520) GPS ANTENNA	QA01376	655	$65.00
ALT:UHFR1 GPS STUBBY ANTENNA (FAF52 Length: 3.66"	QA02017	655	$24.00

Battery

Description	Nomenclature	APC	Price
DEL: DELETE BATTERY (NNTN7038) The option will delete the IMPRES Lilon 2900mAh standard battery	H207	655	($47.00)
ALT: NIMH IMPRES 2100MAH IP67 (NNTN7037A) The option will delete the IMPRES Lilon 2900mAh standard battery (NNTN7038) Dimensions (HxWxD) 6.07" x 2.34" x 1.57"	H335	655	$78.00
ALT: NIMH IMPRES 2000MAH FM/CSA IP67 (NNTN7038) The option will delete the IMPRES Lilon 2900mAh standard battery (NNTN7038) Dimensions (HxWxD) 6.07" x 2.34" x 1.57"	Q393	655	$95.00

Provides full FM certification on Radio when this battery is ordered.

ALT: NIMH IMPRES 2000 MAH FM/CSA DELTA T (NNTN7035) The option will delete the NIMH IMPRES 2100MAH DELTA T NON-FM Battery (NNTN7573A) Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	QA00581	655	$100.00
Provides full FM certification on Radio when this battery is ordered. ALT: LIION IMPRES 4100 MAH FM/CSA IP67 (NNTN7033A) The option will delete the IMPRES Lilon 2900mAh standard battery (NNTN7038) Dimensions (HxWxD) 5.12" x 2.34" x 1.65"	QA00582	655	$130.00
Provides full FM certification on Radio when this battery is ordered. ALT: LIION IMPRES 4200 MAH IP67 (NNTN7034A) The option will delete the IMPRES Lilon 2900mAh standard battery (NNTN7038) Dimensions (HxWxD) 5.12" x 2.34" x 1.65"	QA00781	655	$115.00
ALT: SLIM LIION 2150MAH BATTERY(PMNN4403)	QA02021	655	$150.00
LIION IMPRES FM/CSA 2300 MAH (NNTN8092) Provides full FM certification on Radio when this battery is ordered.	QA02818	655	$50.00

Belt Clip(s)

Description	Nomenclature	APC	Price
DEL: DELETE BELT CLIP/BASIC CARRY HOLDER This option deletes the standard belt clip that ships with the Top Display model -or- deletes the standard universal carry holder that ships with the Dual Display model.	H301	655	($10.00)
ALT: BASIC CARRY HOLDER (PMLN5331) This carry holder equipped with a 2.5" belt clip ships standard with the Dual Display model. It is an alternative to the 2.5" Belt Clip (NTN8266) that ships standard with the Top Display model.	QA00779	655	$29.00
ADD: BELT CLIP 3.0" (HLN6875) Replaces the standard 2.5" belt clip that ships with the Model 1 radio with a 3"	QA01222	655	$12.00

Cable(s)

Description	Nomenclature	APC	Price
ADD: DATA CABLE PMKN4013A-GCAI cable at radio interface and USB connection at other end for computer programming. Please note that the PMKN4012A is NOT compatible with the APX 4000	Q157	655	$75.00

Enhanced Hardware Board and Applicable Software

Description	Nomenclature	APC	Price
ADD: BLUETOOTH OPTION SLOT MODULE	QA00583	655	$150.00

Housing

Description	Nomenclature	APC	Price
ALT: PUBLIC SAFETY YELLOW IP67 unless ordered with H499 Delta T option..	H64	655	$25.00
ALT: IMPACT GREEN IP67 unless ordered with H499 Delta T option.	QA01427	655	$25.00

Programming

Description	Nomenclature	APC	Price
ADD: FRONT PANEL PROGRAMMING (FPP) The APX radio can do FPP on a Trunking equipped radio only on conventional channels. Requires FPP HW dongle (NNTN7526A)to be purchased.	Q53	655	$150.00

Ruggedized Housing

Description	Nomenclature	APC	Price
ENH: SUBMERSIBLE (DELTA T) Radio comes standard with IP67(1m/30 min). Radio Ships Standard with NIMH IMPRES 2300MAH DELTA T (NNTN8092)	H499	655	$250.00

Service Options

Description	Nomenclature	APC	Price
ADD: 3 YR REPAIR SERVICE ADVANTAGE	GA00232	185	$150.00
ADD: 3 YR REPAIR SERVICE ADVANTAGE COMPREHENSIVE This service includes any liquid, chemical or physical damage to the unit.	HA00025AB	185	$275.00
ADD: 1 YR REPAIR SERVICE ADVANTAGE	Q57	185	$56.00
ADD: 2 YR REPAIR SERVICE ADVANTAGE	Q58	185	$102.00
ENH:4 YR REPAIR SERVICE ADVANTAGE Provides 4 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	Q687	185	$206.00

Manual(s)

Description	Nomenclature	APC	Price
ADD: DATA LINK MANAGER APP CD-PORTABLES Option provides the NVN5424 Data CD. Please order this option if you would like the Data CD, and are unable to obtain it through other sources such as MOL.	QA00205	855	$0.00
DEL: USER GUIDE CD This deletes the user guide CD that ships standard with the radio.	QA01274	855	$0.00

Packaging

Description	Nomenclature	APC	Price
ADD: SINGLE UNIT PACKAGING Orders ship in Sngle Unit Boxes.	H842	655	$0.00

Test Results

Description	Nomenclature	APC	Price
ADD: TEST RESULTS/RATED AUDIO PRINTOUT	H799	655	$10.00

Accessories

Adapter

Description	Nomenclature	APC	Price
APX FPP HW KEY (DONGLE)	NNTN7526	655	$37.00
APX SURVEILLANCE KEYLOAD A	NNTN7889A	742	$65.00

Antenna

Description	Nomenclature	APC	Price
UHF1 GPS STUBBY ANTENNA	FAF5259A	481	$60.00
APX 7000 700/800- GPS ANTENNA	NAF5085A	555	$45.00
APX 7000 GPS STUBBY ANTENNA This antenna is needed when a user has a Public Safety Microphone attached to the radio and still requires GPS capability. Attaches to the APX radio directly and is only used when the radio is operating in a single band configuration of UHF or 700/800 MHz.	NAG4000	555	$18.00
VHF/GPS ANTENNA	NAR6593A	555	$38.00
ANT VHF 7/800/GPS Dual Band Antenna for VHF frequency range & 7/800 frequency range. Includes GPS. 200mm in length.	NAR6594A	555	$75.00
ANT 1/4 WAVE 7/800 STUBBY	NAR6595A	655	$29.00
UHF (380-520) GPS ANTENNA	PMAE4085A	795	$21.00
UHF (380-520) /7-800 GPS ANTENNA	PMAS4000A	795	$31.00
UHF (380-520) /7-800 GPS	PMAS4001A	655	$31.00
VHF (136-174), UHF (380-520), GPS ANTENNA	PMAT4001A	655	$44.00

Battery

Description	Nomenclature	APC	Price
ASSEMBLY,BATTERY,BATT IMP FM RUGGEDIZED LIION 4100M 4300T BLK Dimensions (HxWxD) 5.12" x 2.34" x 1.65"	NNTN7033A	453	$175.00
ASSEMBLY,BATTERY,BATT IMP STD RUGGEDIZED LIION 4200M 4400T BLK Dimensions (HxWxD) 5.13" x 2.34" x 1.65"	NNTN7034A	798	$160.00
BATT IMP FM R NIMH 2000M 2200T BLK Motorola now makes batteries to an even more stringent military standard for customers who require a higher level of submersibility protection - MIL-STD-810E, Method 512.3 Immersion, which are referred to as Ruggedized PLUS. Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	NNTN7035	798	$147.00
BATT IMP FM IP67 NIMH 2000M 2200T BLK Dimensions (HxWxD) 5.34" x 2.34" x 1.57"	NNTN7036	798	$142.00
BATT IMP STD IP67 NIMH 2100M 2300T BLK Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	NNTN7037	798	$125.00
BATT IMP STD IP67 LIION 2900M 3100T BLK Dimensions (HxWxD) 3.07" x 2.34" x 1.65"	NNTN7038	798	$140.00
BATT IMP STD R NIMH 2100M 2300T BLK Motorola now makes batteries to an even more stringent military standard for customers who require a higher level of submersibility protection - MIL-STD-810E, Method 512.3 Immersion, which are referred to as Ruggedized PLUS. Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	NNTN7573	798	$130.00
BATT IMP FM R LI ION 2300M 2350T BLK """This Impress 2300MAH Lithium Ion battery is both FM certified and Ruggedized PLUS (submersible). The battery is offered in a small form factor. It is the standard battery offered with the XE(eXtrEme) radio products.""" Dimensions (HxWxD): 3.07" x 2.34" x 1.65"	NNTN8092	453	$140.00

Battery Maintenance Systems

Description	Nomenclature	APC	Price
NA FLEET MANAGEMENT LICENSE KEY	HKVN4036A	785	$489.00
IMPRES BATTERY DATA READER Provides IMPRES battery users ability to access key usage data via PC. Compatible w/all IMPRES batteries (HT/PRO,TRBO & APX adapter included)	NNTN7392	785	$250.00
FLEET MANAGEMENT RELEASE 1.2	NNTN7676C	785	$10.00
FLEET MANAGEMENT CHRGR INTERFACE UNIT Multi-Unit Charger Interface Unit, attaches to an APX or XTS IMPRES multi-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to IMPRES Battery Fleet Management.	NNTN7677A	785	$80.00
CHARGR INTRFCE UNT GEN1 IMPRES SUC Single-Unit Charger Interface Unit , attaches to an APX IMPRES single-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to the IMPRES Battery Fleet Management.	NNTN8045A	785	$35.00

Belt Clip(s)

Description

	Nomenclature	APC	Price
3" PLASTIC BELT CLIP ATTACHMENT	HLN6875A	721	$12.00
CLIP, FIRE RSM Replacement clip for Fire RSM	NNTN8271A	372	$35.00
2.5" PLASTIC BELT CLIP ATTACHMENT 2.5? Belt Clip is compatible with all APX subscribers except the APX4000 series	NTN8288B	478	$12.00

Belt Loops

Description	Nomenclature	APC	Price
CARRY CASE SHOULDER STRAP To be used with carry-case PMLN5323, PMLN5324, PMLN5329, PMLN5330, PMLN5328, PMLN5322, PMLN4474 or RLN4851.	NTN5243A	795	$23.00
APX 7000 2.5" REPLACEMENT SWIVEL BELT LOOP	PMLN5407	271	$12.00
APX 7000 2.75" REPLACEMENT SWIVEL BELT LOOP	PMLN5408	795	$12.00
APX 7000 3" REPLACEMENT SWIVEL BELT LOOP	PMLN5409	271	$12.00

Bluetooth, Mission Critical Wireless

Description	Nomenclature	APC	Price
EARPIECE W/12" CABLE FM Certified; MCW BT; Requires QA00583 to be ordered in the APX radio	NTN2572A	742	$151.00
~~ASSEMBLY,ACCESSORY,WIRELESS ACCY KIT, NFP, 9.5" CABLE~~ FM Certified MCW BT Requires QA00583 to be ordered in the APX radio	~~NTN2573B~~	~~742~~	~~$295.00~~
EARPIECE W/9.5" CABLE	NTN2575A	742	$151.00

Cable(s)

Description	Nomenclature	APC	Price
KEYLOAD CABLE FOR MACK PORTABLE	CKN8904	655	$110.00
PROGRAMMING, TEST & ALIGNMENT CABLE	PMKN4013C	037	$92.00
APX7000 KEYLOAD RS-232 CABLE	WPLN8905B	644	$155.00

Carrying Case(s)

Description	Nomenclature	APC	Price
APX 7000 LEATHER CARRY CASE WITH 3" FIXED BELT LOOP FOR NNTN7038 BAT	PMLN5323B	795	$67.00
APX 7000 NYLON CARRY CASE WITH 3" FIXED BELT LOOP FOR NNTN7033/34 BATT	PMLN5325A	795	$50.00
LEATHER CASE 2.75" SWL BL 4200MAH	PMLN5327B	795	$67.00
APX7000 N. CARRY CASE WITH 3" FIX BELT LOOP-NNTN7035/6/7/7573 BAT	PMLN5328	795	$49.00
APX 7000 L. CARRY CASE W/3" FIX BELT LOOP-NNTN7035/6/7/NNTN7573 BAT	PMLN5329	795	$69.00
APX 7000 CARRY HOLDER	PMLN5331	795	$29.00
APX FLIP CARRY CASE	PMLN5560B	795	$75.00

Charger

Description	Nomenclature	APC	Price
IMPRES CHG MU MACKINAW US/NA/CA/LA	NNTN7065B	785	$788.00
IMPRES CG MUD MACKINAW US/NA/CA/LA	NNTN7073B	785	$1,350.00
APX 7000 IMPRES SINGLE UNIT CHARGER US/NA/CA/LA base and cable	NNTN7080A	795	$125.00
APX DUAL UNIT CHARGER WITHOUT DISPLAY This next generation IMPRES charger provides advanced features, including the ability to turn on/off reconditioning, reduced reconditioning time and improved energy efficiency.	NNTN7586	795	$295.00
CHR IMP DISP DUC EXT US/NA/CA/LA	NNTN7593A	785	$375.00
IMPRES VEHICULAR CHARGER (FULL KIT) APX Portable Vehicular Charger (NNTN7624B supports APX XE subscriber line as well)	NNTN7624B	785	$390.00
APX CHARGER INSERT ADAPTER FOR XTS MULTI-UNIT CHARGER Six inserts will ship in one package. Requires charger containing Software Version 3.4 or greater.	NNTN7686A	795	$207.00
APX CHARGER INSERT ADAPTER FOR XTS SINGLE-UNIT CHARGER Only 1 SUC insert will ship. Requires charger containing Software Version 3.4 or greater.	NNTN7687A	795	$45.00
IMPRES CHARGER DISPLAY MODULE	RLN5382B	785	$95.00
ACCESSORY IMPRES CHARGER DISPLAY SALES MODULE (CDM)	RLN5382C	785	$95.00
APX TRAVEL CHARGER	RLN6434A	785	$101.00

Earpieces

Description	Nomenclature	APC	Price
RECEIVE-ONLY FOAM EARBUD WITH 3.5MM PLUG - INTRINSICALLY SAFE (FM) When used with MTP3000 models, to be used with remote speaker microphones PMMN4078A, PMMN4072A and PMMN4074A	AARLN4885	742	$25.00
D-SHELL RX-ONLY EARPIECE(3.5MM)	PMLN4620A	742	$19.00
BONE CONDUCTION EAR MIC IMPRES Ear Microphone System with Programmable Button and Large Push-to-Talk: Lightweight earpiece that picks up sound through bone conduction In digital mode, bone conduction can have a bassier (muffled) sound quality depending on the user	PMLN5653A	742	$399.00
SMALL CUSTOM EARPIECE, RIGHT EAR	RLN4760	742	$20.50
MEDIUM CUSTOM EARPIECE, RIGHT EAR	RLN4761	742	$20.50
LARGE CUSTOM EARPIECE, RIGHT EAR	RLN4762	742	$20.50
SMALL CUSTOM EARPIECE, LEFT EAR	RLN4763	742	$20.50
MEDIUM CUSTOM EARPIECE, LEFT EAR	RLN4764	742	$20.50
LARGE CUSTOM EARPIECE, LEFT EAR	RLN4765	742	$20.50
RECEIVE ONLY EARPIECE W/TRANSLUCENT TUBE	RLN4941A	742	$58.00

EAR RCVR W/COIL CBL&3.5MM PLUG	WADN4190B	742	$43.00

Headsets

Description	Nomenclature	APC	Price
HEAVY DUTY HEADSET PMLN5275B FM Certified	PMLN5275B	742	$485.00
CORE L/W HEADSET FM Certified	RMN5058A	742	$99.00
RX/TX BOOMLESS TEMPLE TRANSDUCER Temple Transducer Headset will ONLY work with: Microphone Compatibility HMN4101, HMN4103, HMN4104.	RMN5116A	742	$248.00

Multi Unit Chargers

Description	Nomenclature	APC	Price
MULTI UNIT ADAPTIVE CHARGER - US PLUG NON DISPLAY, EURO MANUAL	WPLN4120BR	785	$788.00

Public Safety Microphone(s)

Description	Nomenclature	APC	Price
APX 7000 IMPRES PUBLIC SAFETY MICROPHONE IP55 W/JACK - 18 INCH The antenna needs to be purchased seperately. The only antenna currently qualified to work with UHFR1 PSM is PMAE4085A. For optimum RF reception, it is recommended to have the correct type of PSM antenna connected to the PSM. The radio antenna must remain on the radio antenna port for proper and optimum operation. It is recommended to have both PSM antenna and radio antenna connected	PMMN4059	795	$164.00
APX 7000 IMPRES PUBLIC SAFETY MICROPHONE IP55 W/JACK - 30 INCH The antenna needs to be purchased seperately. The only antenna currently qualified to work with UHFR1 PSM is PMAE4085A. For optimum RF reception, it is recommended to have the correct type of PSM antenna connected to the PSM. The radio antenna must remain on the radio antenna port for proper and optimum operation. It is recommended to have both PSM antenna and radio antenna connected.	PMMN4061	795	$164.00

Public Safety Microphones - PSM's

Description	Nomenclature	APC	Price
APX PSM 700/800MHZ ANTENNA This antennas is tested and certified to work witht the PSM on the APX 7000 radio. If this antenna is used for any other purpose, possible coverage effects should be taken into consideration. Length: 3.54"	PMAF4002	372	$12.00
PSM IP55 WITH 3.5MM JACK RX 18IN The antenna needs to be purchased seperately. The only antenna currently qualified to work with UHFR1 PSM is PMAE4085A.	PMMN4059B	795	$164.00
PSM IP55 WITH 3.5MM JACK RX 24IN The antenna should be purchased separately. The only antenna currently qualified to work with UHFR1 PSM is PMAE4085A.	PMMN4060B	795	$164.00
PSM IP55 WITH 3.5MM JACK RX 30IN	PMMN4061B	795	$164.00

Remote Speaker Microphones - RSM's

Description	Nomenclature	APC	Price
IMPRES RSM NO DSPLY W JACK, NO CHNL	HMN4101B	372	$300.00
IMPRES RSM DSPLY W JACK, W CHNL	HMN4104B	372	$375.00
IMPRES XE RSM, GREEN The XE RSM is the latest in speaker microphone design. It is equipped with dual microphone noise cancellation technology which improves audio capability in high noise environments. Delta T submersible FM Approved *Radio must be equipped with 7.11 software	NNTN8203A	372	$335.00
RSM INTERFACE CABLE, NEXUS 5-POLE	PMKN4107A	795	$53.00
RSM INTERFACE CABLE, NEXUS 4-POLE	PMKN4112A	795	$53.00
RSM INTERFACE CABLE, HIROSE	PMKN4113A	795	$53.00
APX7000 IMPRES RSM, NOISE CANC. EMERGENCY BUTTON 3.5MM JACK IP54	PMMN4062A	795	$107.00
APX IMPRES RSM W/VOL, IP57	PMMN4065A	795	$97.00
IMPRES RSM, 3.5MM AUDIO JACK	PMMN4069A	795	$110.00
IMPRES RSM REPL COIL CORD	RLN6075	372	$85.00

Surveillance

Description	Nomenclature	APC	Price
REPLACEMENT CLEAR ACOUSTIC TUBE	0105954U29	742	$7.90
RUBBER EAR TIP, CLEAR	67009254001	795	$9.95
IMPRES 3 WIRE W/ TRANS TUBE-BLK	PMLN6123A	742	$173.00
IMPRES 3 WIRE W/ TRANS TUBE-BGE	PMLN6124A	742	$173.00
1 WIRE SURVEILLANCE KIT-BLK	PMLN6125A	742	$40.00
1 WIRE SURVEILLANCE KIT -BGE	PMLN6126A	742	$40.00
IMPRES 2 WIRE SURVEILLANCE -BLK	PMLN6127A	742	$105.00
IMPRES 2 WIRE SURVEILLANCE-BGE	PMLN6128A	742	$105.00
SMART 2 WIRE W/TRANS TUBE BLK	PMLN6129A	742	$122.00
SMART 2 WIRE W/TRANS TUBE BIEGE	PMLN6130A	742	$122.00
SURVEILLANCE LOW NOISE KIT	RLN5886A	742	$20.00
SURVEILLANCE HIGH NOISE KIT	RLN5887A	742	$32.00
RX ONLY EARPIECE W/TRANSLUCENT TUBE	RLN6424B	742	$80.00

Data Compiled 16-May-2013 using DUP and all prices in USD

ASTRO® Digital APX™ 7000XE

Dual Band Portable Radio

Model 1.5
(Top Display)
Currently Shipping

Model 3.5
(Dual Display/Keypad)
Currently Shipping

Dual Band Combinations Available:

700/800 MHz & VHF

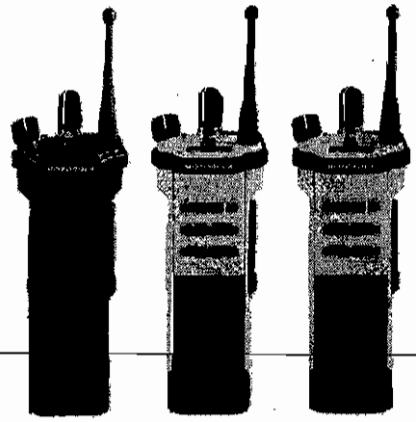
UHF R1 & 700/800 MHz

UHF R1 & VHF

UHF R2 & 700/800 MHz

UHF R2 & VHF

****UHF R1 & UHFR2**
**restricted to 12.5Khz (Narrowband)



*Black | Public Safety Yellow | Impact Green
*Standard Color

IMPORTANT NOTES

NARROWBANDING: United States - State & Local Markets only: Dual Band combinations, with the exception of Full UHF (the UHF R1 & UHF R2 Dual Band Combination), of the 7000XE currently ship with 25kHz operation. However, In order to comply with FCC Narrowbanding rules **starting January 1st, 2013** all radio product manufactured by Motorola will be restricted to 12.5kHz (Narrowband) operation.

CONFIGURATION CHANGE: All versions of the APX7000XE will be shipped with the Enhanced Feature Board (Previously the Option Board [Option QA01729]) hardware outfitted in the radio. Therefore, the list price for the APX7000XE Base Model line item has been adjusted to **$3,400.00**

STANDARD RUGGED: The APX7000XE ships standard as a RUGGED (Delta T submersion) portable and with FM certification. Changing the standard battery configuration may affect the certification of the radio i.e. if a non-FM battery is chosen, the radio will not receive FM certification

Shi

Features

All ASTRO Digital APX 7000XE models include the following features:

- Dual Microphone
- 1 Watt Rated Audio
- Integrated GPS Hardware Capable*
- Seamless Wideband Scan
- Detachable 3" Standard Belt Clip for Top Display
- Rugged (Delta T) Standard
- IMPRES Lilon 2300 mAh FM Rugged Battery
- Intelligent Lighting
- Top Display
- 3 Programmable Side Buttons
- Large Orange Programmable Button
- 16 Position Mode Rotary Select Switch
- Ergonomic Control Top: Large Channel/Volume/Orange Controls
- Low Battery Alert Tone
- Antenna (Dependant on Frequency Band and Type)
- Dual Microphone Noise Cancellation Software
- 1 Top Mounted Programmable 3 Position Toggle Switch
- eXtreme Tailed Audio Profile

Model 3.5 (Dual-Display) Model also includes:

- Universal Carry Holder
- Unified Call List
- Dual Speakers
- Front Color Display
- Radio Profiles
- Full Keypad

* Feature is dependant on a specific ordered option (QA00782).

** All APX7000XE Portable Radios ship standard with ADP Privacy.

***Single unit POP25 with batch programming for trunking configurations will be available in a future release.

All ASTRO Digital APX 7000XE Portables are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon rem within the current RF capabilities of the radio)

******NOTE: The APX 7000XE digital radios require either a SOFTWARE KEY (QA01749) OR HARDWARE KEY (QA011 to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Also, an Advanced System Keys (ASK- DVN4046) will be require be ordered. ******

http://ecat.comm.mot.com/ecat/pricebooks/dup/ASK.htm

General Information

The ASTRO Digital APX 7000XE Portable Line offers one different radio hardware models:

Hardware Model	Modes	Alphanumeric Display Lines/Characters	Keypad	Navigation Pad
ASTRO APX 7000XE Top Display	1200	8 (top)	No	No
ASTRO APX7000XE Dual Display	2000	14 (front) & 8 (top)	3 x 4	Yes

Operating Modes

ASTRO Digital APX 7000XE Radio Models are capable of operating in four different voice communication modes:

- Normal Analog (clear voice)
- 3.6KB ASTRO Digital (both clear and coded voice)
- 9.6 KB ASTRO 25 Digital (both Clear and Coded voice)
- 9.6KB 12.5kHz 2 slot digital TDM (both clear and coded voice).
- Will be capable of APCO25 Phase functionality in future software rel

MULTIBAND OR SINGLE BAND CONFIGURATION

APX 7000XE meets P25 public safety specifications for seemless multi-agency collaboration by offering the option to operate in four separate band configurations. Extreme rugged and ergon design with innovative features developed specifically for the fire market to enhance personnel safety in extreme environments. APX 7000XE capable of operating in (700MHz 800MHz), UHF 1, UHF Range 2 & VHF* and can cover the range of 2 single band radios in one package; enabling instant, interoperable communications for improved coordination, response and first respon safety. Public safety officials can now reduce the amount of equipment responders must carry and maintain.

TDMA

FDMA (Frequency Division Multiple Access) is a proven technology that is widely used today in radio systems and is part of APCO 25 Project 25 Phase 1 standard. FDMA carries one call per channel. TDMA (Time Division Multiple Access) will be part of P25 Phase 2 standard and provides double the voice capacity as 2 calls can share 1 channel. Customers can add more users to systems without the need of additional frequencies or infrastructure. The APX radios support both P25 Phase 1 and TDMA technologies seamlessly. Using Motorola's unique Dynamic Dual M (DDM) capability, the radios dynamically switch between FDMA and TDMA without the user having to change channels. This provides interoperability on demand with existing and future netw

FLASHport AFTERMARKET UPGRADES

The ASTRO Digital APX 7000XE Portable Series Radios are part of the FLASHport Program. This means that ASTRO Digital APX 7000XE hardware models can be loaded with different soft packages that provide the features and functionalities that our customers require.

System Enhancement Options can be loaded at the time of radio purchase or at a later date through the use of software field upgrades (a USB cable is required for all software upgrades.) Th ASTRO Digital APX 7000XE portable can be upgraded electronically in the field with new features in the current system or to new systems operation (contingent upon remaining within the sar sub-band) by ordering upgrade kits.

Ordering Requirements

Ordering procedure is as follows...

			Comments
1	H49TGD9PW1AN	ASTRO APX 7000XE Portable	
1A	QA00569	700/800MHz PRIMARY BAND*	• Choose Primary band (operational band)
1B	QA00574	VHF SECONDARY BAND*	• Choose Secondary Band (additional cost to enable operation (QA00579))
1C	QA00579	ENABLE DUAL BAND OPERATION	• Select this option to enable secondary band (primary band is automatically enabled)
1D	QA00577	MODEL 3 (DUAL DISPLAY & KEYPAD)	• Select this option for Dual Display & Keypad Model
1F	Q361	P25 9600 BAUD TRUNKING*	• Select Operating Mode.

*Other band selections and operating modes are available, please check chart below for available configurations.

1. Order the APX 7000XE Portable Series as the main line item.

- A Primary Band MUST be ordered with each hardware model
- A Secondary band MUST be ordered with each hardware model
- The Secondary band MUST be a different band than the Primary Band
- If you want the secondary band enabled, you MUST select the "enable duel band operation" option.
- Each hardware model MUST be ordered with one operation mode.
- Default battery is LiIon Z300mAh FM Battery (-20°c)
- Default Antenna is the single or multi-band appropriate antenna for your RF configuration.
- Default color is BLACK, color housing options are also available.

2. Select any other system enhancement options you desire.

- Note - APX Radio ships with 12 month standard warranty.

Common Software Features Supported By

H37 "SMARTNET"/H38 "SmartZone"				
	"Analog Operation"(Q241)	"ASTRO Digital"(Q806)	"ASTRO Digital"(H38/Q806/Q361)	"TDMA"(QA005
	Non-Project 25 (3600 Baud)	Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	TDMA OPERA
RADIO WIDE FEATURES				
Maximum Modes				
ASTRO Digital APX 7000 Top Display	1200	1200	1200	1200
ASTRO Digital APX 7000 Dual Display	2000	2000	2000	2000
Analog and Digital Operation	Yes	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable	No	Yes (Digital Only)	Yes (Digital Only)	Yes (Digital C
One Touch Operation	Yes	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes	Yes
Surveillance Mode	Yes	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes	Yes
Radio Lock	Yes	Yes	Yes	Yes
Smart Battery	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified above.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
DTMF Signaling	Future	Future	Future	Future
Quick-Call Signaling	Future	Future	Future	Future
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Conventional Interopereble Features when used in the ASTRO Digital CAI Mode (Q806).				
Unaddressed Voice Call (Dispatch Call)	Yes	Yes	Yes	Yes
Talk Group Call	Yes	Yes	Yes	Yes
Group Call Alert™	Yes	Yes	Yes	Yes
Talk Group Identification (TGID)	Yes	Yes	Yes	Yes
Selective Call (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
PTT ID (Individual Identification)	MDC-1200 Only	Yes	Yes	Yes
Call Alert Encode/Decode	MDC-1200 Only	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	MDC-1200 Only	Yes	Yes	Yes
Telephone Interconnect	Yes	Yes	Yes	Yes
Manual Phone Number Entry	Dual Display Only	Dual Display Only	Dual Display Only	Dual Display
Selective Radio Inhibit	MDC-1200 Only	Yes	Yes	Yes
Radio Check	MDC-1200 Only	Yes	Yes	Yes
Status/Message	MDC-1200 Only	Yes	Yes	Yes
Trunking Type II Only Features				
Maximum Number of Trunked Systems-20	Yes	Yes	Yes	Yes
Talkgroup Calls	Yes	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes	Yes
Analog/Digital Dual Mode Scan	No	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes	Yes

Dynamic Regrouping	Yes	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only	Status On
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes	Yes
Remote Monitor/Radio Trace	Yes	Yes	Yes	Yes
Reprogram Request	Yes	Yes	Yes	Yes

H38 "SmartZone"				
	"Analog Operation" (Q241)	"ASTRO Digital" (Q806)	"ASTRO Digital" (H37/Q806/Q361)	"TDMA" (QA00580AA)
		Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	Project 25 (TDMA Operation)
Trunking Type II Only Features				
Voice on Control	-	-	-	-
SmartZone Automatic Site Registration	Yes	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes	Yes
SmartZone Preferred Site	Yes	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the APX 7000XE portable series. Separation of frequencies can be as wide as the allowable band per rad model with no degradation of any performance specifications. If an incorrect antenna is used, degraded performance may be experienced.

ZONED OPERATION

This option converts MODE-ONLY ASTRO Digital APX 7000XE portables to Zone Operation radios.

For Top Display radios, a maximum of 16 channels (conventional RX and TX pairs or trunking talkgroups) can be placed into a zone. There is a maximum of twenty five zones (1200 modes)* zone selection operation is programmed on the 3 position toggle switch and the Enhanced Zone Bank feature is programmed on a button. The Enhanced Zone Bank feature allows the 3 posit toggle switch to access each set of 3 zones 1-3, 4-6, 7-9, etc.

1200 modes are accessible by the user when using the Enhanced Zone Banking feature.

For the Dual Display radios there is a maximum of 50 zones, 625 channels per zone with the overall maximum of 2000 modes. The zones and channels can be accessed with the same meth the Top-Display radio. In addition, the Dual Display radio provides "ZONE" and "CHAN" menus that allows access to zones and channels not accessible via the switches.

PROJECT 25 ENCRYPTION

The mode of operation is programmed on a channel-by-channel basis. With the coded/clear switch set to the clear mode, the ASTRO Digital APX7000XE radio is capable of transmitting clear voice or clear (unencrypted) ASTRO Digital voice, depending on the channel programming. With the coded/clear switch set to the coded mode, the ASTRO Digital APX 7000XE radio will trans ASTRO Digital encryption depending on the channel programming. ASTRO Digital encryption provides secure communications. ASTRO Digital Encryption (operation in encrypted mode while operation in 3.6KB or 9.6KB and TDMA ASTRO mode) is capable of XL type encryptions; ASTRO Digital Encryptions does not operate with non-XL encryptions.

An encryption option is not required for either clear analog operation or clear ASTRO Digital operation. Encryption can be ordered with the ASTRO Digital APX7000XE radio either as a factory installed option or separate from the radio for later field installation. ASTRO Digital APX 7000XE radio functions include selected ASTRO digital signaling and digital speech coding.

When ordering any of the Encryption Algorithms:

- The DES-OFB and AES encryption algorithms offered are compliant with digital Project 25 standards and does not support analog encryption operation.
- **Requires** the ASTRO Digital CAI (Q806) to operate the DES-OFB and AES encryption.

If ordering a Dual Encryption:

- The non-OFB encryption (XL versions) can be operated in either analog , or CAI digital mode, but will not be Project 25 compliant.
- **Requires** the Multikey (H869).

When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

- Encryption Algorithms can be ordered later via Flash Port.

FIPS 140-2 Compliance

Encryption Modules equipped with AES are FIPS 140-2 compliant. Details regarding the certification, and copies of the relevant certificates, can be obtained on the NIST website at: http://csrc.nist.gov/groups/STM/cmvp/validation.html.

Further information regarding FIPS 140-2 certification may be found using the following link - FIPS 140-2 Crypto Module Validation Program (CMVP) http://csrc.nist.gov/groups/STM/cmvp/index.html

FM INFORMATION

There are two varying levels of FM certification that the radio receives depending if you order a Model 1.5 (Top Display) or Model 3.5 (Dual Display):

Top Display: The APX 7000XE is certified FM when the standard battery is ordered (NNTN8092A). Or, when properly equipped with alternate battery options Q393 OR QA00581 OR QA005 Factory Mutual (FM/CSA) Approved as intrinsically safe for use in Div 1/Class I, II, III, Group C, D, E, F, G. NI: Div 2/Class I, Group A, B, C, D. T3C

Dual Display: The APX 7000XE is certified FM when the standard battery is ordered (NNTN8092A). Or, when properly equipped with alternate battery options Q393 OR QA00581 OR QA005 Factory Mutual (FM/CSA) Approved as intrinsically safe for use in Div 1/Class I, II, III, Group D, F, G. NI: Div 2/Class I, Group A, B, C, D. T3C

ASTRO Text Messaging Service

ASTRO Text Messaging Service will be available on APX 7000XE Dual Display Portable radios. Text Messaging Service (TMS) allows subscriber users to send and receive text messages to subscribers or dispatch operators. Users can select messages and addresses from a predefined list or enter freeform text messages and addresses via the keypad. Text Messaging Service is available on ASTRO P25 Conventional and Trunked IV&D Systems and Subscribers.

NOTE: *Text Message is NOT supported on APX7000XE Top Display Portable radios.*

Ordering ASTRO Text Messaging for APX 7000XE Portable Requires:

- APX 7000XE Dual Display (QA00577)
- ASTRO Digital CAI Operation (Q806)
- P25 Conventional (H35)
- Packet Data Interface (Q947)

OR

- APX 7000XE Dual Display (QA00577)
- ASTRO Digital CAI Operation (Q806)
- SmartZone Operation (H38)
- ASTRO Project 25 Trunking Software (Q361)
- Packet Data Interface (Q947)

Outdoor Personnel Location Global Positioning System (GPS) Feature

The personnel outdoor location tracking GPS feature enables a dispatcher the ability to locate on-foot patrols and out of the vehicle officers who are involved in life threatening situations. The radio user's GPS position information is sent over the ASTRO 25 Integrated Voice & Data (IV&D) network and is delivered to the dispatch operator using a third p mapping display application at the dispatch center *(Mapping Application is not yet available through Motorola at this time, however an Application Developers Tool Kit is available party vendors to use to modify existing applications. See link below for more details.)*

During normal operation the radio battery capacity will be reduced by 10% to 16%.

In order to obtain an initial GPS fix position, the radio must be located in an open sky, outdoor environment with no barriers that could affect the signal around you or above you. this initial fix, the radio should NOT be worn on the body as this may affect the process of acquiring signal and/or add additional time to first fix.

NOTE LIMITATIONS OF USE:

GPS works best in an open sky (clear view of the sky with no obstructions) environment. Due to the limitations of the technology, there are certain situations which preve GPS coverage. These situations include but are not limited to:

- Underground locations (tunnels, subways, etc.)
- Inside of buildings, elevators, parking garages, trains, other covered vehicles, etc.
- Under metal or concrete roof structures
- Urban canyons (between tall buildings or under dense tree coverage)

***GPS Performance may be degraded when the radio is worn against the body and/or against the body within a vehicle.

Due to the limitations mentioned above, GPS should only be utilized as a method to assist the user with location information but not as a means for mission critical communicatio Therefore, in any emergency situation, the location should always be verbally reported to the dispatcher.

For further information regarding System Requirements, go to the location solutions price pages at: http://ecat.comm.mot.com/ecat/pricebooks/dup/ALOCATION.htm

Ordering GPS for APX7000XE Portable Requires:

- Enable Internal GPS Operation (QA00762)
- Packet Data Interface (Q947)

SELF-QUIETING SPURS

VHF	UHF-R1	UHF-R2	7/800
138.658	383.976	453.305	764.928
143.991	384.000	453.600	766.464
147.456	389.309	458.638	767.952
149.324	393.216	463.971	769.536
154.657	394.642	466.944	771.072
159.990	395.975	469.304	772.800
165.323	399.975	470.400	773.285
170.656	403.200	474.637	774.144
172.032	405.308	479.970	775.680
	407.975	485.303	852.480
	410.641	490.636	854.016
	415.974	491.520	855.552
	417.792	495.969	856.800
	421.307	501.302	857.088
	426.640	504.000	858.613
	431.973	506.635	858.624
	436.800	511.968	860.160
	437.306	516.096	861.696
	442.368	517.301	863.232
	442.639		863.946

		447.972				864.768
						866.304
						867.840
						869.279
						869.376

CPS INFORMATION

****Please note that a NEW version of CPS (RVN5224) is required for initial customer orders for this product. This new version of CPS is req for the APX radio shipments. ****

FCC Information

Band/Model	Power Output	Transmitter Certification	Emissions	Applicable Rules
VHF (136-174 MHz)	1 to 6 Watts	AZ489FT7036	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 20K0F1E	90 & 80
700MHz (763-775, 793-805MHz)	1 to 2.5 Watts	AZ489FT7036	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 20K0F1E	90
800 MHz (806-824, 851-869 MHz)	1 to 3 Watts	AZ489FT7036	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 20K0F1E	90
*UHFR1 (380-470 MHz)	1 to 5 Watts	AZ489FT7040 (UHFR1/700/800) AZ489FT4886 (UHFR1/VHF)	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 20K0F1E	90
*UHFR2 (450-520 MHz)	1 to 5 Watts	AZ489FT7042 (UHFR2/700/800) AZ489FT4893 (UHFR2/VHF)	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 20K0F1E	90

*The FCC is mandating all Public Safety and Industrial/Business licensees convert existing 25 kHz efficiency operations in the VHF and UHF bands to minimum 12.5 kHz efficiency analog or digital operation, and that going forward they implement no more 25 kHz efficiency systems. To implement this mandate, the FCC developed rules and deadlines that impact both radio users and equipment providers.

Currently on the APX7000XE, only the UHFR1&UHFR2 Dual Band Combination (FULL UHF) is limited to 12.5 kHz (Narrowband) operation.

SUB-BAND PERFORMANCE	
VHF	136-174 MHz
700/800 MHz	763-775 MHz
	793-805 MHz
	806-824 MHz
	851-869 MHz
UHFR1	380-470 MHz
UHFR2	450-520 MHz

Ordering Guide

Fleet Management Ordering Guide

APX FAQ

Brochure

Spec Sheet

Models

Description **Nomenclature** **APC** **Price**

APX7000XE DIGITAL PORTABLE RADIO H49TGD9PW1 N 562 $3,400.00

Options

Frequency Band

Description	Nomenclature	APC	Price
ADD: 7/800MHZ PRIMARY BAND Required to Choose One Primary Band	QA00569	562	$0.00
ADD: VHF PRIMARY BAND Required to Choose One Primary Band	QA00570	562	$0.00
ADD: UHF RANGE 1 PRIMARY BAND Required to Choose One Primary Band. If in combination with UHF Range 2 Secondary Band, CRSD should not be sooner than May 14th 2012.	QA00571	562	$0.00
ADD: UHF RANGE 2 PRIMARY BAND Required to Choose One Primary Band. If in combination with UHF Range 1 Secondary Band, CRSD should not be sooner than May 14th 2012.	QA00572	562	$0.00
ADD: 7/800MHZ SECONDARY BAND Required to Choose One Secondary Band.	QA00573	562	$0.00
ADD: VHF SECONDARY BAND Required to Choose One Secondary Band.	QA00574	562	$0.00
ADD: UHF RANGE 1 SECONDARY BAND Required to Choose One Secondary Band. UHF R1 can NOT be selected with UHF R2 (QA00572) at this time.	QA00575	562	$0.00
ADD: UHF RANGE 2 SECONDARY BAND Required to Choose One Secondary Band. UHF R2 can NOT be chosen with UHF R1 (QA00571) at this time.	QA00576	562	$0.00

Operating

Description	Nomenclature	APC	Price
ADD: APX7000XE MODEL 3 OPTION This option upgrades the radio to the Dual Display with FULL keypad model of the APX7000XE. Provides: large, color display and full alpha-numeric, navigation, and programmable keypad.	QA00577	562	$500.00
ADD: ENABLE DUAL BAND OPERATION Required to Enable Dual Band Operation. When this option is chosen, an internal dual band antenna will be generated and there is no need to ADD an antenna option.	QA00579	562	$1,000.00

Operation Mode

Description	Nomenclature	APC	Price
ADD: ANALOG OPERATION	Q241	562	$0.00
ADD: ASTRO DIGITAL CAI OPERATION	Q806	562	$515.00

System Enhancement Software

Description	Nomenclature	APC	Price
ADD: CONVENTIONAL OPERATION	H35	562	$800.00
ADD: SMARTNET OPERATION A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	H37	562	$1,200.00
ADD: SMARTZONE OPERATION A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	H38	562	$1,500.00
ADD: SMARTZONE OMNILINK (NON-P25) ONLY compatible with H38 SmartZone and Q806 Digital Operation (required for 3600 baud only trunked systems.) Auto roaming across zones, zone registration, trespass protection, over the air site alias, 32 preferred sites, FastStart and AllStart Call Set-up.The APX 7000 digital radios require Advanced System Keys (ASK - DVN4046A) to be configured to operate on a trunking system.	Q173	562	$200.00
ADD: P25 9600 BAUD TRUNKING MUST also order H38 & Q806. INCLUDED at "NO Charge" Q173-OmniLink. The APX 7000 digital radios require Advanced System Keys (ASK- DVN4046A) to be configured to operate on a trunking system.	Q361	562	$300.00
ADD: TDMA OPERATION Requires Q806 (Digital), H38 (Smartzone), Q361 (P25) to be ordered. A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA00580	562	$400.00
ADD: ADVANCED SYSTEM KEY - HARDWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA01648	655	$5.00
ADD: ADVANCED SYSTEM KEY - SOFTWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking.	QA01749	655	$0.00
ADD: ADVANCED WACN KEY SUPP DATA A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA02018	655	$5.00

Systems Enhancement Options

Description	Nomenclature	APC	Price
ADD: PROGRAMMING OVER P25 (OTAP) POP25 requires AES encryption for ASTRO Conventional operation. Must have IV&D (Q947) enabled. To do in field POP25 programming must use Advanced System Key (DVN4046A)	G998	562	$100.00
ADD: MULTICAST VOTING SCAN	Q387	562	$200.00
ADD: APX Personnel Accountability	Q445	461	$150.00
ADD: RADIO PACKET DATA This option is only capable of being used on P25 Digital Conventional and 9600 Trunking Systems. This option is required for IV & D operation.	Q947	562	$200.00
ADD: DVRS PSU ACTIVATION Enables DVRS Enhanced PSU functionality on APX Radios. Requires XTL MSU and Digital Operation.	QA00631	655	$100.00
ENH: INTERNAL ACTIVATION AND GPS BASIC FUNCTIONALITY Must have IV&D (Q947) enabled.	QA00782	562	$100.00
ADD: APX 7000 RADIO AUTHENTICATION Requires P25 Trunking (Q361)	QA01767	655	$100.00
ADD: APX7000XE MAN-DOWN Requires QA01729 to be ordered	QA01843	562	$150.00

Algorithm Options

Description	Nomenclature	APC	Price
ENH: OVP-XL ENCRYPTION	H797	562	$487.00
ENH: MULTIKEY	H869	562	$330.00
ENH: AES/DES,DES-XL,DES-OFB NOT compatible with Q629 or Q625. Must order multikey if you want to use both algorithms.	Q15	562	$799.00
ENH: MDC&ASTRO P25 OTAR W/ MUL ncludes Tactical OTAR. Tactical OTAR can only be utilized when IV&D is purchased.	Q486	562	$740.00
ENH: DES,DES-XL,DES-OFB ENCRYP	Q625	562	$599.00
ENH: AES ENCRYPTION	Q629	562	$475.00

Antenna

Description	Nomenclature	APC	Price

This option will delete the internally triggered antenna generated by your chosen frequency configuration	H112	562	($10.00)
ALT: 1/4 WAVE 7/8 STUBBY (NAR6595) Will replace the generated 7/800 GPS single band antenna (NAF5065A) with this 7/800 GPS stubby antenna (NAR6595). *Single Band Only. Length: 3.83*	H122	562	$24.00
ADD: GPS STUBBY ANTENNA Deletes standard antenna and adds GPS ONLY antenna (NAG4500A)	QA00785	562	$18.00
ADD: 7/800 VHF(136-174) GPS ANTENNA Deletes generated antenna and adds dual band 7/800 & VHF Antenna (NAR6594). (for users who ordered a single band radio, but want dual band antenna for future use)	QA00787	562	$85.00
ADD: 7/800 UHF (380-520) GPS ANTENNA Deletes generated antenna and adds dual band 7/800 & UHF(380-520) GPS Antenna (PMAB4001A). *(For users who ordered a single band radio, but want a dual band antenna for future use)*. Length: 7.76"	QA01372	562	$85.00
ADD: UHF (380-520) GPS ANTENNA Deletes generated antenna and adds UHF (380-520) GPS antenna (PMAE4085). Length: 5.59"	QA01374	562	$55.00
ADD: VHF & UHF (380-520) GPS ANTENNA Deletes generated antenna and adds dual band VHF & UHF GPS Antenna (PMAT4001). *(For users who ordered a single band configuration, but want a dual band antenna for future use)*	QA01378	562	$85.00

Battery

Description	Nomenclature	APC	Price
DEL: DELETE BATTERY Deletes standard FM/Delta-T 2300mAh battery (NNTN8092A) from the order. *Radio will not receive FM certification if this option is chosen*	H207	562	($47.00)
ALT: APX7000XE NIMH IMPRES 2100MAH IP67 BATT This will delete the standard FM/Delta T 2300mAh battery (NNTN8092A) and replace with NIMH 2100MAH Battery (NNTN7037A) *Radio will NOT receive FM certification if this option is chosen*	H335	562	$78.00
ALT: NIMH IMPRES 2000 MAH FM IP67 This option will delete the generated standard FM/Delta T 2300mAH battery (NNTN8092A) and replace with NIMH 2000 MAH FM Battery (NNTN7036A). *IP67 Submersible	Q393	562	$95.00
ALT: NIMH IMPRES 2000MAH FM,DELTA T This option will delete the generated standard FM/Delta T 2300mAH battery (NNTN8092A) and replace with NIMH IMPRES 2000MAH FM DELTA T -Battery (NNTN7035A)	QA00581	562	$100.00
ALT: NIMH IMPRES 2000MAH DELTA T (NON-FM VERSION)	QA00581	562	$0.00
ALT: APX7000 LIION 4000MAH IMPRES FM IP67 BATT This option will delete the generated standard FM/Delta T 2300mAH battery (NNTN8092A) and replace with LIION 4000MAH IMPRES FM IP67 Battery (NNTN7033A). *IP67	QA00582	562	$100.00
ALT: APX7000 LIION 4200MAH IMPRES IP67 BATT Deletes standard FM/Delta-T 2300mAh battery (NNTN8092A) and replaces with 4200mAH high capacity LIION battery (NNTN7034A). *Radio will not receive FM certification if this battery is chosen* *IP67	QA00781	562	$115.00
ALT: LITHIUM ION IMPRES IP67 2900 Deletes FM/Delta T battery (NNTN8092A) and replaces with 2900mah NON-FM battery (NNTN7038A). *Radio will not be FM certified if this option is chosen* *IP67	QA01837	562	$100.00
ALT: NIMH IMPRES 2000MAH DELTA T (NON-FM VERSION) Deletes standard FM/Delta-T 2300mAh battery (NNTN8092A) and replaces with 2000mAh NIMH Delta T Battery (NNTN7573A). *Radio will not receive FM certification if this battery is chosen*	QA01954	562	$120.00
ALT: SLIM LIION 2100MAH BATTERY Deletes standard FM/Delta-T 2300MAH (NNTN8092A) battery and replaces with 2100MAH Slim Form factor battery (PMNN4403A). *Radio will not receive FM certification if this battery is chosen* *IP67	QA02021	562	$80.00

Belt Clip(s)

Description	Nomenclature	APC	Price
DEL: DELETE BELT CLIP	H301	562	($10.00)
ALT: CARRY HOLDER OPTION This NEW APX7000XE carry holder will ship standard with the Model 3.5 (Dual Display) radios. However, if you want a plastic carry holder instead of a belt clip on the back of the Model 1.5, you can select this option.	QA00779	562	$29.00

Cable(s)

Description	Nomenclature	APC	Price
ADD: DATA CABLE	Q157	562	$75.00

Enhanced Hardware Board and Applicable Software

Description	Nomenclature	APC	Price
ADD: BLUETOOTH SOFTWARE	QA00583	562	$150.00

Housing

Description	Nomenclature	APC	Price
ALT: APX 7000XE HOUSING YELLOW	H84	562	$25.00
ALT:APX 7000XE HOUSING GREEN	QA01427	562	$25.00

Programming

Description	Nomenclature	APC	Price
ADD: FRONT PANEL PROGRAMMING OPTION Requires a Model 3.5 (Dual Display Radio). Requires FPP HW dongle (NNTN7526A)to be purchased. Front Panel Programming can ONLY be done on Conventional (Non-Trunking) Channels.	Q53	562	$150.00

Service Options

Description	Nomenclature	APC	Price
ADD: 3 YR REPAIR SERVICE ADVANTAGE	GA00232	185	$150.00
ADD: 3 YR REPAIR SERVICE ADVANTAGE COMPREHENSIVE This service includes any liquid, chemical or physical damage to the unit.	HA00025AB	185	$275.00
ADD: 1 YR REPAIR SERVICE ADVANTAGE	Q57	185	$86.00
ADD: 2 YR REPAIR SERVICE ADVANTAGE	Q58	185	$102.00
ENH:4 YR REPAIR SERVICE ADVANTAGE Provides 4 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	Q857	185	$206.00

UNDEFINED

Description	Nomenclature	APC	Price
ADD: FRONT PANEL PROGRAMMING	Q53	562	$0.00

Manual(s)

Description	Nomenclature	APC	Price
ADD: DATA LINK MANAGER APP CD-PORTABLES Option provides the NVN3424 Data CD. Please order this option if you would like the Data CD, and are unable to obtain it through other sources such as MOL.	QA00205	655	$0.00
DEL: USER GUIDE CD	QA01274	562	$0.00

Packaging

Description	Nomenclature	APC	Price
ADD: SINGLE UNIT PACKAGING	H642	562	$0.00

Test Results

Description	Nomenclature	APC	Price
ADD: TEST RESULTS / RATED AUDIO PRINTOUT	H799	562	$10.00

Accessories

Adapter

Description	Nomenclature	APC	Price
APX FPP HW KEY (DONGLE)	NNTN7526	655	$37.00
APX SURVEILLANCE KEYLOAD A	NNTN7869A	742	$65.00

Antenna

Description	Nomenclature	APC	Price
UHF1 GPS STUBBY ANTENNA	FAF5258A	481	$60.00
APX 7000 700/800- GPS ANTENNA	NAF5085A	555	$45.00
ANT VHF 7/800/GPS Dual Band Antenna for VHF frequency range & 7/800 frequency range. Includes GPS. 200mm in length.	NAR6594A	555	$75.00
ANT 1/4 WAVE 7/800 STUBBY	NAR6595A	655	$29.00
UHF (380-520) GPS ANTENNA	PMAE4065A	795	$21.00
VHF (136-174), UHF (380-520), GPS ANTENNA	PMAT4001A	655	$44.00

Battery

Description	Nomenclature	APC	Price
ASSEMBLY,BATTERY,BATT IMP FM RUGGEDIZED LIION 4100M 4300T BLK Dimensions (HxWxD) 5.12" x 2.34" x 1.65"	NNTN7033A	453	$175.00
ASSEMBLY,BATTERY,BATT IMP STD RUGGEDIZED LIION 4200M 4400T BLK Dimensions (HxWxD) 6.13" x 2.34" x 1.65"	NNTN7034A	796	$180.00
APX 7000 IMPRES NIMH 2000MAH RUGGEDIZED PLUS FM BATTERY Motorola now makes batteries to an even more stringent military standard for customers who require a higher level of submersibility protection - MIL-STD-810E, Method 512.3 Immersion, which are referred to as Ruggedized PLUS. Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	NNTN7035	798	$147.00
APX 7000 IMPRES NIMH 2000MAH SUBMERSIBLE (IP67) FM BATTERY Dimensions (HxWxD) 5.34" x 2.34" x 1.57"	NNTN7036	798	$142.00
APX 7000 IMPRES NIMH 2100MAH SUBMERSIBLE (IP67) BATTERY Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	NNTN7037	798	$125.00
BATT IMP STD IP67 LIION 2900M 3100T BLK Dimensions (HxWxD) 3.07" x 2.34" x 1.65"	NNTN7038	798	$140.00
APX 7000 IMPRES NIMH 2100MAH RUGGEDIZED PLUS BATTERY Motorola now makes batteries to an even more stringent military standard for customers who require a higher level of submersibility protection - MIL-STD-810E, Method 512.3 Immersion, which are referred to as Ruggedized PLUS. Dimensions (HxWxD) 5.07" x 2.34" x 1.57"	NNTN7573	798	$130.00
BATT IMP FM R LI ION 2300M 2350T ***This Impress 2300MAH Lithium Ion battery is both FM certified and Ruggedized PLUS (submersible). The battery is offered in a small form factor. It is the standard battery offered with the XE (eXtrEme) radio products.*** Dimensions (HxWxD): 3.07" x 2.34" x 1.65"	NNTN8092	453	$140.00
LIION IMPRES 2150MAH IP67 BATT Dimensions (HxWxD) 3.39" x 2.34" x 1.46"	PMNN4403	453	$125.00

Battery Maintenance Systems

Description	Nomenclature	APC	Price
IMPRES BATTERY DATA READER Provides IMPRES battery users ability to access key usage data via PC. Compatible w/all IMPRES batteries (HT/PRO,TRBO & APX adapter included)	NNTN7392	785	$250.00
FLEET MANAGEMENT RELEASE 1.2	NNTN7676C	765	$10.00
FLEET MANAGEMENT CHRGR INTERFACE UNIT Multi-Unit Charger Interface Unit, attaches to an APX or XTS IMPRES multi-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to IMPRES Battery Fleet Management.	NNTN7677A	785	$80.00
CHARGR INTRFCE UNT GEN1 IMPRES SUC Single-Unit Charger Interface Unit , attaches to an APX IMPRES single-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to the IMPRES Battery Fleet Management.	NNTN8045A	785	$35.00

Belt Clip(s)

Description	Nomenclature	APC	Price
3" PLASTIC BELT CLIP ATTACHMENT	HLN6875A	721	$12.00
CLIP, FIRE RSM Replacement clip for Fire RSM	NNTN8271A	372	$35.00

Belt Loops

Description	Nomenclature	APC	Price
BELT LOOP, HIGH ACTIVITY D CLIP	NTN9213	476	$20.00
APX 7000 2.75" REPLACEMENT SWIVEL BELT LOOP	PMLN5408	795	$12.00
APX 7000 3" REPLACEMENT SWIVEL BELT LOOP	PMLN5409	271	$12.00

Bluetooth, Mission Critical Wireless

Description	Nomenclature	APC	Price
EARPIECE W/12" CABLE FM Certified; MCW BT; Requires QA00583 to be ordered in the APX radio	NTN2572A	742	$151.00
ASSEMBLY,ACCESSORY,WIRELESS ACCY KIT, NFP, 9.5" CABLE FM Certified MCW BT Requires QA00583 to be ordered in the APX radio	NTN2573B	742	$295.00
EARPIECE W/9.5" CABLE	NTN2575A	742	$151.00

Cable(s)

Description	Nomenclature	APC	Price
APX7000 KEYLOAD RS-232 CABLE	WPLN6905B	844	$155.00

Carrying Case(s)

Description	Nomenclature	APC	Price
APX7000XE CC 2.75 SWLBL2600/2150MAH	NNTN8111A	271	$65.00
APX7000XE CC 3 FIX BL 2600/2150MAH	NNTN8112A	271	$62.00
APX7000XE CC 2.75 SWL BL 4100MAH	NNTN8113A	271	$65.00
APX7000XE CC 3 FIX BL 4200 MAH	NNTN8114A	271	$62.00
APX7000XE CC 2.75 SWL BL 4200MAH	NNTN8115A	271	$65.00
APX7000XE CC 3 FIX BL 4200MAH	NNTN8116A	271	$62.00
CARRY CASE STRAP WITH SNAPS, LONG	PMLN5800A	271	$23.00
APX7000XE UNIVERSAL CARRY HOLDER	PMLN8102A	271	$29.00

This is the standard carry case for the Model 3.5 (Dual Display/Keypad) version of the APX7000XE radio.

Charger

Description	Nomenclature	APC	Price
IMPRES CHG MU MACKINAW US/NA/CA/LA	NNTN7065B	795	$788.00
IMPRES CG MUD MACKINAW US/NA/CA/LA	NNTN7073B	795	$1,350.00
IMPRES CG SU MACKINAW BASE UNIT	~~NNTN7079A~~	~~795~~	~~$420.00~~
APX DUAL UNIT CHARGER WITHOUT DISPLAY	NNTN7586	795	$295.00

This next generation IMPRES charger provides advanced features, including the ability to turn on/off reconditioning, reduced reconditioning time and improved energy efficiency.

IMPRES VEHICULAR CHARGER (FULL KIT)	NNTN7824B	795	$390.00

APX Portable Vehicular Charger (NNTN7824B supports APX XE subscriber line as well)

APX CHARGER INSERT ADAPTER FOR XTS MULTI-UNIT CHARGER	NNTN7668A	795	$207.00

Six inserts will ship in one package. Requires charger containing Software Version 3.4 or greater.

APX CHARGER INSERT ADAPTER FOR XTS SINGLE-UNIT CHARGER	NNTN7667A	795	$45.00

Only 1 SUC insert will ship. Requires charger containing Software Version 3.4 or greater.

IMPRES CHARGER DISPLAY MODULE	RLN5382B	795	$95.00
ACCESSORY IMPRES CHARGER DISPLAY SALES MODULE (CDM)	RLN5382C	795	$95.00
APX TRAVEL CHARGER	RLN6434A	795	$101.00
APX 7000 IMPRES CG SU APX7000 US/NA/CA/LA	WPLN7080	795	$125.00

Earpieces

Description	Nomenclature	APC	Price
RECEIVE-ONLY FOAM EARBUD WITH 3.5MM PLUG - INTRINSICALLY SAFE (FM)	AARLN4885	742	$25.00

When used with MTP3000 models, to be used with remote speaker microphones PMMN4078A, PMMN4072A and PMMN4074A

BONE CONDUCTION EAR MIC	PMLN5853A	742	$389.00

IMPRES Ear Microphone System with Programmable Button and Large Push-to-Talk. Lightweight earpiece that picks up sound through bone conduction

In digital mode, bone conduction can have a bassier (muffled) sound quality depending on the user

RECEIVE ONLY EARPIECE W/TRANSLUCENT TUBE	RLN4941A	742	$58.00

When used with MTP3000 models, to be used with remote speaker microphones PMMN4078A, PMMN4072A and PMMN4074A

EAR RCVR W/COIL CBL&3.5MM PLUG	WADN4190B	742	$43.00

Headsets

Description	Nomenclature	APC	Price
IMPRES TEMPLE TRANSDUCER	PMLN5101A	742	$226.00

FM Certified

HEAVY DUTY HEADSET PMLN5275B	PMLN5275B	742	$485.00

FM Certified

HEAVY DUTY HEADSET PMLN5275C	PMLN5275C	742	$679.00
CORE L/W HEADSET	RMN5058A	742	$98.00

FM Certified

RX/TX BOOMLESS TEMPLE TRANSDUCER	RMN5116A	742	$246.00

Temple Transducer Headset will ONLY work with: Microphone Compatibility HMN4101, HMN4103, HMN4104.

Public Safety Microphone(s)

Description	Nomenclature	APC	Price
APX 7000 IMPRES PUBLIC SAFETY MICROPHONE IP55 W/JACK - 18 INCH	PMMN4059	795	$164.00

The antenna needs to be purchased separately. The only antenna currently qualified to work with UHFR1 PSM is PMAE4065A.

For optimum RF reception, it is recommended to have the correct type of PSM antenna connected to the PSM. The radio antenna must remain on the radio antenna port for proper and optimum operation. It is recommended to have both PSM antenna and radio antenna connected

APX 7000 IMPRES PUBLIC SAFETY MICROPHONE IP55 W/JACK - 30 INCH	PMMN4061	795	$164.00

The antenna needs to be purchased separately. The only antenna currently qualified to work with UHFR1 PSM is PMAE4065A.

For optimum RF reception, it is recommended to have the correct type of PSM antenna connected to the PSM. The radio antenna must remain on the radio antenna port for proper and optimum operation. It is recommended to have both PSM antenna and radio antenna connected.

Public Safety Microphones - PSM's

Description	Nomenclature	APC	Price
APX PSM 700/800MHZ ANTENNA	PMAF4002	372	$12.00

This antennas is tested and certified to work with the PSM on the APX 7000 radio. If this antenna is used for any other purpose, possible coverage effects should be taken into consideration. Length: 3.54"

PSM IP55 WITH 3.5MM JACK RX 18IN	PMMN4059B	795	$164.00

The antenna needs to be purchased separately. The only antenna currently qualified to work with UHFR1 PSM is PMAE4065A.

PSM IP55 WITH 3.5MM JACK RX 24IN	PMMN4060B	795	$164.00

The antenna should be purchased separately. The only antenna currently qualified to work with UHFR1 PSM is PMAE4065A.

Remote Speaker Microphones - RSM's

Description	Nomenclature	APC	Price
IMPRES RSM NO DSPLY W JACK, NO CHNL	HMN4101B	372	$300.00
IMPRES RSM DSPLY W JACK, W CHNL	HMN4104A	795	$375.00
IMPRES RSM DSPLY W JACK, W CHNL	HMN4104B	372	$375.00
IMPRES XE RSM, GREEN	NNTN8203A	372	$335.00

The XE RSM is the latest in speaker microphone design. It is equipped with dual microphone noise cancellation technology which improves audio capability in high noise environments.
Delta T submersible
FM Approved
*Radio must be equipped with 7.11 software

APX7000 IMPRES RSM, NOISE CANC. EMERGENCY BUTTON 3.5MM JACK IP54	PMMN4062A	795	$107.00
APX IMPRES RSM W/VOL, IP57	PMMN4065A	795	$97.00

IMPRES RSM, 3.5MM AUDIO JACK	PMMN4069A	795	$110.00
IMPRES RSM REPL COIL CORD	RLN6075	372	$85.00

Surveillance

Description	Nomenclature	APC	Price
REPLACEMENT CLEAR ACOUSTIC TUBE	0105954U29	742	$7.80
RUBBER EAR TIP, CLEAR	67009254001	795	$9.95
IMPRES 3 WR W/TRANS TUBE BLK Kit with date code 0848 and beyond are compatible with APX	PMLN5111A	742	$173.00
IMPRES 3 WR W/TRANS TUBE BEIGE Kit with date code 0848 and beyond are compatible with APX	PMLN5112A	742	$173.00
SURVEILLANCE KITS CORE 1 WIRE BLK	RLN5878A	742	$40.00
SURVEILLANCE KIT 1 WIRE - BGE	RLN5879A	742	$40.00
IMPRES 2 WIRE W/TRANS TUBE BLK	RLN5882A	742	$122.00
IMPRES 2 WIRE W/TRANS TUBE BEIGE	RLN5883A	742	$122.00
SURVEILLANCE LOW NOISE KIT	RLN5886A	742	$20.00
SURVEILLANCE HIGH NOISE KIT	RLN5887A	742	$32.00
RX ONLY EARPIECE W/TRANSLUCENT TUBE	RLN6424B	742	$80.00

Customer Programming Software

Description	Nomenclature	APC	Price
CPS R08.01.00 ASTRO DIG APX POR MOB	RVN5224P	371	$265.00

Data Compiled 16-May-2013 using DUP and all prices in USD

Motorola APX™ 7500 Multi Band Consolette

VHF(136 -174MHz), UHF R1(380-470MHz), UHF R2(450-512MHz) & 700/800 MHz

Conventional, Secure and Trunked Radio Systems

L999 - Full Front Panel w/DC/Keypad/Clock/VU

Ship Card

Features

Standard APX™ 7500 Multi Band Consolette Features.

		APX™ 7500 Consolette	
	FEATURES	**Full Feature Front Panel L999AA**	**Limited Feature Front Panel L998AA**
Front Panel Functionality	Local Control head Supported	√	NO
	GCAI Paddle Mic Supported	√	NO
	Internal Local Speaker	√	NO
	Clock	√	√
	VU Meter	√	√
	Auxillary Display	√	√
	Numeric Keypad and Programmable Buttons	√	NO
	External Keyload Port	√	√
	External Programming Port(s)	√	√
	External IV&D Port	√	√
	Tactical OTAR Port	√	√
	Control Head ON/OFF Switch	√	NO
Rear Panel Functionality	TRC with Wireline	√	√
	E & M with Wireline	√	√
	ACIM with Wireline	√	√
	APCO Interface	√	√
	Crospatch Interface	√	√
	Crossmute Interface	√	√
	Recorder	√	√
	Auxillary Audio Jack	√	√
	Auxillary External Mobile Speaker	√	√
	Dual Headset Interfaces	√	NO
	General Purpose Inputs/Outputs	√	√
	Emergency Footswitch	√	√
	Power Supply with Battery Revert	√	√
	AC Power ON/OFF Switch	√	√
	Intermittent Duty Cycle (EIA/TIA)	√	√
	Service without lid removal	√	√
	APX CPS/Flashport programming	√	√
	Consolette Codeplug Configuration Programming	√	√
	Dual Band Supported	√	√
	Mobile supported Signalling types:	√	√
	Analog (including MDC), ASTRO Conventional, Type II Trunking, APCO Trunking (including F2)	√	√
	Modes of operation (Conventional, Smartnet, Smartzone, Omni-Link)	√	√
	HW Encryption, Multi-key, SW Encryption, OTAR	√	√
	MC3000/DGT9000 Supported	NO	NO

	TRC with Wireline	√	√
	E&M with Wireline	√	√
	ACIM with Wireline	√	√
	APCO Interface	√	√
	SB9600/SBEP	NO	NO
	Crosspatch Interface	√	√
	Crossmute Interface	√	√
	Recorder	√	√
	Auxiliary Audio Jack	√	√
	Auxiliary External Mobile speaker	√	√
	Dispatcher Headset Interface (2	√	NO
	General Purpose Inputs/Outputs	√	√
General	Emergency Footswitch	√	√
	Gooseneck Mic and PTT Footswitch	√	NO
	Control Heads Supported	√	NO
	GCAI mics supported	√	NO
	Internal locel speaker	√	NO
	Clock	√	√
	VU Meter	√	√
	Auxiliary Display	√	√
	Numeric Keypad and Programmable Buttons	√	NO
	Over-the-air Alert Tones	√	NO
	Keyloading	√	√
	IV&D data supported	√	√
	Tactical OTAR	√	√
EXTENDED DISPATCH OPTION GA00469	DESCRIPTION DECODE FUNCTIONALITY • Emergency Alarm - a subscriber unit can send an emergency alarm over-the-air at any time. • Status Update - a subscriber unit can send a status update over-the-air at any time. • Message Update - a subscriber unit can send a message update over-the-air at any time. ENCODE FUNCTIONALITY • Status Request - allows Console user the ability to remotely determine a specific subscriber's status. • Radio Enable/Disable - allows the Console user the ability to make unusable (inhibit) a specific subscriber and correspondingly restore a unit to normal operation (Un-Inhibit). • Radio Check - allows the Console user the ability to remotely ping a specific subscriber. • Remote Monitor - allows Console user the ability to remotely put a specific subscriber into transmit mode. • Emergency Alarm ACK - The corresponding ACK from the Console is transmitted by the Consolette over-the-air back to the specified subscriber on Conventional channels only.	√	√

Standard Transceiver APX™ 7500 Mobile Features

• Up to 1250 Channels	• Available in Multiple-Band Operation
• Trunking Standards supported: Clear or digital encrypted ASTRO® 25 Trunked Operation Capable of SmartZone®, SmartZone Omnilink, SmartNet®	• Narrow and wide bandwidth digital receiver (6.25kHz/12.5kHz/25kHz)

• Analog MDC-1200 and Digital APCO P25 Conventional System Configurations	• Embedded digital signaling (ASTRO and ASTRO 25)
• Seamless wideband scan	• Intelligent lighting on Full Feature Front Panel with 05 Control Head Display.
• Radio profiles	Unified Call List
• Utilizes Windows XP and Vista Customer Programming Software (CPS)	• Supports USB Communications
• Built in FLASHport™ support	• Standard Advanced Digital Privacy
• Voice Announcements	

Optional Features

• Enhanced Encryption Capability

• Programming over Project 25 (POP25)

• Text Messaging

• Over the Air Re-Key (OTAR)

FLASHport®

All ASTRO Digital APX™ 7500 Consolette are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the current RF capabilities of the radio)

******NOTE: The APX™ 7500 digital Consolette radios require either a SOFTWARE KEY (QA01749) OR HARDWARE KEY (QA01648) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY is ORDERED, SUPPLEMENTAL DATA is required to be entered. Also, an Advanced System Keys (ASK- DVN4046) will be required to be ordered. ******

******NOTE: The APX™ 7500 digital Consolette radios require Advanced System Keys (ASK) to be configured to operate/program on a trunking system. These ASKs are the same ASKs that are used with the XTS/XTL radio products.******

http://ecat.comm.mot.com/ecat/pricebooks/dup/ASK.htm

General Information

Operating Modes

ASTRO Digital APX™ 7500 Radio Models are capable of operating in four different voice communication modes:

Normal Analog (clear voice)	• 3.6KB ASTRO Digital (both clear and coded voice)	• 9.6 KB ASTRO 25 Digital (both clear and coded voice)	• 9.6KB 12.5kHz 2 slot digital TDMA (both clear and coded voice). • Will be capable of APCO25 Phase 2 functionality in future software releases.

MULTI BAND/SINGLE BAND

APX™ 7500 meets P25 public safety specifications for seamless multi-agency collaboration by offering the option to operate in two separate band configurations. APX™ 7500 capable of operating in 700MHz, 800MHz & VHF* and can act as 2 XTL radios in one; enabling instant, interoperable communications for improved coordination, response, and first responder safety. Public safety officials can now reduce the amount of equipment responders must carry and maintain.

*additional dual band combinations will be available in the future with the rollout of UHF Range 1 and 2

TDMA

FDMA (Frequency Division Multiple Access) is a proven technology that is widely used today in radio systems and is part of APCO 25 Project 25 Phase 1 standard. FDMA carries one call per channel. TDMA (Time Division Multiple Access) will be part of P25 Phase 2 standard and provides double the voice capacity as 2 calls can share 1 channel. Customers can add more users to their systems without the need of additional frequencies or infrastructure. The APX radios support both P25 Phase 1 and TDMA technologies seamlessly. Using Motorola's unique Dynamic Dual Mode (DDM) capability, the radios dynamically switch between FDMA and TDMA without the user having to change channels. This provides interoperability on demand with existing and future networks.

FLASHport AFTERMARKET UPGRADES

The ASTRO Digital APX™ 7500 Mobile Series Radios are part of the FLASHport Program. This means that ASTRO Digital APX™ 7500 hardware models can be loaded with different software packages that provide the features and functionalities that our customers require.

System Enhancement Options can be loaded at the time of radio purchase or at a later date through the use of software field upgrades (a USB cable is required for all software upgrades.) The ASTRO Digital APX™ 7500 Mobile can be upgraded electronically in the field with new features in the current system or to new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

Ordering Requirements

Ordering Sequence

Here is an exemple of a Consolette **Dual Band** APCO P25 Trunking Equipped Radio

			Comments
1	**L30TSS9PW1 N**	**ASTRO APX™ 7500 DUAL BAND Consolette**	
1A	**GA00244**	700/800MHZ PRIMARY BAND	• Choose Primary band (operational band)
1B	**GA00308**	VHF MP SECONDARY BAND	• Choose Secondary Band (additional cost to enable)
1C	**GA00579AA**	ENABLE DUAL BAND OPERATION	• Select this option to enable secondary band (primary band is automatically enabled)
1D	**G806**	SOFTWARE ASTRO DIGITAL CAI OPERATION	• Select Operation Mode
1E	**G51**	SMARTZONE OPERATION	• Select System Enhancement Software
1F	**G361**	ASTRO PROJECT 25 TRUNKING SOFTWARE	• Select an Optional System Enhancement Software
1G	**L999**	Full FP w/05/Keypad/Clock/VU Meter	• Select Front Panel Hardware
1H	**W382**	CNTRL Station Palm Mic GCAI APX	• Select Paddle Microphone
1J	**CA01598**	AC Line Cord US	• Select AC Line Cord
1K	**QA01749**	Advance System Key-Software Key	• Select Advance System Key

Here is an example of a Consolette Single Band APCO P25 Trunking Equipped Radio With a Limited Front Panel

			Comments
1	**L30KSS9PW1 N**	**ASTRO APX™ 7500 SINGLE BAND Consolette**	
1A	**G806**	SOFTWARE ASTRO DIGITAL CAI OPERATION	• Select Operation Mode
1B	**G51**	SMARTZONE OPERATION	• Select System Enhancement Software
1C	**G361**	ASTRO PROJECT 25 TRUNKING SOFTWARE	• Select an Optional System Enhancement Software
1D	**L998**	Limited Front Panel W/Clock/VU Meter	• Select Front Panel Hardware
1E	**QA01749**	Advance System Key-Software Key	• Select Advance System Key
1F	**CA01598**	AC Line Cord US	• Select AC Line Cord
1G	**CA01942**	DC Cord	• Select DC Power Cord

Order the APX 7500 Consolette Series as the main line item.

- The Primary and Secondary Band MUST be ordered with each hardware model for Dual Band Radios.
- If you want the secondary band enabled, you MUST select the "Enable Dual Band Operation" option.
- Single Band Radios do not require the selection of a Primary or Secondary Band.
- You must choose an Operation Mode.
- You must choose an System Enhancement Software package.
- A Front Panel Configuration must be selected (L998 or L999). **NOTE: When L998 is selected, no microphone port is available.**
- Must select a Add (W382) or Delete (W90) Microphone option when L999 Front panel is chosen. When L998 is chosen you **CANNOT** Add or Delete a Microphone option.

- Power Cord Option must be selected.
- When ordering G50 or G51 A SOFTWARE or HARDWARE KEY is REQUIRED to be purchased. HARDWARE KEY will still REQUIRE a DVN4048 to be purchased.

- Note - APX 7500 Consolette Radios ship with 12 month standard warranty.

G50 "SMARTNET"/G51 "SmartZone"				
	"Analog Operation" (G241)	"ASTRO Digital"(G806)	"ASTRO Digital" (G51/G806/G361)	"TDMA" (GA00580AA)
	Non-Project 25 (3600 Baud)	Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	TDMA OPERATION
RADIO WIDE FEATURES				
Maximum Modes				
ASTRO Digital APX 7500	1250	1250	1250	1250
Analog and Digital Operation	Yes	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable	Yes	Yes (Digital Only)	Yes (Digital Only)	Yes (Digital Only)
One Touch Operation	Yes	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes	Yes
Surveillance Mode	Yes	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes	Yes
Radio Lock	Yes	Yes	Yes	Yes
Smart Battery	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Feetures are additional radio wide feetures beyond those specified above.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes	Yes

Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
DTMF Signaling	Future	Future	Future	Future
Quick-Call Signaling	Future	Future	Future	Future
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Conventional Interoperable Features when used in the ASTRO Digital CAI Mode (Q806).				
Unaddressed Voice Call (Dispatch Call)	Yes	Yes	Yes	Yes
Talk Group Call	Yes	Yes	Yes	Yes
Group Call Alert™	Yes	Yes	Yes	Yes
Talk Group Identification (TGID)	Yes	Yes	Yes	Yes
Selective Call (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	MDC-1200 Only	Yes	Yes	Yes
PTT ID (Individual Identification)	MDC-1200 Only	Yes	Yes	Yes
Call Alert Encode/Decode	MDC-1200 Only	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Acknowledgement	MDC-1200 Only	Yes	Yes	Yes
Telephone Interconnect	Yes	Yes	Yes	Yes
Manual Phone Number Entry	Dual Display Only	Yes	Yes	Yes
Selective Radio Inhibit	MDC-1200 Only	Yes	Yes	Yes
Radio Check	MDC-1200 Only	Yes	Yes	Yes
Status/Message	MDC-1200 Only	Yes	Yes	Yes
Trunking Type II Only Features				
Maximum Number of Trunked Systems-20	Yes	Yes	Yes	Yes
Talkgroup Calls	Yes	Yes	Yes	Yes
PTT ID *Included*	Yes	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes	Yes
Analog/Digital Dual Mode Scan	No	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only	Status Only
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes	Yes
Remote Monitor/Radio Trace	Yes	Yes	Future	Future
Reprogram Request	Yes	Yes	Yes	Yes

G51 "SmartZone"				
	"Analog Operation" (Q241)	"ASTRO Digital" (Q806)	"ASTRO Digital" (H37/Q806/Q361)	"TDMA" (QA00580AA)
		Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)	Project 25 (TDMA Operation)
Trunking Type II Only Features				
SmartZone Automatic Site Registration	Yes	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes	Yes
SmartZone Preferred Site	Yes	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	Yes

CHANNEL SPACING

There are no *maximum* frequency separation conditions that must be adhered to on the APX 7500 Consolette series. Separation of frequencies can be as wide as the allowable band per radio model with no degredation of any performance specifications. If an incorrect antenna is used, degraded performance may be experienced.

PROJECT 25 ENCRYPTION

The mode of operation is programmed on a channel-by-channel basis. With the coded/clear switch set to the clear mode, the ASTRO Digital APX7500 radio is capable of transmitting clear analog voice or clear (unencrypted) ASTRO Digital voice, depending on the channel programming. With the coded/clear switch set to the coded mode, the ASTRO Digital APX 7500 radio will transmit ASTRO Digital encryption depending on the channel programming. ASTRO Digital encryption provides secure communications. ASTRO Digital Encryption (operation in encrypted mode while also operation in 3.6KB or 9.6KB and TDMA ASTRO mode) is capable of XL type encryptions; ASTRO Digital

Encryptions does not operate with non-XL encryptions.

An encryption option is not required for either clear analog operation or clear ASTRO Digital operation. Encryption can be ordered with the ASTRO Digital APX 7500 radio either as a factory installed option or separate from the radio for later field installation. ASTRO Digital APX 7500 radio functions include selected ASTRO digital signaling and digital speech coding.

When ordering any of the Encryption Algorithms:

- The DES-OFB and AES encryption algorithms offered are compliant with digital Project 25 standards and does not support analog encryption operation.
- **Requires** the ASTRO Digital CAI (G808) to operate the DES-OFB and AES encryption.

If ordering a Dual Encryption:

- The non-OFB encryption (XL versions) can be operated in either analog, or CAI digital mode, but will not be Project 25 compliant.
- **Requires** the Multikey (W989).

When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

- Encryption Algorithms can be ordered later via Flash Port.

FIPS 140-2 Compliance

Encryption Modules equipped with AES are FIPS 140-2 compliant. Details regarding the certification, and copies of the relevant certificates, can be obtained on the NIST website at: http://csrc.nist.gov/groups/STM/cmvp/validation.html.

Further information regarding FIPS 140-2 certification may be found using the following link - FIPS 140-2 Crypto Module Validation Program (CMVP) http://csrc.nist.gov/groups/STM/cmvp/index.html

ASTRO Text Messaging Service

ASTRO Text Messaging Service is available on the ASTRO 25 APX 7500 Consolette radios with the Full Front Panel O5 Keypad/Clock/VU. Text Messaging Service (TMS) allows subscriber users to send and receive text messages to other subscribers or dispatch operators. Users can select messages and addresses from a predefined list or enter freeform text messages and addresses via the keypad. Text Messaging Service is available on ASTRO Trunked IV&D Systems and Subscribers.

Ordering requirements for APX 7500 Consolette:

- Requires Option L898 Full Feature O5 Control Head Front Panel. Full functionality including free form messaging.
- ASTRO Digital CAI Operation (G808)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking 9600 Software (G381)
- Packet Data Interface (W947)

NOTE: There is no specific option to order for the Text Messaging Service on the subscribers as the functionality is included in the Packet Data option.

FCC Information

Band/Model	Power Output	FCC Certification	Emissions	Applicable Rules
700 MHz: 764-776 MHz 794-806 MHz 800 MHz: 806-824 MHz 851-870 MHz	700 MHz: 3.5 - 30 Watts 800 MHz: 3.5 - 35 Watts	AZ492FT5858	8K10F1D, 8K10F1E, 8K10F1W,11K0F3E, 16K0F3E, 20K0F1E	22 (800 MHz Band ONLY), 90
VHF: 136 - 174 MHz	10 – 50 Watts	AZ492FT3824	8K10F1D, 8K10F1E, 8K10F1W,11K0F3E, 16K0F3E, 20K0F1E	22, 80, 90
UHF R1: 380 - 470 MHz	10 - 40 Watts	AZ492FT4894	8K10F1D, 8K10F1E, 8K10F1W,11K0F3E, 16K0F3E, 20K0F1E	22,74, 90, 90.210
UHF R2: 450 - 520 MHz	15 - 45 Watts	AZ495FT4895	8K10F1D, 8K10F1E, 8K10F1W,11K0F3E, 16K0F3E, 20K0F1E	22,74, 90, 90.210
VHF: 136 - 174 MHz 700 MHz: 764-776 MHz	VHF: 10 – 50 Watts 700 MHz:	AZ492FT7037	8K10F1D, 8K10F1E, 8K10F1W,11K0F3E, 16K0F3E, 20K0F1E	22 (VHF and 800 MHz ONLY), 80 (VHF ONLY),

794-806 MHz 800 MHz: 806-824 MHz 851-870 MHz	3.5 - 30 Watts 800 MHz: 3.5 - 35 Watts			90

Except for Itinerant and low-power incident channels.

** Itinerant & Low-Power Incident Channels *(Old Band Plan)*	
Channel Number	Frequency Range (MHz)
1 - 12	764 - 764.075
949 - 960	775.925 - 776
961 - 972	794 - 794.075
1909 - 1920	805.925 - 806

VHF SELF-QUIETING SPURS

Frequencies (MHz)
166.000MHz

Note: There are no self-quieting spurs for 700/800 MHz.

CPS INFORMATION

****Please note that a NEW version of CPS (RVN5224) is required for initial customer orders for this product. This new version of CPS is required for the APX radio shipments. ****

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

Models

Description	Nomenclature	APC	Price
APX7500 SINGLE BAND VHF MID POWER	L30KSS9PW1 N	761	$3,960.00
APX7500 SINGLE BAND UHF R1 MP	L30QSS9PW1 N	761	$3,960.00
APX7500 SINGLE BAND UHF R2 MP	L30SSS9PW1 N	761	$3,960.00
APX7500 CONSOLETTE DUAL BAND MODEL	L30TSS9PW1 N	781	$3,960.00
APX7500 SINGLE BAND 7/800	L30URS9PW1 N	781	$3,960.00

Options

Frequency Band

Description	Nomenclature	APC	Price
ADD: 7/800MHZ SECONDARY BAND	GA00225	656	$400.00
ADD: 7/800MHZ PRIMARY BAND	GA00244	656	$0.00
ADD: VHF MP PRIMARY BAND	GA00308	656	$0.00
ADD: VHF MP SECONDARY BAND	GA00308	656	$400.00
ADD: UHF R1 MP PRIMARY BAND	GA00341	656	$0.00
ADD: UHF R1 MP SECONDARY BAND	GA00343	656	$400.00
ADD: UHF R2 MP PRIMARY BAND	GA00345	656	$0.00
ADD: UHF R2 MP SECONDARY BAND	GA00346	656	$400.00
ADD: ENABLE DUAL BAND OPERATION	GA00579	656	$600.00

Operation Mode

Description	Nomenclature	APC	Price
ENH: SW ASTRO READY (ANALOG) NOT COMPATIBLE with Encryption Algorithm W668, W793, W797, G625, G288, G651, or G643 when combined with a Trunking Software Option.	G241	656	$0.00
ENH: ASTRO DIGITAL CAI OP APX	G806	656	$515.00

System Enhancement Software

Description	Nomenclature	APC	Price
ENH: CONVENTIONAL OPERATION Limited Conventional features-see matrix	G48	656	$600.00
ENH: SMARTNET OPERATION APX	G50	656	$1,200.00
ENH: SMARTZONE OPERATION APX	G51	656	$1,500.00
ADD: ADVANCED SYSTEM KEY - HARDWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	QA01848	655	$5.00
ADD: ADVANCED SYSTEM KEY - SOFTWARE KEY A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking.	QA01749	655	$0.00

Systems Enhancement Options

Description	Nomenclature	APC	Price
ENH: SMARTZONE OMNILNK MULTZONE SYSTEM SW Automatic Zoning Across Zones, Zone Registration, Trespass Protection, Over the Air Site Alias, 32 Preferred Sites, FastStart and AllStart Call Setup.	G173	656	$200.00
ADD: P25 TRUNKING SOFTWARE When ordering this option G51 & G808 MUST be ordered. G173 is included at "NO CHARGE".	G361	656	$300.00
ADD: MULITCAST VOTING SCAN This feature allows for voting of the Conventional Channels ONLY.	G387	656	$200.00
ENH: OVER THE AIR PROVISIONING Compatible with P25 Trunking OR ASTRO Conventional only; There is NO Analog Functionality for this feature. Requires W947 Data option. To do in field POP25 programming must use Advanced System Key (CVN4046A). Single unit POP25 with batch programming for trunking configuration coming in future.	G898	656	$100.00
ENH: EXTENDED DISPATCH APX CONSOLETTE	GA00469	761	$500.00
ADD: TDMA OPERATION When ordering an APX6500Li model this option requires QA02756 software package	GA00580	656	$400.00
ADD: RS232 PACKET DATA INTERFACE	W947	656	$200.00

Algorithm Options

Description	Nomenclature	APC	Price
ADD: ENCRYPTION P25 & MDC OTAR Includes Multi-key (W969)and Trunking OTAR. Includes Tactical OTAR. Tactical OTAR can only be utilized when IV&D is purchased.	G298	656	$740.00
ADD: DES/DES-XL/DES-OFB ENCRYPTION Analog Secure (DES and DVP) supported in radios shipped past June 1, 2010.	G625	656	$599.00
ADD: AES ENCRYPTION APX Requires P25 operation.	G843	656	$475.00
ADD: AES/DES-XL/DES-OFB ENCRYPTION G851 is NOT compatible with G843 and G625. W969 Multi-key required for use of more than 1 key. Analog Secure (DES and DVP) supported in radios shipped past June 1, 2010. AES and DES-OFB Operation Require Digital (G805).	G851	656	$799.00
ADD: 3 DAY KEY RETENTION APX Includes GA00227 REMOVABLE MEMORY 1 GB.	GA00236	656	$100.00
ADD: DVP-XL ENCRYPTION APX7500 Analog Secure (DES and DVP) supported in radios shipped past June 1, 2010.	W797	656	$487.00
ADD: MULTIPLE KEY ENCRYPTION OPERATION REQUIRED when using more than one encryption algorithm or encryption key.	W969	656	$330.00

Amplifier

Description	Nomenclature	APC	Price
ADD: RF PREAMP Options applies only to VHF & UHF radios.	W12	656	$66.00

Desktop Configuration

Description	Nomenclature	APC	Price
ADD: LIMITED FRONT PANEL W/CLOCK/VU	L998	761	$460.00
ADD: FULL FP W/05/KEYPAD/CLOCK/VU	L999	761	$789.00

Manual

Description	Nomenclature	APC	Price
ADD: NO USER/INSTALL CD NEEDED	GA00237	656	$0.00

Microphones

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED Select this option when ordering O3 Handheld Control Head (G72)	G90	656	$0.00
ADD: CONTROL STATION DESK GCAI MIC Dash Mount Required Corresponding Kit: RMN5070	W382	656	$169.00

Power Cord(s)

Description	Nomenclature	APC	Price
ADD: AC LINE CORD US	CA01598	761	$0.00
ADD: AC LINE CORD BS 1363 PLUG-UK	CA01600	761	$0.00
ADD: AC LINE CORD AS3112 PLUG-AUSTI	CA01602	761	$0.00
ADD: DC CORD	CA01942	761	$55.00

RF Modsm

Description	Nomenclature	APC	Price
ENH: ENABLE RF MODEM The APX mobiles do not support Site Lens or System Watch. Therefore, the APX RF Modem function does not support the legacy System Watch or Site Lens applications. The APX RF Modem supports Conventional or 9600 Trunking only. Enabling the RF Modem in conventional mode allows provisioned APX portables to pass accountability data through the portable option Q445.	G319	656	$0.00

Service Options

Dsscription	Nomenclature	APC	Price
ENH: 1 YR REPAIR SERVICE ADVANTAGE	G77	185	$83.00
ENH: 2 YR REPAIR SERVICE ADVANTAGE	G78	185	$156.00
ENH: 3 YR REPAIR SERVICE ADVANTAGE	GA00232	185	$236.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$319.00

UNDEFINED

Description	Nomenclature	APC	Price
APX MOBILE RADIO AUTHENTICATION	GA01767	656	$100.00

Manual(s)

	Nomenclature	APC	Price
ADD: DATA LINK MANAGER APP CD- MOBILES Option provides the NVN5424 Data CD. Please order this option if you would like the Data CD, and are unable to obtain it through other sources such as MOL	QA00205	655	$0.00

Test Results

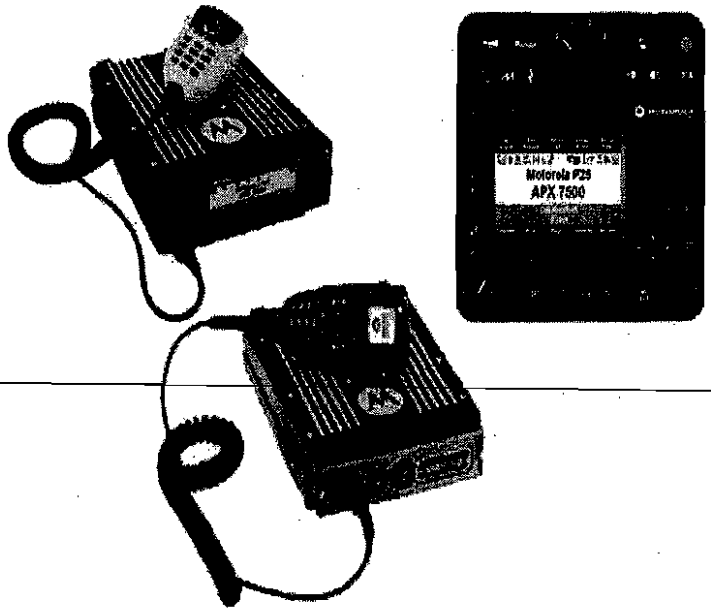
Description	Nomenclature	APC	Price
ADD: PRINTED TEST RESULTS APEX	G799	656	$0.00

Accessories

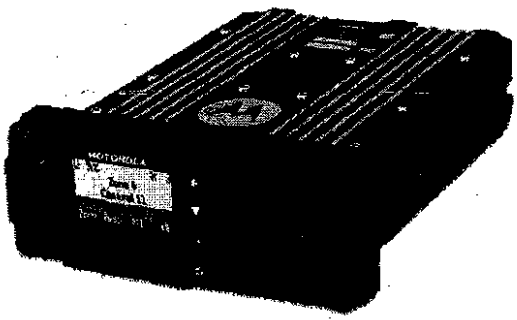
UNDEFINED

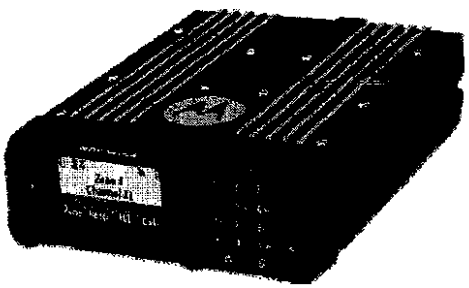
Description	Nomenclature	APC	Price
CABLE CH, PROGRAMMING, USB	HKN6184C	516	$51.00
APX CONSOLETTE RACK MOUNT KIT	HKN6233	761	$200.00

Data Compiled 16-May-2013 using DUP and all prices in USD



ASTRO® Digital APX 7500 Mobile Subscriber
700/800 MHz (10 – 35 Watts)
VHF - 136 -174 (10-50, 25 - 100 Watts)
UHFR1 - 380-470 (10-40, 25 -110 Watts)
UHF R2 450-520 (10-45 Watts)
Secure and Trunked Radio Systems





Special Note for United States - State & Local Markets:

In accordance with FCC mandate, the U1/U2 Mid Power and U1/7-800 band combinations for this product are restricted to not allow programming for 25 KHz operation. These frequencies are restricted to 12.5 KHz operation only.

Ship Card

Guideline

******NOTE: APX digital mobile and portable radios require either a SOFTWARE KEY (QA01749) OR HARDWARE KEY (QA01648) to be ordered to operate/program on a trunking system. IF QA01648- HARDWARE KEY is ORDERED, SUPPLEMENTAL DATA is**

required to be entered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. Also, an Advanced System Keys (ASK- DVN4046) will be required to be ordered. ****

http://ecat.comm.mot.com/ecat/pricebooks/dup/ASK.htm

This price page consists of the following sections:

A. Required Main Models and Options for standard operation (Steps 1-9)
B. Motorcycle, Control Station, Dual Control Head, Multi Radio, and Text Messaging Requirements
C. Optional Features
D. Aftermarket Accessories
E. Control Head Conversion Allied Sales Models
F. Retrofit Mounting Kits
G. Remote Control Head Replacement AND Multiple Control Head Allied Sales Model

Online APX7500 Resources:

APX7500 Ordering Guide

APX7500 Specifications Sheet

APX7500 Public Safety Brochure

APX7500 Federal Markets Brochure

APX FAQ's

CPS INFORMATION
Customer Programming Software

****Please note that a NEW version of CPS (RVN5224) is required for initial customer orders for this product. This new version of CPS is required for the APX radio shipments. ****

Section A: Required Main Model and Options

For standard Radio Operation (including Motorcycle) **Steps 1 - 9 must be** selected.

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

1: Main Model ***(Must Select One)***

******Low/Mid Power******

Description	Nomenclature	APC	Price
APX7500 SINGLE BAND 7/800 MID POWER	M30URS9PW1 N	656	$2,272.00
APX7500 SINGLE BAND VHF MID POWER	M30KSS9PW1 N	656	$2,272.00
APX7500 SINGLE BAND UHF R1 MID POWER	M30QSS9PW1 N	656	$2,272.00
APX7500 SINGLE BAND UHF R2 MID POWER	M30SSS9PW1 N	656	$2,272.00

******High Power (Not Compatible with Motorcycle Operation)******

Description	Nomenclature	APC	Price
APX7500 SINGLE BAND VHF HIGH POWER	M30KTS9PW1 N	656	$2,772.00
APX7500 SINGLE BAND UHF R1 HIGH POWER	M30QTS9PW1 N	656	$2,772.00

Primary and Secondary Band options must be chosen with a Dual Band model ONLY

Enable Dual Band Operation must be chosen to enable the Secondary Band

******Dual Band******

Deacription	Nomenclature	APC	Price

APX7500 DUAL BAND MID POWER	M30TSS9PW1 N	656	$2,272.00
APX7500 DUAL BAND HIGH POWER	M30TXS9PW1 N	656	$2,772.00

Primary Band Options

Description	Nomenclature	APC	Price
ADD: 7/800MHZ PRIMARY BAND	GA00244	656	$0.00
ADD: VHF MP PRIMARY BAND	GA00306	656	$0.00
ADD: VHF HP PRIMARY BAND	GA00307	656	$0.00
ADD: UHF R1 MP PRIMARY BAND	GA00341	656	$0.00
ADD: UHF R1 HP PRIMARY BAND	GA00342	656	$0.00
ADD: UHF R2 MP PRIMARY BAND	GA00345	656	$0.00

Secondary Band Options

Description	Nomenclature	APC	Price
ADD: 7/800MHZ SECONDARY BAND	GA00225	656	$400.00
ADD: VHF MP SECONDARY BAND	GA00308	656	$400.00
ADD: VHF HP SECONDARY BAND	GA00309	656	$400.00
ADD: UHF R1 MP SECONDARY BAND	GA00343	656	$400.00
ADD: UHF R1 HP SECONDARY BAND	GA00344	656	$400.00
ADD: UHF R2 MP SECONDARY BAND	GA00346	656	$400.00

Enable Dual Band

Description	Nomenclature	APC	Price
ADD: ENABLE DUAL BAND OPERATION	GA00579	656	$600.00

2: Operation Mode *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: SW ASTRO READY (ANALOG)	G241	656	$0.00
NOT COMPATIBLE with Encryption Algorithm W969, W793, W797, G825, G396, G851, or G843 when combined with a Trunking Software Option.			
ENH: ASTRO DIGITAL CAI OP APX	G808	656	$515.00

3: System Enhancement Softwere *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: CONVENTIONAL OPERATION	G48	656	$600.00
Limited Conventional features-see matrix			
ENH: SMARTNET OPERATION APX	G50	656	$1,200.00
ENH: SMARTZONE OPERATION APX	G51	656	$1,500.00
ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648	655	$5.00
A SOFTWARE or HAROWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. A SUPPLEMENTAL ID is REQUIRED to be entered when this option is ordered. Please be sure the CORRECT SYSTEM ID is entered. If an incorrect ID is entered, FLASHport will need to be ordered to FIX this error. HARDWARE KEY or WACN KEY will still REQUIRE a QVN4046 to be purchased.			
ADD: ADVANCED SYSTEM KEY - SOFTWARE KEY	QA01749	655	$0.00
A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking.			

3b: Optional System Enhancement Software *(Not Required)*

Description	Nomenclature	APC	Price
ENH: SMARTZONE OMNILNK MULTZONE SYSTEM SW	G173	656	$200.00
Automatic Zoning Across Zones, Zone Registration, Trespass Protection, Over the Air Site Alias, 32 Preferred Sites, FastStart and AllStart Call Setup.			
ADD: P25 TRUNKING SOFTWARE	G361	656	$300.00
When ordering this option G51 & G808 MUST be ordered. G173 is included at "NO CHARGE".			
ADD: TDMA OPERATION	GA00580	656	$400.00
When ordering an APX8500Li model this option requires QA02756 software package			
APX MOBILE RADIO AUTHENTICATION	GA01767	656	$100.00
ADD: DVRS PSU ACTIVATION	QA00631	655	$100.00
Enables DVRS Enhanced PSU functionality on APX Radios. Requires XTL MSU and Digital Operation.			

3c: Optional Data Link Manager CD *(Not Required)*

Description	Nomenclature	APC	Price
ADD: DATA LINK MANAGER APP CD- MOBILES	QA00205	655	$0.00
Option provides the NVN5424 Date CD. Please order this option if you would like the Data CD, and are unable to obtain it through other sources such as MOL.			

NOTE: OPTION QA00631 (DVRS PSU) ALLOWS THE MOBILE SUBSCRIBER TO BE USED AS A PSU. AN XTL MOBILE SUBSCRIBER IS STILL REQUIRED AS AN MSU

4: Control Head Hardware *(Must Select One)*

O2 Control Head Hardware

ADD: APX O2 CONTROL HEAD (Grey)	GA00804	656	$532.00

O2 Control Head Colored Housing Trigger

*FOR THE IMPACT GREEN HOUSING YOU **MUST** STILL ORDER GA00804 ALONG WITH G201*

ADD:IMPACT GREEN COLOR HOUSING (O2)	G201	656	$25.00

O3 Control Head Hardware

Description	Nomenclature	APC	Price
ADD:03 CONTROL HEAD	G72	656	~~$946.00~~
NOTE: VERSION PMUN1034C WILL NO LONGER SHIP FROM THE FACTORY AS IT HAS BEEN REPLACED BY VERSION PMUN1034E. PMUN1034C IS NO LONGER AVAILABLE *Select G90 (No MIC needed) when you order this option* AVAILABLE IN STANDARD KEYPAD AND LIGHTS AND SIREN KEYPAD VERSIONS. (For lights and siren add GA00808 Trigger Option)			
ADD: NO O3 CONTROL HEAD	GA00001	656	$0.00

O5 Control Head Hardware

Description	Nomenclature	APC	Price
ADD: APX O5 CONTROL HEAD	G442	656	$432.00
ADD: APX NO O2/O7 CH NEEDED MTCL	G88	656	$0.00

O7 Control Head Hardware

ADD: APX O7 CONTROL HEAD AVAILABLE IN STANDARD KEYPAD AND LIGHTS AND SIREN KEYPAD VERSIONS. (For lights and siren add GA00808 Trigger Option)	GA00805	656	$632.00

Vehicle Integration

O7 Control Head Siren/Light Trigger

Drives Siren & Light Keypad Printing and Factory Programming Software for Light relay operations

ADD: O7 CH SIREN & LIGHTS KEYPAD (O7 CH ONLY) Available on O3 and O7 Control Heads	GA00808	656	$50.00

O9 Control Head Hardware

Description	Nomenclature	APC	Price
ADD: O9 CONTROL HEAD Requires Add Options GA00259 and GA00260 for full Lights Control Operation. For Siren operation please order model TT2592 and options TT05707AA and TT05708AA as a seperate line item. COMPATIBLE WITH REMOTE MOUNT ONLY!	GA00245	656	$1,200.00

(Required for Light and Siren and Gunlock Control)

FOR SIREN ORDERING PLEASE SEE THE "WNELEN SIREN" SECTION BELOW

Description	Nomenclature	APC	Price
ADD: UNIVERSAL RELAY CONTROLLER Required to Control Vehicle Lights with 07 and O9 Control Heads.	GA00259	656	$250.00
ADD: CABLE URC TO TRANSCEIVER Connects Universal Relay Controller to APX Transciver via a RJ45 and CGAI connection.	GA00260	656	$15.00
ADD: EXTERNAL ALARM RELAY AND CABLE For either HORN or LIGHTS. NOT both	W116	656	$75.00
ADD: GCAI EXTENSION CABLE 2 FT For use with 07, O9 Control Heads and GCAI style Mic. KIT #PMKN4093A.	GA00589	656	$30.00
ADD: REMOTE MOUNT VIP CBL APX Park/Kill, Gunlock, "Horn Ring/Horn Transfer" or Horn/Lights Park/Kill and Horn "Ring/Horn Transfer" only available with Motorola Siren. Gunlock supported on O9 Control Head Only. CORRESPONDING KIT: (HKN8186B)	G322	656	$35.00

5: Control Head Software *(Must Always Select G444 - some software for all control heads)*

Must select G444 AND G138 for motorcycle operation

Description	Nomenclature	APC	Price
ADD: APX7500 MOTORCYCLE CH SFW	G138	656	$0.00

Required for Motorcycle Operation

ADD: CONTROL HEAD SOFTWARE	G444	656	$0.00

6: Mounting *(Must Select One for Mid Power Models)*

******High Power Models automatically include a Quick Release Keylock Remote Mounting option, no selection is required******

****If a remote mount cable other than 5 meters (17ft) is desired for G67 or Standard High Power Mounting, please reference the "Remote Mount Cables" section below in Section C: Optional Features****

Description	Nomenclature	APC	Price
ADD: DASH MOUNT Required for Control Station Operation	G66	656	$125.00
ADD: REMOTE MOUNT MID POWER Not Compatible with High Power. G67BA is required for Motorcycle Configuration. Motorcycle Remote Mount Option is $400 DUP.	G67	656	$297.00
ADD:REMOTE MOUNT MOTORCYCLE Required to order G67BA for Motorcycle Mounting. Motorcycle Mounting is $400 DUP.	G67BA	656	$400.00

****** Motorcycle installations Require the O5 Control Head and Remote Mounting - Only available with 5 meter (17 ft) cable)******

7: RF Antenna *(Must Select One Per Band)*

*****No Antenna Needed is Valid For All Bands******

Description	Nomenclature	APC	Price
ADD: NO RF ANTENNA NEEDED	G89	656	$0.00

7/800

Description	Nomenclature	APC	Price
ADD: ANT 3DB LOW-PROFILE 762-870 Corresponding kit: HAF4013 Corresponding Motorcycle kit: HAF4018	G174	656	$43.00
ADD: AN7.3DB ELEVATED FEED 762-870 NOT Compatible with Motorcycle. Corresponding kit: HAF4014.	G175	656	$75.00
ADD: ANT 1/4 WAVE 762-870 MHZ Corresponding kit: HAF4016 Corresponding Motorcycle kit: HAF4015 **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.**	G335	656	$14.00
ALT: ANT 3DB GAIN 762-870MHZ Not compatible with Motorcycle. Corresponding kit: HAF4017.	W484	656	$38.00

VHF

Description	Nomenclature	APC	Price
ADD: 1/4 WAVE WHIP ROOF TOP 136-144 Corresponding kit: HAD4006 Corresponding Motorcycle kit: RAD4002ARB	G296	656	$13.50
ADD:1/4 WAVE ROOF TOP ANT VHF Corresponding kit: HAD4009 Corresponding Motorcycle kit: RAD4005ARB	G300	656	$13.50
ADD: 1/4 WAVE ROOF TOP 144-150.8 Corresponding kit: HAD4007 Corresponding Motorcycle kit: RAD4003ARB	G297	656	$13.50
1/4 WAVE BROADBAND ANT 146-174 Not Compatible with Motorcycle Corresponding kit: HAD4017.	G629	656	$64.00
ADD: 1/4 WAVE ROOF TOP 150.8-162 Corresponding kit: HAD4008 Corresponding Motorcycle kit: RAD4004ARB	G299	656	$19.50
ADD: 3BD ANT 136-174MHZ Not Compatible with Motorcycle Corresponding kit: HAD4022A.	G301	656	$58.50
ADD:VHF ANT WIDEBAND 136-174 MHZ Not Compatible with Motorcycle Corresponding kit: HAD4021.	G792	656	$75.00
ALT: 1/4 WV BDBD ANT 136-162 MHZ	W662	656	$47.75

UHF

Description	Nomenclature	APC	Price
ADD: ANT 3.5DB 380-420 MHZ MAXRAD Not Compatible with Motorcycle Corresponding kit: HAE6016.	G427	656	$55.00
ADD: ANT 5.0DB 380-420 MHZ MAXRAD Not Compatible with Motorcycle	G429	656	$62.00

Corresponding kit: HAE6011.			
ADD: ANT 5.0DB 445-470 MHZ	G430	656	$110.00
Not Compatible with Motorcycle Corresponding kit: RAE4014ARB.			
ADD: MCYCLE ANT 1/4 WAVE 380-433MHZ	G210	656	$29.00
DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.			
ADD: ANT 1/4 WAVE WHIP 380-420 MHZ	G425	656	$25.00
Not Compatible with Motorcycle Corresponding kit: HAE6012. **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.**			
ADD: ANT 1/4 WAVE WHIP 450-470 MHZ	G426	656	$25.00
Not Compatible with Motorcycle TEMPORARY: Not compatible with U2-7/800 Bandsplit. Corresponding kit: HAE4003.			
ADD: ANT 3.5DB 450-470 MHZ	G428	656	$50.00
Not Compatible with Motorcycle Corresponding kit: HAE4011.			
ADD: ANT WIDEBAND 380-470 MHZ MAXRA	G431	656	$58.00
Not Compatible with Motorcycle Corresponding kit: HAE6013.			
ADD: 5DB GAIN ANT 494-512 MHZ	G466	656	$58.00
Not Compatible with Motorcycle Corresponding kit: RAE4016ARB.			
ADD: ANT 1/4 WAVE 470-512 MHZ	G490	656	$14.00
Not Compatible with Motorcycle TEMPORARY: Not compatible with U2-7/800 Bandsplit. Corresponding kit: HAE4004.			
ADD: ANT 3 DB ROOF TOP 470-495 MHZ	G493	656	$33.00
Not Compatible with Motorcycle Corresponding kit: HAE4012.			
ADD: ANT 3 DB ROOF TOP 494-512 MHZ	G494	656	$33.00
Not Compatible with Motorcycle Corresponding kit: HAE4013.			
ADD: ANT LOW PROFILE 450-512 MHZ	G510	656	$50.00
Corresponding kit: HAE6016 TEMPORARY: Not compatible with U2-7/800 Bandsplit. Corresponding Motorcycle kit: HAE6016			
ADD: 2DB ANT WIDEBAND 450-520 MHZ	G511	656	$70.00
TEMPORARY: Not compatible with U2-7/800 Bandsplit.Corresponding kit:HAE6016 Corresponding Motorcycle kit:HAE6015			

8: Microphones ***(Must Select One)***

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED	G90	656	$0.00
Select this option when ordering D3 Handheld Control Head (G72)			
ADD: MOTORCYCLE PALM MIC	W22	656	$72.00
Corresponding kit for O5: HMN1079			
ADD: PALM MICROPHONE	W22	656	$72.00
Corresponding kit: HMN1090			
ADD: KEYPAD MIC GCAI	W20	656	$180.00
Compatible with motorcycle configuration. Supports Remote Monitor. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079			
ADD: CONTROL STATION DESK GCAI MIC	W362	658	$189.00
Dash Mount Required Corresponding Kit: RMN5070			
ENH: HAND MIC,GCAI WATER RESISTANT	G892	656	$72.00
Compatible with motorcycle configuration. Corresponding kit for O5: HMN1069A			
ADD: HANDSET/HANGUP COILED CABLE	G876	656	$415.00
Coiled Cable, No Toggle Switch Accessory Kit: HKN1017			
ADD: VISOR MIC REMOTE MOUNT	W872	658	$30.00
Requires G235 Footswith PTT. Kit Number: RMN5054_			
ADD: MODEL III GCAI KEYPAD HANDSET	GA00221	656	$295.00
Corresponding kit: HMN4097A			
ADD: GOOSENECK PTT	G233	656	$56.00
Requires W872 Visor Mic. Kit Number: HMN1087A			
ADD: HANDSET/HANGUP MIC ARMORED CABLE	W874	658	$300.00
Armored Cable, No Toggle Switch Accessory Kit: HKN1016			
ADD: PTT FOOTSWITCH	G235	656	$51.00
Requires W872 Visor Mic. Kit Number: GLN7278_			
ADD: PUSHBUTTON PTT	GA00304	658	$58.00

9: Speakers ***(Must Select One)***

****G142 NO SPEAKER Required for Control Station****

Description	Nomenclature	APC	Price
ADD: SPKR 15W WATER RESISTANT	G831	656	$60.00
ADD: NO SPEAKER NEEDED	G142	656	$0.00
ADD: AUXILARY SPKR 7.5 WATT Corresponding kit: HSN4031.	B18	656	$60.00
ADD: AUXILARY SPEAKER MOTORCYCLE Corresponding kit: HSN6003.	B16	656	$60.00
ADD: AUXILARY SPKR 13W (3.2OHM)	W432	656	$71.50

Section B: Motorcycle, Control Station, Dual Control Head, Multi Radio Requirements

Please read the all *of* the instructions below before selecting any options.
Each Radio Type has 3 Ordering Steps.

MOTORCYCLE CONFIGURATION

I. You must review your selection of the following options from "Section 1: Required Options".

- Step 1 (*Note: Not Compatible with High Power Models*)
- Step 2 *(Note: All listed options are compliant)*
- Step 3 *(Note: All listed options are compliant)*
- Step 4 (*Note: Control Head - Must only select one*).
- Step 5 (*Note: Must select G444 **AND** G138 for Motorcycle Operation*).
- Step 6 *(Note: Must Select G87**BA**. Motorcycle operation is only offered in a Remote Mount Configuration)*
- Step 7 *(Note: Some Antennas are **NOT** compatible. Please read option description)*
- Step 6 *(Note: Some Microphones are **NOT** compatible. Please read option description).*
- Step 9 *(Note: Must select B18 speaker option)*

II. You Must Select ONE of the Following "Motorcycle Specific Options":

MOTORCYCLE SPECIFIC OPTIONS

Weatherproof Housing ***(Must Select One)***

Description	Nomenclature	APC	Price
ADD: NO MTRCYCLE ENCL NEEDED APEX	W620	656	$0.00
ADD: WEATHER PROOF HOUSING ENCLOSURE BLACK	W15	656	$900.00

III. Features listed in "Section C: Optional Features" are optional, if applicable. Please read the option's description to determine compatibility.

Motorcycle Configuretion is not compatible with any DEK options

CONTROL STATION OPERATION

(Mid Power Radios Only)

I. First, you must review your selection of the following options from "Section 1: Required Options".

- Step 1 (*Note: Main Model*)
- Step 2 *(Note: All listed options are compliant)*
- Step 3 *(Note: All listed options are compliant)*
- Step 4 (*Note: O2, O5, O7 Control Head **OR** "No Control Head Needed" are compatible with Control Station Application- Must only select one*).
- Step 5 (*Note: Must Select G444. The G444 Control Head Software is compatible with Control Stetion Application*).
- Step 6 *(Note: Must Select G66. Control Station operation is only offered in Dash mount configuration)*
- Step 7 *(Note: All listed options are compliant)*
- Step 6 *(Note: Some Microphones are **NOT** compatible. Please read option description).*
- Step 9 *(Note: Must Select G142 - No Speaker Needed)*

II. You Must Select W665. G91 is needed for control station operation, but is an optional purchase.

SPECIFIC CONTROL STATION OPTIONS

Control Station Operation and Power Supply

Description	Nomenclature	APC	Price
ADD: CONTROL STATION POWER SUPPLY	G91	656	$269.00
ADD: CONTROL STATION OPERATION	W665	656	$70.00

III. Features listed in "Section C: Optional Features" are optional, if applicable. Please read the option's description to determine compatibility.

MULTI CONTROL HEAD RADIO

What is an APX 7500 O5 Multiple Control Head Configuration?

The APX 7500 mobile radio and the O5 control head can be configured in a multi control head configuration to support up to 4 control heads on e single transceiver. This allows control of a single APX 7500 transceiver from up to 4 different control head locations. **The O5, O2 and O7 control heads are the only control head that supports multiple control head configurations** with up to 4 control heads.

MULTI CONTROL HEAD ORDERING PROCEDURES

*** Multi Control Head Always Requires the O5, O7, O2 Control Head Hardware***

*** Multi Control Head Always Requires Control Head Software (G444) ***

*** Multiple Control Head Radios Always Require ONE of the Multiple Control Head Options (GA00092 or GA00093, or GA00094).***

This Multiple Control Head Option QTY should ALWAYS equal the main line item Qty.

Description	Nomenclature	APC	Price
ADD: DUAL-CONTROL HARDWARE	GA00092	656	$570.00
ADD: APX7500 TRI-CONTROL HARDW	GA00093	656	$1,000.00
ADD: APX7500 QUAD-CONTROL HARDWARE	GA00094	656	$1,300.00

*** Multi Control Head Always Requires Remote Mount ***

*** THERE IS NO STANDARD 17' CABLE OFFERED FOR A MULTI CONTROL HEAD CONFIGURATION. YOU MUST ALWAYS ORDER ONE CABLE PER CONTROL HEAD ***

Description	Nomenclature	APC	Price
ADD:CBL REMOTE MOUNT 10 FEET Corresponding kit: HKN8170	G618	656	$10.00
ADD: REMOTE MOUNT CBL 17 FEET Included at no charge with Single Control Head Remote Mount Installations and High Power. Corresponding kit: HKN8169	G628	656	$15.00
ADD: REMOTE MOUNT CBL 30 FEET Corresponding kit: HKN6168	G610	656	$25.00
ADD: REMOTE MOUNT CBL 50 FEET Corresponding kit: HKN6167	G609	656	$35.00
ADD:CBL REMOTE MOUNT 75 FEET Corresponding kit: HKN6166A	G607	656	$45.00
ADD:REMOTE MOUNT CBL 115 FEET Corresponding kit: HKN6165	G879	656	$55.00

*** Multiple Control Head Configurations require only ONE antenna per frequency band ***

*** Total # of microphones must match the total # of control heads being ordered. The G90 "No Mic Needed" option counts as a mic option ***

**** Total # of speakers must match the total # of control heads being ordered. The G142 "No Speaker Needed" option counts as a speaker option ***

NOTE: DEK BOX Hardware cannot be ordered as an option with Multi Control Head. You must order individual DEK Box Kits for each control head you need to have DEK box hardware.

MULTI RADIO

Not currently supported on APX7500.

Only Available on XTL5000 with W3 Control Head. Please see W series XTL5000 Price Page.

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on APX 7000 Dual Display Portable radios. Advanced Messaging is NOT supported on APX 7000 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for APX Mobiles Require: (Note: some control heads are not available on all main models)

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
  - P25 Conventional (G48)
  - Packet Date Interface (W947)

OR

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
  - SmartZone Operation (G51)
- ASTRO Project 25 Trunking Software (G361)
  - Packet Data Interface (W947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

Section C: Optional Features

The following options are **optional** and will provide additional capabilities, if required.

System Enhancement Options

Description	Nomenclature	APC	Price
ADD: MULITCAST VOTING SCAN This feature allows for voting of the Conventional Channels ONLY.	G387	656	$200.00
ENH: OVER THE AIR PROVISIONING Compatible with P25 Trunking OR ASTRO Conventional only; There is NO Analog Functionality for this feature. Requires W947 Data option. To do in field POP25 programming must use Advanced System Key (OVN4046A). Single unit POP25 with batch programming for trunking configuration coming in future.	G996	656	$100.00
ADD: RS232 PACKET DATA INTERFACE	W947	656	$200.00
ADD: GPS ACTIVATION Requires IV&O Activation.	GA00229	656	$100.00

GPS Outdoor Location Solution Overview

GPS Antennas

****Selection is required when ordering GA00229, GPS Activation****

Description	Nomenclature	APC	Price
ADD: NO GPS ANTENNA NEEDED	GA00235	656	$0.00
ADD: GPS ANTENNA	GA00226	656	$75.00
ADD: GPS ANTENNA MTCL	GA00269	656	$75.00
ADD: GPS ANTENNA GLASS MT	GA00270	656	$75.00

Encryption Algorithms

All APX7500 Mobile Radios ship standard with Single Key Advanced Digital Privacy (ADP).
****ADP Privacy is not FIPS compliant - ADP Privacy not supported by OTAR - ADP is digital P25 conventional / P25 trunking only****

Description	Nomenclature	APC	Price
ADD: MULTIPLE KEY ENCRYPTION OPERATION REQUIRED when using more than one encryption algorithm or encryption key.	W989	656	$330.00
ADD: ENCRYPTION P25 & MDC OTAR Includes Multi-key (W989)and Trunking OTAR. Includes Tactical OTAR. Tactical OTAR can only be utilized when IV&O is purchased.	G296	656	$740.00
ADD: AES ENCRYPTION APX Requires P25 operation.	G843	656	$475.00

ADD: AES/DES-XL/DES-OFB ENCRYPTION G851 is NOT compatible with G843 and G825. W969 Multi-key required for use of more than 1 key. Analog Secure (DES and DVP) supported in radios shipped past June 1, 2010. AES and DES-OFB Operation Require Digital (G808).	G851	656	$799.00
ADD: DES/DES-XL/DES-OFB ENCRYPTION Analog Secure (DES and DVP) supported in radios shipped past June 1, 2010.	G625	656	$599.00
ADD: DVP-XL ENCRYPTION APX7500 Analog Secure (DES and DVP) supported in radios shipped past June 1, 2010.	W797	656	$467.00
ADD: 3 DAY KEY RETENTION APX Includes GA00227 REMOVABLE MEMORY 1 GB.	GA00238	656	$100.00

Expandable Memory

Description	Nomenclature	APC	Price
ADD: REMOVABLE MEMORY 1 GB Not compatible with GA00236 (ADD: 3 DAY KEY RETENTION APX) since 1 GB memory is inluded with that option.	GA00227	656	$75.00

O9 Control Head Supplemental Mounting Devices
(Used for Special Mounting Requirements in Passenger Cabin)

Description	Nomenclature	APC	Price
ADD: PEDESTAL MOUNT BALL JOINT	GA00281	656	$100.00
ADD: PEDESTAL MOUNT LOW SWIVEL	GA00281	656	$100.00

Remote Mount Cables

(All cables are for O5, O7 or O9 control head only)

(The 5 meter (17 FT) Cable Ships Standard)

Description	Nomenclature	APC	Price
ADD:CBL REMOTE MOUNT 10 FEET Corresponding kit: HKN6170	G618	656	$10.00
ADD: REMOTE MOUNT CBL 30 FEET Corresponding kit: HKN6168	G810	656	$25.00
ADD: REMOTE MOUNT CBL 50 FEET Corresponding kit: HKN6187	G809	656	$35.00
ADD:CBL REMOTE MOUNT 75 FEET Corresponding kit: HKN6166A	G607	656	$45.00
ADD:REMOTE MOUNT CBL 115 FEET Corresponding kit: HKN6165	G879	656	$55.00
ADD: REMOTE MOUNT CABLE 131 FT ***For Duel/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a duel, tri, or quad control radio*** Corresponding kit: HKN6164	G582	656	$65.00

DEK

Description	Nomenclature	APC	Price
ADD: STATUS/MESSAGE 6 NOT compatible with O3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration. CORRESPONDING KIT: H1838A	W355	656	$475.00
ADD: STATUS/MESSAGE 16 NOT compatible with O3 or Motorcycle Control Heads Not compatible with Dash Mount configuration. Requires Remote Mount configuration. CORRESPONDING KIT: H1839A	W374	656	$650.00

Direct Mode Entry

Description	Nomenclature	APC	Price
ADD: 8 MODE DIRECT ENTRY NOT compatible with O3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration. CORRESPONDING KIT: H1835A	W599	656	$180.00
ADD: 16 MODE DIRECT ENTRY NOT compatible with O3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration. CORRESPONDING KIT: H1836A	W614	656	$360.00
ADD: 24 MODE DIRECT ENTRY NOT compatible with O3 or Motorcycle Control Heads or W289 Siren/PA or other DEK or Direct Mode Entry Selections. Not compatible with Dash Mount configuration. Requires Remote Mount configuration. CORRESPONDING KIT: H1837A	W615	656	$540.00

WHELEN SIREN (MOTOROLA COMPATIBLE)

NOTE: THE NEW SIREN IS COMPATIBLE WITH APX AND XTL MOBILES WITH "O" SERIES CONTROL HEADS ONLY. THIS SIREN IS NOT

COMPATIBLE WITH ANY "W" SERIES CONTROL HEADS

THE SIREN BASE MODEL TT2592, ONE CABLE AND THE SIREN MOUNTING HARDWARE TT0507 MUST ALWAYS BE ORDERED (THIS SIREN IS ORDERED AS A SEPARATE LINE ITEM, TT2592 IS THE MODEL)

DEK OPTIONS ARE AVAILABLE AS OPTIONS TO THE SUBSCRIBER AS SHOWN BELOW

Description	Nomenclature	APC	Price
WHELEN/MOTOROLA SIREN	TT2592	656	$395.00
SIREN HARDWARE INSTALL KIT	TT05707AA	656	$20.00
SIREN TO RADIO CABLE	TT05708AA	656	$65.00
SIREN TO DEK CABLE - O3 CONTROL HEAD ONLY	TT05709AA	656	$76.00

SIREN DEK/SWITCH OPTIONS

ADD: DEK FOR WHELEN SIREN W/ O3 CH ONLY	GA00612	656	$105.00
ADD: DEK FOR WHELEN SIREN	GA00614	656	$105.00

Auxiliary Switches DEK

Description	Nomenclature	APC	Price
ADD: AUXILIARY SWITCH PANEL Corresponding kit: HLN1198. Remote Mount Required. NOT compatible with O3 control head or motorcycle.	W591	656	$165.00

Alarm

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAY AND CABLE For either HORN or LIGHTS. NOT both	W116	656	$75.00

Emergency

Description	Nomenclature	APC	Price
ADD: EMERGENCY ID EXT. FOOTSWITCH Corresponding kit: HLN5113.	W470	656	$56.00
ADD: EXTERNAL EMERGENCY PUSHBUTTON Corresponding kit: HLN5131	W686	656	$56.00

Data Cables

Description	Nomenclature	APC	Price
ADD: RS232 DATA INTFC CBL DASH 5 FT RS232 DATA CABLE Corresponding kit: HKN6160A.	G303	656	$50.00
ADD: RS232 DATA INTFC CBL TRK 20 FT RS232 DATA CABLE Corresponding kit: HKN6161A.	G304	656	$50.00
ADD: USB DATA INTFC CABLE-DASH 6 FT USB W/IGNITION SENSE Corresponding kit: HKN6163B. Can be used to program APX Mobile Radios.	G306	656	$50.00
ADD:USB DATA INTFC CABLE-TRK 16.5 FT USB W/IGNITION SENSE Corresponding kit: HKN6172B. Can be used to program APX Mobile Radios.	G309	656	$50.00

RF Modem

Description	Nomenclature	APC	Price
ENH: ENABLE RF MODEM The APX mobiles do not support Site Lens or System Watch. Therefore, the APX RF Modem function does not support the legacy System Watch or Site Lens applications. The APX RF Modem supports Conventional or 9600 Trunking only. Enabling the RF Modem in conventional mode allows provisioned APX portables to pass accountability data through the portable option Q445.	G319	656	$0.00

RF ID Tag

Description	Nomenclature	APC	Price
ADD: RFID LABEL	GA00268	656	$15.00

Service Options

Description	Nomenclature	APC	Price
ENH: 1 YR REPAIR SERVICE ADVANTAGE	G77	185	$83.00
ENH: 2 YR REPAIR SERVICE ADVANTAGE	G78	185	$158.00

ENH: 3 YR REPAIR SERVICE ADVANTAGE	GA00232	185	$236.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$319.00
ENH: 3 YR RSA COMPREHENSIVE	GA00255AB	185	$317.00

Amplifier

*(**UHF and VHF Mid and High Power Radios Only**)*

Description	Nomenclature	APC	Price
ADD: RF PREAMP Options applies only to VHF & UHF radios.	W12	856	$66.00

Mounting Lock

Description	Nomenclature	APC	Price
ADD: KEY LOCK MOUNT APX Remote Mount Mid Power Only.	W81	856	$33.00

Test Results

Description	Nomenclature	APC	Price
ADD: PRINTED TEST RESULTS APEX	G799	858	$0.00

Section D: Aftermarket Accessories

Antenna

7/800

Description	Nomenclature	APC	Price
ANTENNA (762-870 MHZ) 3DB LOW-PROFILE	HAF4013	500	$43.00
ANTENNA (762-870 MHZ) 3DB ELEVATED FEED	HAF4014	500	$75.00
ANT 3DB MCYCLE 762-870MHZ	HAF4015	500	$56.00
ANTENNA (762-870 MHZ) 1/4 WAVE	HAF4016	500	$23.00
ANTENNA (762-870 MHZ) 3DB GAIN COLLINEAR	HAF4017	500	$38.00
ANT 3DB LOW PRO MCYC 762-870MH	HAF4018	500	$75.00

VHF

Description	Nomenclature	APC	Price
ANTENNA, VHF (136-144MHZ) 1/4 WAVE ROOF TOP High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohms, nominal	HAD4006	554	$19.50
ANTENNA, VHF (144-150.8 MHZ) 1/4 WAVE ROOF TOP High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohms, nominal	HAD4007	554	$19.50
ANTENNA, VHF (150.8-162 MHZ) 1/4 WAVE ROOF TOP High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohms, nominal	HAD4008	554	$19.50
ANTENNA, VHF (162-174 MHZ) 1/4 WAVE ROOF TOP High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohms, nominal	HAD4009	554	$19.50
ANTENNA VHF 1/4 WAVE	RAD4002ARB	554	$100.00
ANTENNA VHF 1/4 WAVE	RAD4004ARB	554	$100.00
ANTENNA VHF 1/4 WAVE	RAD4005ARB	554	$75.00
ANTENNA 132-174 3DB GAIN	HAD4022A	585	$65.50
ANT ROOF MT WB VHF 146/174	HAD4017A	500	$44.00

Adapters

Description	Nomenclature	APC	Price
AUDIO CABLE ADAPTER	HKN6158	500	$49.00
ADAPTER CABLE DATA	HKN6159	500	$49.00
KEYLOADING CABLE ADAPTER (GCAI) Used to adapt keyload cable TKN8531 for all APX 7500, APX,6500, APX4500, XTL 5000 and XTL 2500. Not compatible with XTL1500.	HKN6182	514	$41.50

Bull Horns for Sirens and Public Address

Description	Nomenclature	APC	Price
SPEAKER SIREN, ROUND W/CHROME & BLACK	TDN6251	708	$329.00

SPEAKER RECTANGULAR WITH CHROME FINISH	TDN6252	706	$285.00
SPEAKER UNDERHOOD WITH GRAY FINISH	TDN6253	706	$220.00
SPEAKER ROUND WITH GRAY FINISH	TDN6254	706	$248.00

Control Station Tray and Power Supply

Description	Nomenclature	APC	Price
MOBILE DESK TRAY	HLN6042	617	$77.00
PS 14V 10A 117/240 VAC.	HPN4007C	500	$296.00

Customer Programming Software

Programming and Data Cables
(Please see CPS PART NUMBER GUIDE for cable descriptions)

CABLE, DATA, USB, 4.5M, XTL5000	HKN6172B	500	$85.00

DEK/VIP

Description	Nomenclature	APC	Price
AUDIO CABLE ADAPTER	HKN6156	500	$49.00
ADAPTER CABLE DATA	HKN6159	500	$49.00
KEYLOADING CABLE ADAPTER (GCAI)	HKN6182	514	$41.50
Used to adapt keyload cable TKN8531 for all APX 7500, APX6500, APX4500, XTL 5000 and XTL 2500. Not compatible with XTL1500.			

Emergency

Description	Nomenclature	APC	Price
EMERGENCY FOOT SWITCH	HLN5113	804	$61.75

Microphones

XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00
AS SPECTRA & XTL5000 DESKTOP MIC	RMN5070A	706	$172.00
HANDSET/HANGUP (HANGUP CUP)	HLN1457	706	$265.00
MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	706	$295.00
PUSH BUTTON PTT	RLN5926A	706	$39.00

Microphone Extension Cable

Description	Nomenclature	APC	Price
CABLE, MOBILE MIC EXTENSION, 10FT	PMKN4033A	706	$42.00
Not for use with the W20 GCAI Microphone.			
O9, GCAI EXTENSION CABLE	PMKN4093A	656	$36.00

Motorcycle Weather Proof Housing

Power

Description	Nomenclature	APC	Price
POWER CABLE, 10 FT. (LOW/MID POWER) 30 & 35 WATT	HKN4191	412	$16.00
POWER CABLE, 20 FOOT TO 12V BATTERY	HKN4192	508	$38.25
VHF & UHF models.			
CABLE, POWER, 100W	HKN6110	565	$37.00
CONTROL HEAD / IGNITION SENSE POWER CABLE	HKN6188	514	$20.75

Programming AND Flash

O5 Remote Mount Cables

CABLE, REMOTE MOUNT, 75 FT	HKN6166	514	$80.00
CABLE, REMOTE MOUNT, 115 FT	HKN6165	514	$105.00
CABLE,REMOTE MOUNT,131 FT	HKN6164	514	$122.00

O3 Remote Mount Cables

O3 CAN 17' EXTENSION CABLE	PMLN4958A	585	$94.50
O3 Remote Mount Cable, Included in O3 Remote Mount G67 Option			

O3 Remote Mount Cable

Description	Nomenclature	APC	Price
O3 CAN 18' EXTENSION CABLE Included in O3 Remote Mount G67 Option	PMLN4958	500	$94.50

Siren/DEK

Please include the H1831 model when ordering the following for DEKs:

Description	Nomenclature	APC	Price
ODYSSEY CH DEK KIT Includes cable and mounting hardware.	H1831	500	$35.75
6 STATUS/MESSAGE (W355) Messaga buttons are inlcuded, however, they are ONLY applicable for systems 3.X and earlier.	H1336	604	$475.00

Speakers

Description	Nomenclature	APC	Price
EXTERNAL WATER RESISTANT SPEAKER 15 WATTS	HSN4040A	795	$76.00
MCS EXT SPKR 13W	HSN4032B	500	$71.50
EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	HSN4036	476	$60.50
MCYCLE WP SPEAKER	HSN6003B	500	$63.50

Miscellaneous

Description	Nomenclature	APC	Price
WILDCARD	HLN1196	412	$165.00

Manuals

*** Currently, the APX7500 O5 User Guide and the APX7500 O5 Install Manual can be downloaded from MOL (Motorola Online). ***
*** These documents can be found in Resource Center > Product Information >Manuals >Two-Way Mobile ***

Section E: Control Head Conversion Allied Sales Models

PLEASE READ ALL ALLIED MODEL AND OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

FYI: THE FOLLOWING ALLIED SALES MODELS ARE ORDERABLE VIA COF, MOL, AND R12 ONLY - THESE KITS ARE NOT STOCKED IN THE AFTERMARKET PARTS DIVISION

NOTE: IF YOU WOULD LIKE AN EXTENSION CABLE FOR YOUR O3 CONTROL HEAD TO MAKE YOUR O3 A REMOTE MOUNT, PLEASE ORDER H1849B. (IF ORDERING THIS KIT ALONG WITH ANOTHER ALLIED SALES MODEL, PLEASE ORDER THEM AS SEPARATE LINE ITEMS)

APX RETROFIT ALLIED SALES MODELS

HIGH POWER ONLY

HIGH POWER O3 CONTROL HEAD TO O5 CONTROL HEAD REMOTE MOUNT (REQUIRES MICROPHONE OPTION)

O3 TO O5 RM HIPWR W/CH	H1640	656	$650.00

HIGH POWER O3 CONTROL HEAD TO 09 CONTROL HEAD **REMOTE MOUNT** (REQUIRES MICROPHONE OPTION)

03 TO 09 REMOTE MNT HIPWR	H1655	656	$1,259.00

HIGH POWER O5 CONTROL HEAD **REMOTE MOUNT** TO 09 CONTROL HEAD **REMOTE MOUNT**

O5 RM TO O9 RM HIPWR W/CH	H1656	656	$1,259.00

HIGH POWER O9 CONTROL HEAD **REMOTE MOUNT** TO 05 CONTROL HEAD **REMOTE MOUNT**

09RM TO 05RM MIID/HIPWR RETROFIT KIT	H1661	656	$650.00

MID POWER ONLY

MID POWER O3 OR 09 CONTROL HEAD TO O5 CONTROL HEAD **DASH MOUNT** (REQUIRES MICROPHONE OPTION)

Description	Nomenclature	APC	Price
O5 MID POWER DASH CONVERSION KIT Contains complete O5 dash control head and O5 dash transceiver faceplate. O5 mic available as option. Does not include transceiver trunion. If you have a secure capable unit with HLN6976 (3 DAY KEY RETENTION BOARD) or HLN6977 (30 SEC	H1619	500	$650.00

KEY RETENTION BOARD), you must replace it with either MHLN8918 (3 DAY KEY RETENTION BOARD) or MHLN8919 (30 SEC KEY RETENTION BOARD)

MID POWER O3 CONTROL HEAD TO O5 CONTROL HEAD **REMOTE MOUNT** (REQUIRES MICROPHONE OPTION)

Description	Nomenclature	APC	Price
O3 TO O5 RM MIDPWR W/CH	H1843	656	$650.00

O3 CONTROL HEAD **DASH MOUNT** TO O3 CONTROL HEAD **REMOTE MOUNT**

Description	Nomenclature	APC	Price
O3DM TO O3 RM MIDPWR NOCH	H1849	656	$159.00

MID POWER O3 CONTROL HEAD TO O9 CONTROL HEAD **REMOTE MOUNT** (REQUIRES MICROPHONE OPTION)

Description	Nomenclature	APC	Price
03 TO 09RM CONTROL HEAD RETROFIT MID/HIPWR	H1858	656	$1,259.00

MID POWER O5, O7 CONTROL HEAD **REMOTE MOUNT** TO O3 CONTROL HEAD **DASH MOUNT**

Description	Nomenclature	APC	Price
O5 REM TO 03 DM MIDPWR W/CH	H1847	656	$625.00

MID POWER O5, O7 CONTROL HEAD **REMOTE MOUNT** TO O5 CONTROL HEAD **DASH MOUNT**

Description	Nomenclature	APC	Price
O5 RM TO 05 DM MIDPWR NOCH	H1848	656	$159.00

MID POWER O5, O7 CONTROL HEAD **DASH MOUNT** TO O5 CONTROL HEAD **REMOTE MOUNT**

Description	Nomenclature	APC	Price
O5 DM TO O5 RM (MP)	H1653	656	$325.00

MID POWER O5, O7 **DASH MOUNT** OR 03 **REMOTE/DASH** TO O9 CONTROL HEAD **REMOTE MOUNT** (NOTE: THIS KIT CONTAINS THE UNIVERSAL RELAY CONTROLLER AND ALL EQUIPMENT FOR SIREN AND LIGHT CONFIGURATION

Description	Nomenclature	APC	Price
REMOTE MOUNT ANY CH TO 09 REMOTE MIDPWR W URC	H1834	656	$1,585.00

MID POWER O5, O7 CONTROL HEAD **REMOTE MOUNT** TO O9 CONTROL HEAD **REMOTE MOUNT**

Description	Nomenclature	APC	Price
O5 RM TO O9 RM HIPWR W/CH	H1856	656	$1,259.00

MID POWER O5, O7 CONTROL HEAD **DASH MOUNT** TO O9 CONTROL HEAD **REMOTE MOUNT**

Description	Nomenclature	APC	Price
O5DM TO O9 RM MIDPWR W/CH	H1865	656	$1,259.00

MID POWER O9 CONTROL HEAD **REMOTE MOUNT** TO O5 CONTROL HEAD **REMOTE MOUNT**

Description	Nomenclature	APC	Price
09RM TO 05RM MIID/HIPWR RETROFIT KIT	H1861	656	$650.00

MID POWER O9 CONTROL HEAD **REMOTE MOUNT** TO O3 CONTROL HEAD **REMOTE MOUNT**

Description	Nomenclature	APC	Price
09 TO O3RM MIDPWR W/CH	H1882	656	$625.00

MID POWER O9 CONTROL HEAD **REMOTE MOUNT** TO O5 CONTROL HEAD **DASH MOUNT**

Description	Nomenclature	APC	Price
O9 TO O5DM MIDPWR W/CH	H1863	656	$650.00

07 Control Head Kits

Description	Nomenclature	APC	Price
O7 CH DASH MOUNT RETROFIT KIT	H1869	658	$850.00
Description	**Nomenclature**	**APC**	**Price**
O7 CH REMOTE MOUNT RETROFIT KIT	H1870	658	$850.00

02 Control Head Kit

itemhn=h1872,0#

MICROPHONES

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED	G90	500	$0.00
Select this option when ordering W3 Handheld Control Head (G62/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ADD: PALM MICROPHONE	W22	500	$72.00
Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1080			
ADD: KEYPAD MIC (GCAI)	W20	514	$160.00
Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079			

9: SPEAKER *(OPTIONAL)*

Description	Nomenclature	APC	Price
ADD: SPKR 15W WATER RESISTANT	G831	656	$60.00
ADD: NO SPEAKER NEEDED	G142	656	$0.00
ADD: AUXILARY SPKR 7.5 WATT	B18	656	$60.00
Corresponding kit: HSN4031.			
ADD: AUXILARY SPKR 13W (3.2OHM)	W432	656	$71.50

Remote Mount Cables
*****Total cable length may not be greater that 131 ft (40 meters)*****

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT)	G618	514	$10.00
Corresponding kit: HKN6170			
ADD: REMOTE MOUNT CABLE 17 FT	G626	514	$15.00
Corresponding kit: HKN6169			
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT)	G610	514	$25.00
Corresponding kit: HKN6168			
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT)	G609	514	$35.00
Corresponding kit: HKN6167			
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT)	G607	514	$45.00
Corresponding kit: HKN6166A			
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT)	G879	514	$55.00
Corresponding kit: HKN6165			
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT)	G562	514	$65.00
For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio Corresponding kit: HKN6164			

Section G: Remote Control Head Replacement AND Multiple Control Head Allied Sales Model

PLEASE READ ALL ALLIED MODEL AND OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

Remote Control Head Replacement AND Multiple Control Head Retrofit Kit

The APX 7500 O5 Remote Control Head Replacement AND Multiple Control Head Retrofit allied sales model provide the following:

- QTY 1: **REMOTE** mount control head assembly that includes a control head + flex cable + control head interface board rear housing (CHIB)
- Qty 1. Remote Control Head Power cable (HKN6188)
- Qty 1: Remote Control Head Mounting trunion and herdware
- Qty 1: Manual CD and dust cover kit
- OPTION: Must select a *microphone option*

- OPTION: Must select a speaker option

- OPTION: Must select a remote cable option

***IF YOU ARE ADDING A CONTROL HEAD TO CONVERT A SINGLE CONTROL REMOTE MOUNT RADIO TO A DUAL, TRI, OR QUAD CONTROL, THEN YOU MUST MAKE SURE THE RADIO HAD VERSION 8.9 SOFTWARE OR GREATER.

THE ALLIED SALES MODEL BELOW DOES NOT INCLUDE A FLASH FIRMWARE REFRESH. PLEASE SEE FLASH UPGRADE PRICE PAGE ***

FIRMWARE VERSION R09.00.00 OR HIGHER IS REQUIRED.

Description	Nomenclature	APC	Price
O5 REMOTE CTRL HD/CHIB REPLACEMENT/ADDITION	H1823	500	$570.00

Microphones
(Must Select One and Only One)

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED	G90	500	$0.00
Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ADD: PALM MICROPHONE	W22	500	$72.00
Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090			
ADD: KEYPAD MIC (GCAI)	W20	514	$180.00
Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079			

Speakers
(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT	B18	500	$60.00
Corresponding kit: HSN4031.			
ADD: INCREASED AUDIO POWER 13W	W432	500	$71.50
Corresponding kit: HSN4032. NOT COMPATIBLE with W865 Control Station and Motorcycle Configuration.			
ADD: SPKR 7.5W WATER RESISANT	G832	656	$80.50
Corresponding kit: HSN4036			

Remote Mount Cables
*****For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters)*****
(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT)	G618	514	$10.00
Corresponding kit: HKN6170			
ADD: REMOTE MOUNT CABLE 17 FT	G628	514	$15.00
Corresponding kit: HKN6169			
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT)	G610	514	$25.00
Corresponding kit: HKN6168			
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT)	G609	514	$35.00
Corresponding kit: HKN6167			
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT)	G607	514	$45.00
Corresponding kit: HKN6166A			
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT)	G879	514	$55.00
Corresponding kit: HKN6165			
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT)	G582	514	$65.00
For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio Corresponding kit: HKN6164			

For product questions please contact your Subscriber BOM or Product Planner (GDXV38)

Data Compiled 16-May-2013 using DUP and all prices in USD

Prices Subject to Change

Part #	Description:		List Price
F2380A	MCD 5000 DESKSET	$	1,500.00
F7979A	MCD 5000 DESKSET RADIO GATEWAY UNIT (RGU)	$	1,500.00
TT2401	CERTIFIED MCD 5000 ACP Z400 PC - Win 7 SP1 (64bit)	$	3,100.00
FHN7394A	MCD 5000 DESKSET WALL MOUNT KIT	$	12.00
FHN7469A	MCD 5000 DESKSET / RGU POWER SUPPLY WITH USA POWER CORD	$	100.00
FHN7470A	MCD 5000 DESKSET HEADSET JACK BOX & CABLE	$	150.00
FKN8688A	CABLE - MCD 5000 RGU TO MCS 2000 III DIRECT CONNECT	$	100.00
FKN8689A	CABLE - MCD 5000 RGU TO CDM 1550 SERIES DIRECT CONNECT	$	100.00
FKN8690A	CABLE - MCD 5000 RGU TO ASTRO CONSOLETTE W9 DIRECT CONNECT	$	100.00
FKN8691A	CABLE - MCD 5000 RGU TO MC3000 DJB FOR ASTRO CONSOLETTE W9	$	100.00
FKN8692A	CABLE - MCD 5000 RGU TO MC3000 DJB FOR MCS 2000 III	$	100.00
FKN8693A	CABLE - MCD 5000 RGU TO MC3000 DJB FOR CDM 1550 SERIES	$	100.00
FKN8695A	ETHERNET CABLE 10' WITH RED & BLACK LABELS	$	20.00
FKN8696A	CABLE - MCD 5000 DESKSET TO LOGGER	$	40.00
FVN5847A	MCD 5000 DESKSET SYSTEM CONFIG TOOL - SYSTEM W/OUT OMC	$	250.00
FVN5848A	MCD 5000 DESKSET SYSTEM CONFIG TOOL - SYSTEM WITH OMC	$	250.00
FVN5850A	MCD 5000 DESKSET SYSTEM OMC SERVER APPLICATION SW	$	10,000.00
FVN5853A	MCD 5000 DESKSET SYSTEM ACP APPLICATION SW	$	2,500.00
FHN7290A	FRU: K-STYLE HANDET (INCLUDES COLIED CABLE) FOR MCD 5000 DESKSET	$	75.00
FHN7485A	FRU: MCD 5000 DESKSET / RGU POWER SUPPLY W/OUT POWER CORD	$	85.00
FKN8694A	FRU: CABLE - MCD 5000 DESKSET TO HEADSET JACK BOX	$	40.00
FKN8704A	FRU: CABLE - MCD 5000 DESKSET RGU GROUND CABLE	$	30.00
FKN8706A	FRU: POWER CORD FOR USA - MCD 5000 DESKSET / RGU POWER SUPPLY	$	15.00

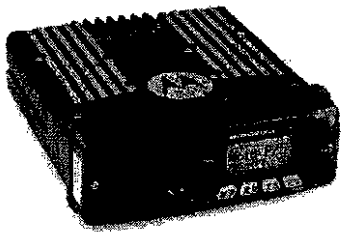
Prices subject to Change

Part #	Description		List Price
TT2592	WHELEN/MOTOROLA SIREN	$	395.00
TT05707AA	SIREN HARDWARE INSTALL KIT	$	20.00
TT05708AA	SIREN TO RADIO CABLE	$	65.00
TT05709AA	SIREN TO DEK CABLE - O3 CONTROL HEAD ONLY	$	78.00
HAF4013	ANTENNA (762-870 MHZ) 3DB LOW-PROFILE	$	43.00
HAF4014	ANTENNA (762-870 MHZ) 3DB ELEVATED FEED	$	75.00
HAF4015	ANT 3DB MCYCLE 762-870MHZ	$	56.00
HAF4016	ANTENNA (762-870 MHZ) 1/4 WAVE	$	23.00
HAF4017	ANTENNA (762-870 MHZ) 3DB GAIN COLLINEAR	$	38.00
HAF4018	ANT 3DB LOW PRO MCYC 762-870MH	$	75.00
HAD4006	ANTENNA, VHF (136-144MHZ) 1/4 WAVE ROOF TOP	$	19.50
HAD4007	ANTENNA, VHF (144-150.8 MHZ) 1/4 WAVE ROOF TOP	$	19.50
HAD4008	ANTENNA, VHF (150.8-162 MHZ) 1/4 WAVE ROOF TOP	$	19.50
HAD4009	ANTENNA, VHF (162-174 MHZ) 1/4 WAVE ROOF TOP	$	19.50
RAD4002ARB	ANTENNA VHF 1/4 WAVE	$	100.00
RAD4004ARB	ANTENNA VHF 1/4 WAVE	$	100.00
RAD4005ARB	ANTENNA VHF 1/4 WAVE	$	75.00
HAD4022A	ANTENNA 132-174 3DB GAIN	$	65.50
HAD4017A	ANT ROOF MT WB VHF 146/174	$	44.00
HKN6158	AUDIO CABLE ADAPTER	$	49.00
HKN6159	ADAPTER CABLE DATA	$	49.00
HKN6182	KEYLOADING CABLE ADAPTER (GCAI)	$	41.50
TDN6251	SPEAKER SIREN, ROUND W/CHROME & BLACK	$	329.00
TDN6252	SPEAKER RECTANGULAR WITH CHROME FINISH	$	265.00
TDN6253	SPEAKER UNDERHOOD WITH GRAY FINISH	$	220.00
TDN6254	SPEAKER ROUND WITH GRAY FINISH	$	248.00
HLN6042	MOBILE DESK TRAY	$	77.00
HPN4007C	P5 14V 10A 117/240 VAC.	$	296.00
HKN6172B	CABLE, DATA, USB, 4.5M, XTL5000	$	85.00
HKN6158	AUDIO CABLE ADAPTER	$	49.00
HKN6159	ADAPTER CABLE DATA	$	49.00
HKN6182	KEYLOADING CABLE ADAPTER (GCAI)	$	41.50
HLN5113	EMERGENCY FOOT SWITCH	$	61.75
HMN4079D	XTL5000 KEYPAD MICROPHONE	$	320.00
RMN5070A	AS. SPECTRA & XTL5000 DESKTOP MIC	$	172.00
HLN1457	HANDSET/HANGUP (HANGUP CUP)	$	285.00
HMN4097A	MODEL III KEYPAD TELEPH HANDSET KIT	$	295.00
RLN5926A	PUSH BUTTON PTT	$	39.00
PMKN4033A	CABLE, MOBILE MIC EXTENSION, 10FT	$	42.00
PMKN4093A	O9, GCAI EXTENSION CABLE	$	36.00
HKN4191	POWER CABLE, 10 FT. (LOW/MID POWER) 30 & 35 WATT	$	18.00
HKN4192	POWER CABLE, 20 FOOT TO 12V BATTERY	$	38.25
HKN6110	CABLE, POWER, 100W	$	37.00
HKN6188	CONTROL HEAD / IGNITION SENSE POWER CABLE	$	20.75
HKN6166	CABLE, REMOTE MOUNT, 75 FT	$	80.00
HKN6165	CABLE, REMOTE MOUNT, 115 FT	$	105.00
HKN6164	CABLE,REMOTE MOUNT,131 FT	$	122.00
PMLN4958A	O3 CAN 17' EXTENSION CABLE	$	94.50
PMLN4958	O3 CAN 18' EXTENSION CABLE	$	94.50

H1831	ODYSSEY CH DEK KIT	$	35.75
H1336	SPECTRA MOBILE SIREN/PA (W269)	$	637.00
H1337	SPECTRA MOBILE PA KIT (W589)	$	570.00
H1500	SIREN PA	$	545.00
H1338	8 STATUS/MESSAGE (W355)	$	475.00
HSN4040A	EXTERNAL WATER RESISTANT SPEAKER 15 WATTS	$	76.00
HSN4032B	MCS EXT SPKR 13W	$	71.50
HSN4038	EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	$	60.50
HSN6003B	MCYCLE WP SPEAKER	$	63.50
HLN1196	AUXILIARY SWITCH PANEL (WS91- W4, WS, W7)	$	165.00
306066SA04	AC LINE CORD 3 WR 110V	$	19.00
3064153H02	ASSEMBLY,CABLE,SHIELDED	$	35.00
GLN7278B	PTT FOOTSWITCH (XTL)	$	79.00
H1336B	SPECTRA SIREN/PA	$	637.00
H1338A	SPECTRA C9 8 STS/MSG	$	475.00
H1339A	SPECTRA C9 8 STS/8 MSG	$	650.00
H1615A	SYS 9000 MODE 1-8	$	150.00
HAD4006A	UNITY GAIN ANTENNA QUARTERWAVE VHF 136-144 - ROOF MOUNT	$	19.50
HAD4007A	UNITY GAIN ANTENNA QUARTERWAVE VHF 144-150.8 - ROOF MOUNT	$	19.50
HAD4008A	UNITY GAIN ANTENNA QUARTERWAVE VHF 150.8-162 - ROOF MOUNT	$	19.50
HAD4009A	UNITY GAIN ANTENNA QUARTERWAVE VHF 162-174 - ROOF MOUNT	$	19.50
HAD4016A	ANT ROOF MT WB VHF 136/162	$	47.75
HAD4017A	ANT ROOF MT WB VHF 146/174	$	50.25
HAD4021A	VHF ANT WIDEBAND 136-174 MHZ	$	60.00
HAD40Z2A	ANTENNA 132-174 3DB GAIN	$	65.50
HAE4003A	UNITY GAIN ANTENNA UHF 450-470 QUARTERWAVE - ROOF MOUNT	$	21.50
HAE4004A	UNITY GAIN ANTENNA UHF 470-512 QUARTERWAVE - ROOF MOUNT	$	21.50
HAE4011A	ANTENNA ROOF TOP 3.5DB UHF	$	77.50
HAE4012A	ANT ROOF TOP 3.5 dB 470-495 MHz	$	77.50
HAE4013A	ANT ROOF TOP 3.5 dB 494-512 MHz	$	72.00
HAE6010A	ANT 3.5DB GAIN 380-433MHZ	$	63.00
HAE6011A	ANT 5.0DB GAIN 380-433MHZ	$	63.00
HAE6012A	UNITY GAIN ANTENNA UHF 380-433 QUARTERWAVE - ROOF MOUNT	$	23.00
HAE6013A	ANT WIDEBAND 2.0DB GAIN 380-470 MHZ	$	60.25
HAE6014A	ANT MCYCLE 1/4WAVE WHIP 380-433 MHZ	$	29.00
HAE6015A	ANT 2DB WIDEBAND 450-520 MHZ	$	65.00
HAE6016A	ANT LOW PROFILE 450-512 MHZ	$	120.00
HAF4013A	ANT 762-870 MHZ 3DB STUBBY THRU HOLE MU	$	43.00
HAF4014A	ANT 3DB ELEVATED FEED 762-870	$	75.00
HAF4015A	ANT 3DB MCYCLE 762-870MHZ	$	56.00
HAF4016A	UNITY GAIN ANTENNA QUARTERWAVE 762-870MHZ - ROOF MOUNT	$	23.00
HAF4017A	ADD: ANT 3DB COLLINEAR 762-870MHZ	$	40.75
HAF4018A	ANT 3DB LOW PRO MCYC 762-870MH	$	75.00
HAG4000A	APX7500 ROOF MT GPS ANTENNA	$	76.00
HAG4001A	APX7500 GPS MCYCLE ANTENNA	$	74.00
HKN1018A	HSET/HANGUP NORMAL ARMOURED CABLE	$	300.00
HKN4191B	MOBILE PWR CABLE 10 FT, 12 AWG, 20A	$	18.00
HKN4192B	MOBILE PWR CABLE 20 FT, 10 AWG, 20A	$	38.33
HKN6032A	MCYCLE POWER CABLE	$	23.10
HKN6110B	CABLE, POWER, 100W	$	24.68
HKN6122C	CBL DATA REMOTE HP 22'	$	56.96
HKN6160B	CABLE KIT 6' DASH MOUNT	$	50.00
HKN6161B	CABLE KIT 20' REMOTE MOUNT DATA	$	50.00

HKN6163C	CABLE, DATA, USB, 1-1/2M, XTLS000	$	99.00
HKN6164A	CABLE,REMOTE MOUNT,131 FT	$	122.00
HKN6165A	CABLE, REMOTE MOUNT, 11S FT	$	105.00
HKN6166A	CABLE, REMOTE MOUNT, 7S FT	$	80.00
HKN6167B	CABLE, REMOTE MOUNT, 1SM	$	7S.00
HKN6168B	CABLE, REMOTE MOUNT, 10M	$	66.00
HKN6169B	CABLE, REMOTE MOUNT, SM	$	58.00
HKN6170B	CABLE, REMOTE MOUNT, 10 FT	$	50.00
HKN6172C	CABLE, DATA, USB, 4-1/2M, XTL5000	$	99.00
HKN6182A	CABLE KEYLOADING ADAPTER CGAI	$	45.00
HKN6183B	CABLE, CH PROGRAMMING RS-232 (GCAI)	$	66.35
HKN6187B	CABLE, CH POWER AND SPEAKER	$	33.00
HKN6188B	CABLE, CH POWER AND SPEAKER	$	24.00
HKN6196A	CABLE, VIP	$	30.00
HLN1224B	AUXILIARY SWITCH PANEL	$	280.00
HLN1439G	ACCY,ACCY,SIREN ASTRO MOBILE	$	665.00
HLN1457A	HANDSET/HANGUP (HANGUP CUP)	$	285.00
HLN5113B	EMERGENCY FOOTSWITCH	$	61.75
HLN5131C	EMERGENCY PUSH BUTTON SWITCH	$	61.75
HLN5391A	MIC HANGUP CLIP SYS 9000	$	14.18
HLN6042A	TRAY BASE SPECTRA	$	77.00
HLN6372A	KEYLOCK MT	$	44.00
HLN6819B	SIREN SWITCH BOX	$	550.00
HLN6863B	ACCESSORY CONNECTOR XTL5000	$	25.75
HLN6961A	ACCESSORY CONNECTOR (CHIB)	$	22.00
HLN6969A	XTL 5000, EXTERNAL ALARM RELAY	$	64.25
HLN7002A	TRUNNION HARDWARE KIT	$	35.00
HLN7003A	INSTALLATION HARDWARE HIGHPOWER KIT	$	60.00
HLN7022A	BLACK MOTORCYCLE ENCLOSURE WITH HDW	$	1,200.00
HLN7031A	TRUNNION, CH REMOTE MOUNT	$	55.00
HMN1079B	MOD MOTORCYCLE WP MIC DB9 PIN CONN	$	72.00
HMN1089B	HAND MIC (GCAI), WATER RESISTANT	$	68.00
HMN1090C	ASSY,MIC,FRNT,GRY,STD PALM MIC (GCA	$	75.00
HMN4079E	XTL5000 KEYPAD MICROPHONE	$	320.00
HMN4097A	MODEL III KEYPAD TELEPH HANDSET KIT	$	295.00
HPN4007C	POWER SUPPLY 14V 15A UNI 117/240 VAC	$	296.00
HSN4018C	SPKR SYS 9000	$	53.29
HSN40328	MCS EXT SPKR 13W	$	71.50
HSN4038A	SPKR. 7.5 W REMOTE	$	60.50
H5N4040A	EXTERNAL WATER RESISTANT REMOTE	$	76.00
PMAN4001A	ASSEMBLY, ANTENNA, GLASS-MOUNT GPS ACTIVE	$	36.50
PMKN4034A	CABLE, MOBILE MIC EXTENSION, 20FT	$	48.00
PMKN4093A	09, GCAI EXTENSION CABLE	$	36.00
PMLN4958A	03 CAN 17' EXTENSION CABLE	$	94.50
PMLN4959A	03 ACCESSORY CABLE	$	94.50
PMUN1046A	09 RELAY CONTROL BOX	$	350.00
RAD4002ARB	ANT VHF 1/4 WAVE	$	100.00
RAD4003ARB	ANT VHF 1/4 WAVE	$	100.00
RAD4004ARB	ANT VHF 1/4 WAVE	$	100.00
RAD4005ARB	ANT VHF 1/4 WAVE	$	75.00
RAE4014ARB	ANT 5.0DB GAIN 445-470MHZ	$	110.25
RLN5926A	PUSH BUTTON PTT	$	39.00
RMN5054B	SMART VISOR MIC	$	40.00

RMN5070A	DESKTOP MIC (GCAI)	$	172.00
TDN6251A	SPEAKER SIRON, CHROME & BLACK	$	329.00
TDN6252A	SPEAKER SIRON, WHITE EPOXY	$	265.00
TDN6253A	SPEAKER, UNDERHOOD W/GREY FIN	$	220.00
TDN6254A	SPEAKER SIRON, EPOXY/ ALUMINUM	$	248.00
TKN8531C	CABLE, KEYLOAD	$	84.00
PMKN4012A	APX DMR PORT PROGRAMMING CABLE	$	75.00
WPLN6904A	KEYLOAD CABLE FOR APX7000	$	110.00
RVN5224J	CPS R05.01.00 ASTRO DIG APX POR MOB	$	375.00
HAF4017	ANTENNA (762-870 MHZ) 3DB GAIN COLLINEAR	$	40.75
L1700	CABLE: 1/4" SUPERFLEX POLY JKT PER FOOT	$	2.25
DSF1MU	1/4" MINI UHF MALE S FLEX CONNECTOR	$	18.00
HAF4017	ANTENNA (762-870 MHZ) 3DB GAIN COLLINEAR	$	40.75
L1700	CABLE: 1/4" SUPERFLEX POLY JKT PER FOOT	$	2.25
DSF1MU	1/4" MINI UHF MALE S FLEX CONNECTOR	$	18.00
RRA4738	ANT TRANSIT DOME 4S0-1470 MHZ	$	88.00
L1700	CABLE: 1/4" SUPERFLEX POLY JKT PER FOOT	$	2.25
DSF1MU	1/4" MINI UHF MALE S FLEX CONNECTOR	$	18.00
HAF4013	ANTENNA (762-870 MHZ) 3DB LOW-PROFILE	$	43.00
L1700	CABLE: 1/4" SUPERFLEX POLY JKT PER FOOT	$	2.25
D5F1MU	1/4" MINI UHF MALE S FLEX CONNECTOR	$	18.00



XTL 1500 Mobile
896-941 MHz Band
Secure and Trunked Radio Systems

Ship Card

Features

All XTL 1500 Mobiles are available with the following hardware features:

- 10 Foot Negative Ground Power Cable (3 meters) for Dash Mount
- Ignition Sense Cable
- Palm Microphone
- Internal Speaker (Standard)
- Mounting Hardware

All XTL 1500 radios are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades.

General Information

The XTL 1500 Mobile Line offers 1 radio hardware model:

Hardware Mode	Modes	Alphanumeric Display
		Lines/Characters
		per Line
CH	512	1/8

OPERATING MODES

XTL 1500 Radio Models are capable of operating in the following voice communication mode:

- 3600 Analog SmartZone Trunking

The mode of operation is programmed on a channel-by-channel basis.

Ordering Requirements

The XTL 1500 Digital Mobile Radio has been set up to simplify ordering of hardware and software for customers.

- The main model number consists of: the mobile transceiver or "brick" for the frequency band and power level, control head hardware, control head software, dash mount capability, mounting hardware, power cable, ignition sense cable, and microphone.
- The XTL 1500 radio also includes an internal speaker.
- Any additional accessories that are required can be ordered as options.
- The XTL 1500 900MHz model comes standard with 512 channels.

Ordering Sequence

Order Example:

1	M28WRS9PW1AN	XTL 1500 Mobile
1A	G967	System Software Package
1B	GXXX	Standard Antenna
1C	Etc.	Other Options
1D	G798, G91	Control Station

- **1 Main Line Item**
  - **Order** the XTL 1500 model number.

- **1A Sub-Items**
  - **Order** the **System Software Package**
    - Select 1 system software package (G967).
    - Refer to the matrices below for specific features that are available with this package (option).

- **1B Accessories**
  - **Order** one (1) Antennas (B925, B926) or No Antenna Needed (G89).

- **1C Etc.**
  - If additional speaker is required, **order** external speaker (B18).

- **1D Control Station**
  - If control station operation is required, **order** Control Station Base Mount (G798) and Power Supply with power cable (G91).
  - No external speaker should be ordered for control station operation as the mobile includes an internal speaker as standard.

Each hardware model must be ordered with the System Software Package / option listed below. Please refer to the list of features and capabilities which corresponds to the system type ordered.

COMMON SOFTWARE FEATURES SUPPORTED BY "SmartZone® System Packages"		
	"3600 Analog Trunking"	"9.6KB ASTRO Digital"
	G967	**G964**
RADIO WIDE FEATURES		Project 25
512 Modes / Channels	Yes	Yes
Analog Operation	Yes	Yes
Digital Operation	Yes	Yes
12.5 KHz Programmable Channels	Yes	Yes
Encryption	No	Yes
One Touch Operation	Yes	Yes

Radio Wide Transmit Inhibit	Yes	Yes
Time Out Timer	Yes	Yes
FLASHport	Yes	Yes
ANALOG CONVENTIONAL FEATURES		
Conventional Features are additional radio wide features beyond those specified in the APCO Project 25 documents.		
CSQ/PL/DPL	Yes	Yes
Dual Priority Channel Scan	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes
Scan (Auto, Pre-programmed)	Yes	Yes
Monitor	Yes	Yes
DTMF (Telephone Tone Generation w/ Microphone)	Yes	Yes
MDC PTT ID (Encode / Decode)	Encode	Yes
MDC Selective Radio Inhibit (Decode)	Yes	Yes
MDC Call Alert (Encode / Decode)	Yes	Yes
MDC Radio Check (Decode)	Yes	Yes
MDC Voice Selective Call (Encode / Decode)	Yes	Yes
MDC Remote Monitor	N/A	N/A
MDC Call Lists (Call Alert / Selective Call)	Yes	Yes
MDC Emergency Call (Encode / Decode)	Yes	Yes
MDC Emergency PTT ID (Encode)	Encode	Yes
MDC Emergency Alarm (Encode)	Yes	Yes
MDC Emergency w/ Voice to Follow	Yes	Yes
MDC Select Emergency	Yes	Yes
MDC Status (Encode)	Yes	Yes
MDC Message (Encode)	Yes	No
MDC Silent Emergency (Encdode)	Yes	Yes
Trunking Type II Only Features		
20 Trunked Systems (Maximum)	Yes	Yes
Talkgroup Calls	Yes	Yes
PTT ID	Yes	Yes
Call Alert Encode / Decode	Yes	Yes
Dual Mode Scan	Yes	Yes
Failsoft by Talkgroup	Yes	Yes
Telephone Interconnect Unlimited (Encode / Decode)	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes
Selective Radio Inhibit	Yes	Yes
Dynamic Regrouping	Yes	Yes
Status / Message (No DEK)	Yes	Yes
Dispatcher Interrupt	No	No
Private / Enhanced Conversation Encode / Decode	Yes	Yes
Radio Trace	Yes	No

Reprogram Request	Yes	Yes
Voice on Control	Future	Future
SmartZone Automatic Site Registration	Yes	Yes
SmartZone RSSI Operation	Yes	Yes
SmartZone Busy Override	No	No
SmartZone Preferred Site	Yes	Yes
SmartZone Forced Site Search	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the XTL 1500 Mobile Radio Series. Separation of frequencies can be as wide as the allowable sub-band per radio model with no degradation of any performance specifications. **If an incorrect antenna is used, degraded performance may be experienced.**

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application ellows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on APX 7000 Dual Display Portable radios. Advanced Messaging is NOT supported on APX 7000 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for APX Mobiles Require: (Note: some control heads are not available on all main models)

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- P25 Conventional (G48)
- Packet Data Interface (W947)

OR

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking Software (G361)
- Packet Data Interface (W947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionelity is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

FCC Information

Band/Model	Power Output	Transmitter Certification (Type Acceptance)	Emissions	Applicable Rules
896-940 MHz	10 - 30 Watts	AZ492FT5847	11K0F3E, 8K10F1E, 8K10F1D	90

- *Except for Itinerant and low-power incident channels.*

** Itinerant & Low-Power Incident Channels	
Channel Number	Frequency Range (MHz)
TBD	TBD

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

Ç Canada personnel refer to Section A under CANADA ONLY information.

Model

Description	Nomenclature	APC	Price
XTL 1500 MOBILE 35 W, 896-940MHZ	M28WRS9PW1 N	775	$1,600.00

Options

System Software Options

(ONE SELECTION ONLY)

Description	Nomenclature	APC	Price
ENH: ANALOG 3600 BAUD ENHANCED	G967	775	$430.00
9600 ASTRO DIGITAL ENHANCE	G964	775	$830.00
ADD: XTL1500 RADIO AUTHENTICATION	W391	775	$100.00

Antennas

Description	Nomenclature	APC	Price
ADD: ANT 900MHZ (890-960MHZ) 3DB LOW ROOF TOP 14?	B925	722	$43.00
ADD: ANT 900MHZ (890-960MHZ) 3DB LOW ROOF TOP 22?	B926	623	$75.00
ADD: NO ANTENNA NEEDED	G89	500	$0.00

Control Station Operation

Description	Nomenclature	APC	Price
ADD: CONTROL STATION POWER SUPPLY Corresponding kit: HPN4007	G91	500	$269.00
ADD: CONTROL STATION MOUNT	G798	775	$70.00

Emergency

Description	Nomenclature	APC	Price
ADD: EXTERNAL EMERGENCY FOOTSWITCH Corresponding kit: HLN5113.	W470	500	$56.00
ADD: EXT EMERGENCY PUSHBUTTON Corresponding kit: HLN5131	W688	500	$56.00

Microphones

Description	Nomenclature	APC	Price
ALT: CONTROL STATION MICROPHONE Dash Mount Required Corresponding Kit: RMN5070	W382	500	$169.00
~~ADD: KEYPAD MIC (GCAI)~~ Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079	W20	514	$180.00

Service Options (These Service options are NOT applicable for Asia Pac)

REPAIR SERVICE ADVANTAGE

Provides for extended hardware repair coverage beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$64.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$246.00
ENH: 3 YR CANADA EXTND WRNTY XTL	GA00313	386	$177.00
ENH: 5 YR CANADA EXTND WRNTY XTL	GA00316	386	$240.00

REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)

Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00

Speakers

Description	Nomenclature	APC	Price
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$60.00

Miscellaneous

Description	Nomenclature	APC	Price
ADD: KEY LOCK MOUNT	W81	617	$33.00
ADD: EXTERNAL ALARM RELAYS AND CABLE For either HORN or LIGHTS. NOT both	W116	500	$75.00
ADD: PRINTED TEST RESULTS	G799	500	$0.00

Accessories

Antenna

Description	Nomenclature	APC	Price
ANTENNA, 900MHZ (890-960MHZ) 1/4 WAVE ROOF TOP, 14' CABLE	RRA4935	554	$30.00
Roof Mount, RG58 A/U cable, Mini UHF connector, Power: 100 Watts, Max., Gain: 3 dB, VSWR: Less than 1.5:1, Impedance: 50 Ohms, nominal			
ANTENNA, 900MHZ (890-960MHZ) 3DB ROOF TOP, 22' CABLE	RAF4003ARM	554	$39.50
ADD: NO ANTENNA NEEDED	G89	500	$0.00

Cable (s)

Description	Nomenclature	APC	Price
POWER CABLE, 10 FT. (LOW/MID POWER) 30 & 35 WATT	HKN4191	412	$18.00

Control Station

Description	Nomenclature	APC	Price
CONTROL STATION MOUNT	HLN6925	775	$95.00
PS 14V 10A 117/240 VAC.	HPN4007C	500	$296.00

Customer Programming Software

Emergency

Description	Nomenclature	APC	Price
EMERGENCY FOOT SWITCH	HLN5113	604	$61.75

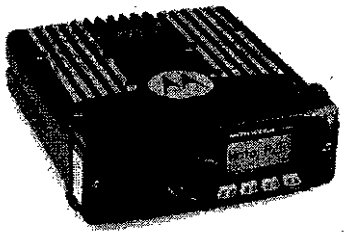
Speakers

Description	Nomenclature	APC	Price
EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	HSN4038	476	$60.50

Microphones

MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	706	$295.00
XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00

Data Compiled 16-May-2013 using DUP and all prices in USD



ASTRO® Digital XTL 1500 Mobile
380 - 470 MHz Band
Secure and Trunked Radio Systems

Ship Card

Features

All XTL 1500 Mobiles are available with the following hardware features:

- 10 Foot Negative Ground Power Cable (3 meters) for Dash Mount
- Ignition Sense Cable
- Palm Microphone
- Internal Speaker (Standard)
- Mounting Hardware

All XTL 1500 radios are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades.

General Information

XTL 1500 Catalog Sheet

XTL 1500 UHF Range 1 Ordering Guide

The XTL 1500 Mobile Line offers 1 radio hardware model:

Hardware Mode	Modes	Alphanumeric Display
		Lines/Characters
		per Line
CH	48	1/8

OPERATING MODES

XTL 1500 Radio Models are capable of operating in four different voice communication modes:

- 3600 Analog Trunking
- 3.6KB ASTRO Digital (both clear and coded voice)
- 9.6KB ASTRO Digital (both clear and coded voice)
- Digital Conventional

The mode of operation is programmed on a channel-by-channel basis. The XTL 1500 is capable of transmitting clear analog voice or clear (unencrypted) ASTRO digital voice, depending on the channel programming. XTL 1500 radio functions include ASTRO Digital signaling and digital coding.

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the XTL 1500 Mobile Radio Series. Separation of frequencies can be as wide as the allowable sub-band per radio model with no degradation of any performance specifications. **If an incorrect antenna is used, degraded performance may be experienced.**

COMMON AIR INTERFACE

Conventional channels are P25 compliant with the ASTRO Digital CAI Operation Software. ASTRO P25 Trunking Software **must** be ordered for P25 compliance in trunked systems.

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on APX 7000 Dual Display Portable radios. Advanced Messaging is NOT supported on APX 7000 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for APX Mobiles Require: (Note: some control heads are not available on all main models)

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- P25 Conventional (G48)
- Packet Data Interface (W947)

OR

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking Software (G361)
- Packet Data Interface (W947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

Ordering Requirements

The XTL 1500 Digital Mobile Radio has been set up to simplify ordering of hardware and software for customers.

- The main model number consists of: the mobile transceiver or "brick" for the frequency band and power level, control head hardware, control head software, dash mount capability, mounting hardware, power cable, ignition sense cable, and microphone.
- The XTL 1500 radio also includes an internal speaker.

- Any additional accessories that are required can be ordered as options.
- A software ***enhanced*** version of each system software package can be ordered as an option if customers require any of the capacity and feature capabilities described below:

  - Enhancements to a **DIGITAL** system will include: 512 channels, ADP (G193), Data Capability (W947), 16 trunked systems, 16 trunked personalities, 20 call lists, 25 call list members, and 20 scan lists.

    OR

  - Enhancements to an **ANALOG** system include: 512 channels, 16 trunked systems, 16 trunked personalities, 20 call lists, 25 call list members, and 20 scan lists. Note: This enhancement package does NOT include ADP (G193) or Data (W947) capability.

Ordering Sequence
Order Example:

1	M28QSS9PW1AN	XTL 1500 Mobile
1A	GXXX	System Software Package
1B	GXXX	Standard Antenna
1C	Etc.	Other Options
1D	G798, G91	Control Station

- **1 Main Line Item**
  - **Order** the XTL 1500 model number.

- **1A Sub-Items**
  - **Order** the **System Software Package**
    - Select 1 system software package (Standard - G788, G789, G790, G809).
    - If additional capacity or feature capabilities are desired, order software enhanced system software package (Software Enhanced – G964, G965, G966, G967).
    - Refer to the matrices below for specific features available with each package (option).

- **1B Accessories**

  - **Order** one (1) Antennas (G425, G426, G427, G428) or No Antenna Needed (G89).

- **1C Etc.**

  - If additional speaker is required, **order** external speaker (B18).

- **1D Control Station**

  - If control station operation is required, **order** Control Station Base Mount (G798) and Power Supply with power cable (G91).
  - No external speaker should be ordered for control station operation as the mobile includes an internal speaker as standard.

Each hardware model must be ordered with 1 of the System Software Package options listed below. Please refer to the list of features and capabilities that corresponds to the system type to be ordered.

COMMON SOFTWARE FEATURES SUPPORTED BY				
"SmartZons® System Packages"				

	"3600 Analog Trunking"	"3.6KB ASTRO Digital"	"9.6KB ASTRO Digital"	"Digital Conventional"
	G809	**G789**	**G788**	**G790**
			Project 25	Project 25
RADIO WIDE FEATURES				
48 Modes / Channels	Yes	Yes	Yes	Yes
Analog or Digital Operation	No	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable *ADP supported when Software Enhancement Package is ordered (see corresponding matrix below).	No*	No*	No*	No*
One Touch Operation	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified in the APCO Project 25 documents.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed)	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
MDC PTT ID (Encode / Decode)	Encode	Yes	Yes	Yes
MDC Selective Radio Inhibit (Decode)	Yes	Yes	Yes	Yes
MDC Call Alert (Encode / Decode)	Yes	Yes	Yes	Yes
MDC Radio Check (Decode)	Yes	Yes	Yes	Yes
MDC Voice Selective Call (Encode / Decode)	Yes	Yes	Yes	Yes
MDC Remote Monitor	N/A	N/A	N/A	Yes
MDC Call Lists (Call Alert / Selective Call)	Yes	Yes	Yes	Yes
MDC Emergency Call (Encode / Decode)	Yes	Yes	Yes	Yes
MDC Emergency PTT ID (Encode)	Encode	Yes	Yes	Yes
MDC Emergency Alarm (Encode)	Yes	Yes	Yes	Yes
MDC Emergency w/ Voice to Follow	Future R6.8	Future R6.8	Future R6.8	Future R6.8
MDC Select Emergency	Yes	Yes	Yes	Yes
MDC Status (Encode)	Yes	Yes	Yes	Yes
MDC Message (Encode)	Yes	Yes	No	Yes
MDC Silent Emergency (Encdode)	Yes	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Interoperable Features when used in the ASTRO Digital CAI Mode				
Unaddressed Voice Call	No	Yes	Yes	Yes
Talk Group Call	No	Yes	Yes	Yes
Group Call Alert™	No	Yes	Yes	Yes
Talk Group Identification (TGID)	No	Yes	Yes	Yes
Selective Call (Individual Voice Call)	No	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	No	Yes	Yes	Yes
PTT ID (Individual Identification)	No	Yes	Yes	Yes
Call Alert Encode/Decode	No	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	No	Yes	Yes	Yes

Telephone Interconnect Unlimited (Encode / Decode)	No	Yes	Yes	Yes
Unlimited	No	Yes	Yes	Yes
Selective Radio Inhibit	No	Yes	Yes	Yes
Radio Check	No	Yes	Yes	Yes
Status/Message	No	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Smart PTT	No	Yes	Yes	Yes
SmartZone OmniLink	Yes	Yes	Yes	No
Trunking Type II Only Features				
20 Trunked Systems (Maximum)	Yes	Yes	Yes	N/A
Talkgroup Calls	Yes	Yes	Yes	N/A
PTT ID	Yes	Yes	Yes	N/A
Call Alert Encode / Decode	Yes	Yes	Yes	N/A
Dual Mode Scan	Yes	Yes	Yes	N/A
Failsoft by Talkgroup	Yes	Yes	Yes	N/A
Telephone Interconnect Unlimited (Encode / Decode)	Yes	Yes	Yes	N/A
System Wide Call (Receive Only)	Yes	Yes	Yes	N/A
Selective Radio Inhibit	Yes	Yes	Yes	N/A
Priority Monitor Scan	No	No	No	N/A
Dynamic Regrouping	Yes	Yes	Yes	N/A
Status / Message (no DEK)	Yes	Yes	Yes	N/A
Dispatcher Interrupt	No	No	No	N/A
Private / Enhanced Conversation Encode / Decode	Yes	Yes	Yes	N/A
Radio Trace	Yes	Yes	No	N/A
Reprogram Request	Yes	Yes	Yes	N/A
Voice on Control	Future	Future	Future	N/A
SmartZone Automatic Site Registration	Yes	Yes	Yes	N/A
SmartZone RSSI Operation	Yes	Yes	Yes	N/A
SmartZone Busy Override	No	No	No	N/A
SmartZone Preferred Site	Yes	Yes	Yes	N/A
SmartZone Forced Site Search	Yes	Yes	Yes	N/A
SmartZone Site Lock/Unlock	Yes	Yes	Yes	N/A
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	N/A
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	N/A
Hear Clear	Yes	N/A	N/A	N/A

Additional features / capabilities are available by ordering 1 of the "software enhanced" System Software Options (see below). When ordering the software enhanced system software options, customers will get the features / capabilities listed below **in addition to** those specified in the above matrix. Please refer to the feature / capability column that corresponds to the system type ordered.

"ADDITIONAL" FEATURES / CAPABILITIES SUPPORTED WITH SOFTWARE ENHANCEMENT PACKAGE

	"3600 Analog Trunking"	"3.6KB ASTRO Digital"	"9.6KB ASTRO Digital"	"Digital Conventional"
	G967	**G965**	**G964**	**G966**
			Project 25	Project 25
512 Channels	Yes	Yes	Yes	Yes
20 Trunked Systems	Yes	Yes	Yes	No
50 Trunked Personalities	Yes	Yes	Yes	No
Call Lists: 3600 Trunking - 20 lists 9600 Trunking & Digital Conventionet - 10 lists MDC - 50 lists	Yes	Yes	Yes	Yes

Call List Members: 3600 Trunking & 9600 Trunking - 25 call list members Conventional & MDC - 50 call list members Digital	Yes	Yes	Yes	Yes
20 Scan Lists	Yes	Yes	Yes	Yes
ADP (G193) *ADP is only supported on 9600 trunking or on digital conventional channels.	No	Yes*	Yes	Yes
Data (W947)	No	Yes	Yes	Yes

SELF-QUIETING SPURS

16.8 MHz is radio's main Reference Oscillator used by the Patriot IC, ABACUS IC and Urchin IC as the main frequency source. This frequency is generously available from the radio's FGU section, and unfortunately, a low level emission of this frequency is being picked up by the radio's receiver.

Frequency	Source
403.2000	multiple of 16.8 MHz
436.8000	multiple of 16.8 Mhz

FCC Information

Band/Model	Power Output	Transmitter Certification (Type Acceptance)	Emissions	Applicable Rules
380-470 MHz	10 - 40 Watts	AZ492FT4862	8K10F1D, 8K10F1E, 11K0F3E, 16K0F3E, 20K0F1E, 20K0F1D	22, 74, 90

FCC Approval achieved through Class I Permissive Change to Transmitter.

- Except for itinerant and low-power incident channels.

** Itinerant & Low-Power Incident Channels	
Channel Number	Frequency Range (MHz)

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA Ç Canada personnel refer to Section A under CANADA ONLY information.

Models

Description	Nomenclature	APC	Price
XTL 1500 MOBILE 10-40 WATT, 380-470MHZ	M28QSS9PW1 N	726	$1,600.00

Options

System Software Options

Description	Nomenclature	APC	Price
ENH: 9600 DIGITAL BAUD	G788	775	$630.00

ENH: 3600 ASTRO DIGITAL	G789	775	$530.00
ENH: SOFTWARE P25 CONVENTIONAL	G790	775	$130.00
ENH: 3600 ANALOG BAUD	G809	775	$230.00
ADD: XTL1500 RADIO AUTHENTICATION	W391	775	$100.00

Software Enhanced System Software Options

(Do NOT select any of the above system software options IF ordering 1 of the system software options below.)

Description	Nomenclature	APC	Price
9600 ASTRO DIGITAL ENHANCE	G964	775	$830.00
ENH: 3600 ASTRO DIGITAL ENHANCE	G965	775	$730.00
ENH: P25 DIGITAL CONVL ENHANCE	G966	775	$330.00
ENH: ANALOG 3600 BAUD ENHANCED	G967	775	$430.00

System Enhancement Features

Description	Nomenclature	APC	Price
ENH: OVER THE AIR PROVISIONING	G996	726	$100.00
Compatible with P25 Trunking only. Requires W947 (packet data) which comes with ordering an Enhanced Digital System Software option.			
ENH: RADIO TRACE AND REMOTE MONITOR	G170	775	$75.00

Alarm

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAYS AND CABLE	W116	500	$75.00
For either HORN or LIGHTS. NOT both			

Antenna

Description	Nomenclature	APC	Price
ANTENNA 1/4 WAVE WHIP 380-433 MHZ	G425	585	$25.00
Not Compatible with Motorcycle Corresponding kit: HAE6012. **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.**			
ANTENNA 1/4 WAVE WHIP 450-470 MHZ	G426	585	$25.00
Not Compatible with Motorcycle Corresponding kit: HAE4003.			
ANTENNA 3.5DB 450-470MHZ	G428	585	$50.00
Not Compatible with Motorcycle Corresponding kit: HAE4011.			
ANTENNA WIDEBAND 380-470 MHZ	G431	585	$58.00
Not Compatible with Motorcycle Corresponding kit: HAE6013.			
ADD: NO ANTENNA NEEDED	G89	500	$0.00

Control Station Operation

Description	Nomenclature	APC	Price
ADD: CONTROL STATION POWER SUPPLY	G91	500	$269.00
Corresponding kit: HPN4007			
ADD: CONTROL STATION MOUNT	G798	775	$70.00

Emergency

Description	Nomenclature	APC	Price
ADD: EXTERNAL EMERGENCY FOOTSWITCH	W470	500	$56.00
Corresponding kit: HLN5113.			
ADD: EXT EMERGENCY PUSHBUTTON	W688	500	$56.00
Corresponding kit: HLN5131			

Microphones

Description	Nomenclature	APC	Price
ALT: CONTROL STATION MICROPHONE Dash Mount Required *Corresponding Kit: RMN5070*	W382	500	$169.00
ADD: HANDSET/HANGUP GCAI Coiled Cable with Toggle Switch Accessory Kit: HLN1457A	G874	514	$285.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079	W20	514	$180.00

Service Options (These Service options are NOT applicable for Asia Pac)

REPAIR SERVICE ADVANTAGE
Provides for extended hardware repair coverage beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
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ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 3 YR CANADA EXTND WRNTY XTL	GA00313	386	$177.00
ENH: 5 YR CANADA EXTND WRNTY XTL	GA00316	386	$240.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$246.00

REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00

Speakers

Description	Nomenclature	APC	Price
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$60.00

Miscellaneous

Description	Nomenclature	APC	Price
ADD: KEY LOCK MOUNT	W81	500	$33.00

Accessories

Antenna

Description	Nomenclature	APC	Price
ANTENNA, UHF (450-470 MHZ) 1/4 WAVE ROOF MOUNT	HAE4003	554	$21.50

Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: Unity, VSWR: Less than 2:1, Impedance: 50 Ohms, nominal			
ANTENNA UHF (445-470 MHZ) 3.5DB GAIN ROOF MOUNT	HAE4011	554	$77.50
Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedance: 50 Ohms, nominal.			
ANTENNA UHF (380-433 MHZ) 3.5DB GAIN	HAE6010	476	$63.00
ANTENNA UHF (380-433 MHZ) 5DB GAIN	HAE6011	585	$63.00
ANTENNA 1/4 WAVE WHIP 380-433 MHZ	HAE6012	585	$23.00
ANTENNA WIDEBAND 2.0DB GAIN 380-470 MHZ	HAE6013	585	$55.00
ANTENNA UHF (445-470 MHZ) 5DB GAIN	RAE4014ARB	554	$110.00
Roof Mount, SPECTRUM Base Loaded 5 dB Gain Antenna, Cable: RG58 A/U, Rugged Duty, Mini UHF connector.			

Cable (s)

Description	Nomenclature	APC	Price
POWER CABLE, 10 FT. (LOW/MID POWER) 30 & 35 WATT	HKN4191	412	$18.00

Control Station

Description	Nomenclature	APC	Price
CONTROL STATION MOUNT	HLN6925	775	$95.00
PS 14V 10A 117/240 VAC.	HPN4007C	500	$296.00

Customer Programming Software

Emergency

Description	Nomenclature	APC	Price
EMERGENCY FOOT SWITCH	HLN5113	604	$61.75

Speakers

Description	Nomenclature	APC	Price
EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	HSN4038	476	$60.50

Microphones

MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	706	$295.00
XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00

Vehicle Location Solution

Vehicle Location Solution

Vehicle location or GPS is now available on the ASTRO 25 XTL 1500 mobile radio.

The TrimFleet ™ GPS mobile units provide a versatile and economical platform for mobile positioning applications. Using state-of-the-art GPS receiver technology, the TrimFleet GPS receiver unit has been optimized for vehicle installation and operation, providing reliable vehicle position, direction, speed, time and status in any weather, anywhere in the world.

The TrimFleet receiver contains a 12-channel GPS module and an (optional) angular rate sensor module. The TrimFleet receiver connects directly to in-vehicle laptops/workstations as well as VRM and XTL radios. The TrimFleet GPS receiver outputs positions when in GPS coverage via either of its RS-232C serial ports in National Marine Electronics Association Protocol (NMEA), Trimble ASCII Interface Protocol (TAIP) and Point to Point Protocol (PPP) formats. The TrimFleet receiver may be configured to send the position data in either protocol via the two RS-232C data ports. Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

The TrimFleet DRU Plus may be equipped with an optional internal module to provide dead reckoned position data while outside of GPS coverage. This is accomplished through the use of advanced gyroscopic technology in combination with connections to the vehicle speed sensor

and vehicle direction signal (forward or reverse.) Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

I/O PORTS

The TrimFleet DRU Plus provides two RS232C compatible communication ports that may be connected to external devices. One port provides a DE-9 female DCE connection, and the other port provides a DE-9 female DTE connection. The ports may be configured individually for baud rates between 110 and 115.2K baud. Both ports support NMEA and TAIP protocols. The default configuration for both ports is 9600 baud TAIP.

Also provided is support for PPP over RS232C on Port 1. An IP capable XTL 1500 radio may be interfaced to the port to allow wireless transmission of TAIP messages to an AVL server. The TAIP messages will be encapsulated in UDP packets and sent to a configurable destination IP address and port. TAIP messages may also be sent back to the TrimFleet DRU Plus by the AVL application to modify reporting rates and query current location or status.

Vehicle location is available only on ASTRO Conventional and Trunked IV&D Systems. Subscribers must have version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software.

Digital Conventional Ordering requirements for XTL 1500 Mobile:

- ASTRO Digital CAI Operation (G966)
- Mid Power RS232 Cable (HKN6160A)(Hooks to the J2 rectangular connector)

P25 Trunking Ordering requirements for XTL 1500 Mobile:

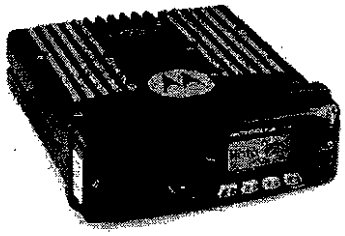
- ASTRO Project 25 Trunking 9600 Software (G964)
- Mid Power RS232 Cable (HKN6160A)(Hooks to the J2 rectangular connector)

Description	Nomenclature	APC	Price
TRIMFLEET DRU PLUS (W/DR & POWER CABLE)	DDN9439	222	$745.00

Description	Nomenclature	APC	Price
TRIMFLEET APU (W/POWER CABLE)	DDN9440	222	$620.00

Description	Nomenclature	APC	Price
TRIMFLEET GPS ANTENNA WITH CABLE	DDN9474	222	$99.00

Data Compiled 16-May-2013 using OUP and all prices in USD



ASTRO® Digital XTL 1500 Mobile
450 - 520 MHz Band
Secure and Trunked Radio Systems

Ship Card

Features

All XTL 1500 Mobiles are available with the following hardware features:

- 10 Foot Negative Ground Power Cable (3 meters) for Dash Mount
- Ignition Sense Cable
- Palm Microphone
- Internal Speaker (Standard)
- Mounting Hardware

All XTL 1500 radios are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades.

General Information

XTL 1500 Catalog Sheet

XTL 1500 UHF Range 2 Ordering Guide

The XTL 1500 Mobile Line offers 1 radio hardware model:

Hardware Mode	Modes	Alphanumeric Display
		Lines/Characters
		per Line
CH	48	1/8

OPERATING MODES

XTL 1500 Radio Models are capable of operating in four different voice communication modes:

- 3600 Analog Trunking
- 3.6KB ASTRO Digital (both clear and coded voice)
- 9.6KB ASTRO Digital (both clear and coded voice)
- Digital Conventional

The mode of operation is programmed on a channel-by-channel basis. The XTL 1500 is capable of transmitting clear analog voice or clear (unencrypted) ASTRO digital voice, depending on the channel programming. XTL 1500 radio functions include ASTRO Digital signaling and digital coding.

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adherad to on the XTL 1500 Mobile Radio Series. Separation of frequencies can be as wide as the allowable sub-band per radio model with no degradation of any performance specifications. **If an incorrect antenna is used, degraded performance may be experienced.**

COMMON AIR INTERFACE

Conventional channels are P25 compliant with the ASTRO Digital CAI Operation Software. ASTRO P25 Trunking Software **must** be ordered for P25 compliance in trunked systems.

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on APX 7000 Dual Display Portable radios. Advanced Messaging is NOT supported on APX 7000 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for APX Mobiles Raquire: (Note: some control heads are not available on all main models)

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- P25 Conventional (G48)
- Packet Data Interface (W947)

OR

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking Software (G361)
- Packet Data Interface (W947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

Ordering Requirements

The XTL 1500 Digital Mobile Radio has been set up to simplify ordering of hardware and software for customers.

- The main model number consists of: the mobile trensceiver or "brick" for the frequency band and power level, control head hardware, control head software, dash mount capability, mounting hardwere, power cable, ignition sense cable, and microphone.
- The XTL 1500 radio also includes an internal speaker.

- Any additional accessories that are required can be ordered as options.
- A software ***enhanced*** version of each system software package can be ordered as an option if customers require any of the capacity and feature capabilities described below:

  - Enhancements to a **DIGITAL** system will include: 512 channels, ADP (G193), Data Capability (W947), 16 trunked systems, 16 trunked personalities, 20 call lists, 25 call list members, and 20 scan lists.

    OR

  - Enhancements to an **ANALOG** system include: 512 channels, 16 trunked systems, 16 trunked personalities, 20 call lists, 25 call list members, and 20 scan lists. Note: This enhancement package does NOT include ADP (G193) or Data (W947) capability.

Ordering Sequence
Order Example:

1	M28SSS9PW1AN	XTL 1500 Mobile
1A	GXXX	System Software Package
1B	GXXX	Standard Antenna
1C	Etc.	Other Options
1D	G798, G91	Control Station

- **1 Main Line Item**
  - **Order** the XTL 1500 model number.

- **1A Sub-Items**
  - **Order** the **System Software Package**
    - Select 1 system software package (Standard - G788, G789, G790, G809).
    - If additional capacity or feature capabilities are desired, order software enhanced system software package (Software Enhanced – G964, G965, G966, G967).
    - Refer to the matrices below for specific features available with each package (option).

- **1B Accessories**

  - **Order** one (1) Antennas (G426, G428, G430, G486, G490, G493, G494) or No Antenna Needed (G89).

- **1C Etc.**

  - If additional speaker is required, **order** external speaker (B18).

- **1D Control Station**

  - If control station operation is required, **order** Control Station Base Mount (G798) and Power Supply with power cable (G91).
  - No external speaker should be ordered for control station operation as the mobile includes an internal speaker as standard.

Each hardware model must be ordered with 1 of the System Software Package options listed below. Please refer to the list of features and capabilities that corresponds to the system type to be ordered.

COMMON SOFTWARE FEATURES SUPPORTED BY	

"SmartZone® System Packages"				
	"3600 Analog Trunking"	"3.6KB ASTRO Digital"	"9.6KB ASTRO Digital"	"Digital Conventional"
	G809	G789	G788	G790
			Project 25	Project 25
RADIO WIDE FEATURES				
48 Modes / Channels	Yes	Yes	Yes	Yes
Analog or Digital Operation	No	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable *ADP supported when Software Enhancement Package is ordered (see corresponding matrix below).	No*	No*	No*	No*
One Touch Operation	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified in the APCO Project 25 documents.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed)	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
MDC PTT ID (Encode / Decode)	Encode	Yes	Yes	Yes
MDC Selective Radio Inhibit (Decode)	Yes	Yes	Yes	Yes
MDC Call Alert (Encode / Decode)	Yes	Yes	Yes	Yes
MDC Radio Check (Decode)	Yes	Yes	Yes	Yes
MDC Voice Selective Call (Encode / Decode)	Yes	Yes	Yes	Yes
MDC Remote Monitor	N/A	N/A	N/A	Yes
MDC Call Lists (Call Alert / Selective Call)	Yes	Yes	Yes	Yes
MDC Emergency Call (Encode / Decode)	Yes	Yes	Yes	Yes
MDC Emergency PTT ID (Encode)	Encode	Yes	Yes	Yes
MDC Emergency Alarm (Encode)	Yes	Yes	Yes	Yes
MDC Emergency w/ Voice to Follow	Future R6.8	Future R6.8	Future R6.8	Future R6.8
MDC Select Emergency	Yes	Yes	Yes	Yes
MDC Status (Encode)	Yes	Yes	Yes	Yes
MDC Message (Encode)	Yes	Yes	No	Yes
MDC Silent Emergency (Encdode)	Yes	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Interoperable Features when used in the ASTRO Digital CAI Mode				
Unaddressed Voice Call	No	Yes	Yes	Yes
Talk Group Call	No	Yes	Yes	Yes
Group Call Alert™	No	Yes	Yes	Yes
Talk Group Identification (TGID)	No	Yes	Yes	Yes
Selective Call (Individual Voice Call)	No	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	No	Yes	Yes	Yes
PTT ID (Individual Identification)	No	Yes	Yes	Yes
Call Alert Encode/Decode	No	Yes	Yes	Yes

Emergency Alarm w/Channel Revert & Ack.	No	Yes	Yes	Yes
Telephone Interconnect Unlimited (Encode / Decode)	No	Yes	Yes	Yes
Unlimited	No	Yes	Yes	Yes
Selective Radio Inhibit	No	Yes	Yes	Yes
Radio Check	No	Yes	Yes	Yes
Status/Message	No	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Smart PTT	No	Yes	Yes	Yes
SmartZone OmniLink	Yes	Yes	Yes	No
Trunking Type II Only Features				
20 Trunked Systems (Maximum)	Yes	Yes	Yes	N/A
Talkgroup Calls	Yes	Yes	Yes	N/A
PTT ID	Yes	Yes	Yes	N/A
Call Alert Encode / Decode	Yes	Yes	Yes	N/A
Dual Mode Scan	Yes	Yes	Yes	N/A
Failsoft by Talkgroup	Yes	Yes	Yes	N/A
Telephone Interconnect Unlimited (Encode / Decode)	Yes	Yes	Yes	N/A
System Wide Call (Receive Only)	Yes	Yes	Yes	N/A
Selective Radio Inhibit	Yes	Yes	Yes	N/A
Priority Monitor Scan	No	No	No	N/A
Dynamic Regrouping	Yes	Yes	Yes	N/A
Status / Message (no DEK)	Yes	Yes	Yes	N/A
Dispatcher Interrupt	No	No	No	N/A
Private / Enhanced Conversation Encode / Decode	Yes	Yes	Yes	N/A
Radio Trace	Yes	Yes	No	N/A
Reprogram Request	Yes	Yes	Yes	N/A
Voice on Control	Future	Future	Future	N/A
SmartZone Automatic Site Registration	Yes	Yes	Yes	N/A
SmartZone RSSI Operation	Yes	Yes	Yes	N/A
SmartZone Busy Override	No	No	No	N/A
SmartZone Preferred Site	Yes	Yes	Yes	N/A
SmartZone Forced Site Search	Yes	Yes	Yes	N/A
SmartZone Site Lock/Unlock	Yes	Yes	Yes	N/A
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	N/A
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	N/A
Hear Clear	Yes	N/A	N/A	N/A

Additional features / capabilities are available by ordering 1 of the "software enhanced" System Software Options (see below). When ordering the software enhanced system software options, customers will get the features / capabilities listed below **in addition to** those specified in the above matrix. Please refer to the feature / capability column that corresponds to the system type ordered.

"ADDITIONAL" FEATURES / CAPABILITIES SUPPORTED WITH SOFTWARE ENHANCEMENT PACKAGE

	"3600 Analog Trunking"	"3.6KB ASTRO Digital"	"9.6KB ASTRO Digital"	"Digital Conventional"
	G967	**G965**	**G964**	**G966**
			Project 25	Project 25
512 Channels	Yes	Yes	Yes	Yes
20 Trunked Systems	Yes	Yes	Yes	No
50 Trunked Personalities	Yes	Yes	Yes	No
Call Lists:	Yes	Yes	Yes	Yes

3600 Trunking - 20 lists Trunking & Digital Conventional - 10 lists	9600 MDC - 50 lists				
Call List Members: 3600 Trunking & 9600 Trunking - 25 call list members Conventional & MDC - 50 call list members	Digital	Yes	Yes	Yes	Yes
20 Scan Lists		Yes	Yes	Yes	Yes
ADP (G193) *ADP is only supported on 9600 trunking or on digital conventional channels.		No	Yes*	Yes	Yes
Data (W947)		No	Yes	Yes	Yes

FCC Information

Band/Model	Power Output	Transmitter Certification (Type Acceptance)	Emissions	Applicable Rules
450-520 MHz	10 - 45 Watts	AZ492FT4867	8K10F1D, 8K10F1E, 11K0F3E, 16K0F3E, 20K0F1E, 20K0F1D	22, 74, 90

FCC Approval achieved through Class I Permissive Change to Transmitter.

- Except for Itinerant and low-power incident channels.

** Itinerant & Low-Power Incident Channels	
Channel Number	Frequency Range (MHz)

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA Ç Canada personnel refer to Section A under CANADA ONLY information.

Models

Description	Nomenclature	APC	Price
XTL 1500 MOBILE 10-45 WATT, 450-520MHZ	M28SSS9PW1 N	726	$1,600.00

Options

System Software Options

Description	Nomenclature	APC	Price
ENH: 9600 DIGITAL BAUD	G788	775	$630.00
ENH: 3600 ASTRO DIGITAL	G789	775	$530.00
ENH: SOFTWARE P25 CONVENTIONAL	G790	775	$130.00
ENH: 3600 ANALOG BAUD	G809	775	$230.00
ADD: XTL1500 RADIO AUTHENTICATION	W391	775	$100.00

Software Enhanced System Software Options

(Do NOT select any of the above system software options IF ordering 1 of the system software options below.)

Description	Nomenclature	APC	Price
9600 ASTRO DIGITAL ENHANCE	G964	775	$830.00
ENH: 3600 ASTRO DIGITAL ENHANCE	G965	775	$730.00
ENH: P25 DIGITAL CONVL ENHANCE	G966	775	$330.00
ENH: ANALOG 3600 BAUD ENHANCED	G967	775	$430.00

System Enhancement Features

Description	Nomenclature	APC	Price
ENH: OVER THE AIR PROVISIONING	G996	726	$100.00
Compatible with P25 Trunking only. Requires W847 (packet data) which comes with ordering an Enhanced Digital System Software option.			
ENH: RADIO TRACE AND REMOTE MONITOR	G170	775	$75.00

Alarm

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAYS AND CABLE	W116	500	$75.00
For either HORN or LIGHTS. NOT both			

Antenna

Description	Nomenclature	APC	Price
ANTENNA 1/4 WAVE WHIP 450-470 MHZ	G426	585	$25.00
Not Compatible with Motorcycle Corresponding kit: HAE4003.			
ANTENNA 3.5DB 450-470MHZ	G428	585	$50.00
Not Compatible with Motorcycle Corresponding kit: HAE4011.			
ADD: ADD: ANT 1/4 WAVE 470-512 MHZ	G490	585	$14.00
Not Compatible with Motorcycle Corresponding kit: HAE4004.			
ADD: ANTENNA 3 DB ROOF TOP 470-495	G493	585	$33.00
Not Compatible with Motorcycle Corresponding kit: HAE4012.			
ADD: ANTENNA 3 DB ROOF TOP 494-512 MHZ	G494	585	$33.00
Not Compatible with Motorcycle Corresponding kit: HAE4013.			
ADD: NO ANTENNA NEEDED	G89	500	$0.00

Control Station Operation

Description	Nomenclature	APC	Price
ADD: CONTROL STATION POWER SUPPLY	G91	500	$269.00
Corresponding kit: HPN4007			
ADD: CONTROL STATION MOUNT	G798	775	$70.00

Emergency

Description	Nomenclature	APC	Price
ADD: EXTERNAL EMERGENCY FOOTSWITCH	W470	500	$56.00
Corresponding kit: HLN5113.			
ADD: EXT EMERGENCY PUSHBUTTON	W688	500	$56.00
Corresponding kit: HLN5131			

Microphones

Description	Nomenclature	APC	Price
ALT: CONTROL STATION MICROPHONE	W382	500	$169.00
Dash Mount Required Corresponding Kit: RMN5070			
ADD: KEYPAD MIC (GCAI)	W20	514	$180.00

Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500.
Remote Monitor feature requires G170 software option.
Required for Emergency Hot Mic Operation.
Corresponding kit: HMN4079

Service Options (These Service options are NOT applicable for Asia Pac)

REPAIR SERVICE ADVANTAGE
Provides for extended hardware repair coverage beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$64.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 3 YR CANADA EXTND WRNTY XTL	GA00313	386	$177.00
ENH: 5 YR CANADA EXTND WRNTY XTL	GA00316	386	$240.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$246.00

REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00

Speakers

Description	Nomenclature	APC	Price
ADD: AUXILARY SPKR SPECTRA 7.5 WATT	B18	500	$60.00
Corresponding kit: HSN4031.			

Miscellaneous

Description	Nomenclature	APC	Price
ADD: KEY LOCK MOUNT	W81	500	$33.00

Accessories

Antenna

Description	Nomenclature	APC	Price
ANTENNA, UHF (450-470 MHZ) 1/4 WAVE ROOF MOUNT	HAE4003	554	$21.50
Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: Unity, VSWR: Less than 2:1, Impedance: 50 Ohms, nominal			
ANTENNA UHF (445-470 MHZ) 3.5DB GAIN ROOF MOUNT	HAE4011	554	$77.50
Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedance: 50 Ohms, nominal.			
ANTENNA, UHF (470-512 MHZ) 1/4 WAVE ROOF MOUNT	HAE4004	554	$20.00
Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: Unity, VSWR: Less than 2:1, Impedance: 50 Ohms, nominal			
ANTENNA, UHF (470-494 MHZ) 3.5DB GAIN ROOF TOP	HAE4012	554	$68.00
Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedance: 50 Ohms, nominal.			
ANTENNA, UHF (494-512 MHZ) 3.5DB GAIN ROOF TOP	HAE4013	554	$72.00
Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedance: 50 Ohms, nominal.			

ANTENNA UHF (445-470 MHZ) 5DB GAIN Roof Mount, SPECTRUM Base Loaded 5 dB Gain Antenna, Cable: RG58 A/U, Rugged Duty, Mini UHF connector.	RAE4014ARB	554	$110.00
ANTENNA UHF 1/4 WAVE	RAE4024ARB	554	$100.00
ANTENNA UHF (494-512 MHZ) 5DB GAIN Roof Mount, SPECTRUM Base Loaded 5 dB Gain Antenna, RG58 A/U Cable, Rugged Duty, Mini UHF connector	RAE4016ARB	554	$144.00

Cable (s)

Description	Nomenclature	APC	Price
POWER CABLE, 10 FT. (LOW/MID POWER) 30 & 35 WATT	HKN4191	412	$18.00

Control Station

Description	Nomsnclature	APC	Price
CONTROL STATION MOUNT	HLN6925	775	$95.00
PS 14V 10A 117/240 VAC.	HPN4007C	500	$296.00

Customer Programming Software

Emergency

Description	Nomenclature	APC	Price
EMERGENCY FOOT SWITCH	HLN5113	604	$61.75

Speakers

Description	Nomenclature	APC	Price
EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	HSN4038	476	$60.50

Microphones

MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	706	$295.00
XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00

Vehicle Location Solution

Vehicle Location Solution

Vehicle location or GPS is now available on the ASTRO 25 XTL 1500 mobile radio.

The TrimFleet ™ GPS mobile units provide a versatile and economical platform for mobile positioning applications. Using state-of-the-art GPS receiver technology, the TrimFleet GPS receiver unit has been optimized for vehicle installation and operation, providing reliable vehicle position, direction, speed, time and status in any weather, anywhere in the world.

The TrimFleet receiver contains a 12-channel GPS module and an (optional) angular rate sensor module. The TrimFleet receiver connects directly to in-vehicle laptops/workstations as well as VRM and XTL radios. The TrimFleet GPS receiver outputs positions when

in GPS coverage via either of its RS-232C serial ports in National Marine Electronics Association Protocol (NMEA), Trimble ASCII Interface Protocol (TAIP) and Point to Point Protocol (PPP) formats. The TrimFleet receiver may be configured to send the position data in either protocol via the two RS-232C data ports. Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleat receiver will automatically self-calibrate.

The TrimFleet DRU Plus may be equipped with an optional internal module to provide dead reckoned position data while outside of GPS coverage. This is accomplished through the use of advanced gyroscopic technology in combination with connections to the vehicle speed sensor

and vehicle direction signal (forward or reverse.) Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

I/O PORTS

The TrimFleet DRU Plus provides two RS232C compatible communication ports that may be connected to external devices. One port provides a DE-9 female DCE connection, and the other port provides a DE-9 female DTE connection. The ports may be configured individually for baud rates between 110 and 115.2K baud. Both ports support NMEA and TAIP protocols. The default configuration for both ports is 9600 baud TAIP.

Also provided is support for PPP over RS232C on Port 1. An IP capable XTL 1500 radio may be interfaced to the port to allow wireless transmission of TAIP messages to an AVL server. The TAIP messages will be encapsulated in UDP packets and sent to a configurable destination IP address and port. TAIP messages may also be sent back to the TrimFleet DRU Plus by the AVL application to modify reporting rates and query current location or status.

Vehicle location is available only on ASTRO Conventional and Trunked IV&D Systems. Subscribers must have version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software.

Digital Conventional Ordering requirements for XTL 1500 Mobile:

- ASTRO Digital CAI Operation (G966)
- Mid Power RS232 Cable (HKN6160A)(Hooks to the J2 rectangular connector)

P25 Trunking Ordering requirements for XTL 1500 Mobile:

- ASTRO Project 25 Trunking 9600 Software (G964)
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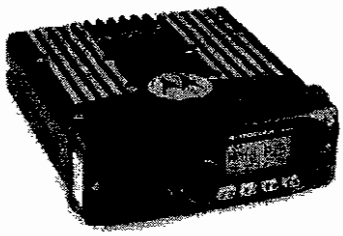
Data Compiled 16-May-2013 using OUP and all prices in USD



ASTRO® Digital XTL 1500 Mobile
136 - 174 MHz Band
Secure and Trunked Radio Systems

Ship Card

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ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on APX 7000 Dual Display Portable radios. Advanced Messaging *is* NOT supported on APX 7000 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for APX Mobiles Require: (Note: some control heads are not available on all main models)

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- P25 Conventional (G48)
- Packet Data Interface (W947)

OR

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking Software (G361)
- Packet Data Interface (W947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

Ordering Requirements

The XTL 1500 Digital Mobile Radio has been set up to simplify ordering of hardware and software for customers.

- The main model number consists of: the mobile transceiver or "brick" for the frequency band and power level, control head hardware, control head software, dash mount capability, mounting hardware, power cable, ignition sense cable, and microphone.
- The XTL 1500 radio also includes an internal speaker.

- Any additional accessories that are required can be ordered as options.
- A software ***enhanced*** version of each system software package can be ordered as an option if customers require any of the capacity and feature capabilities described below:

  - Enhancements to a **DIGITAL** system will include: 512 channels, ADP (G193), Data Capability (W947), 16 trunked systems, 16 trunked personalities, 20 call lists, 25 call list members, and 20 scan lists.

    OR

  - Enhancements to an **ANALOG** system include: 512 channels, 16 trunked systems, 16 trunked personalities, 20 call lists, 25 call list members, and 20 scan lists. Note: This enhancement package does NOT include ADP (G193) or Data (W947) capability.

Ordering Sequence
Order Example:

1	M28KSS9PW1AN	XTL 1500 Mobile
1A	GXXX	System Software Package
1B	GXXX	Standard Antenna
1C	Etc.	Other Options
1D	G798, G91	Control Station

- **1 Main Line Item**
  - **Order** the XTL 1500 model number.

- **1A Sub-Items**
  - **Order** the **System Software Package**
    - Select 1 system software package (Standard - G788, G789, G790, G809).
    - If additional capacity or feature capabilities are desired, order software enhanced system software package (Software Enhanced – G964, G965, G966, G967).
    - Refer to the matrices below for specific features available with each package (option).

- **1B Accessories**

  - **Order** one (1) Antennas (G296, G297, G299, G300) or No Antenna Needed (G89).

- **1C Etc.**

  - If additional speaker is required, **order** external speaker (B18).

- **1D Control Station**

  - If control station operation is required, **order** Control Station Base Mount (G798) and Power Supply with power cable (G91).
  - No external speaker should be ordered for control station operation as the mobile includes an internal speaker as standard.

Each hardware model must be ordered with 1 of the System Software Package options listed bslow. Please refer to the list of features and capabilities that corresponds to the system type to be ordered.

COMMON SOFTWARE FEATURES SUPPORTED BY				
"SmartZone® System Packages"				

	"3600 Analog Trunking"	"3.6KB ASTRO Digital"	"9.6KB ASTRO Digital"	"Digital Conventional"
	G809	**G789**	**G788**	**G790**
			Project 25	Project 25
RADIO WIDE FEATURES				
48 Modes / Channels	Yes	Yes	Yes	Yes
Analog or Digital Operation	No	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable *ADP supported when Software Enhancement Package is ordered (see corresponding matrix below).	No*	No*	No*	No*
One Touch Operation	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified in the APCO Project 25 documents.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed)	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
MDC PTT ID (Encode / Decode)	Encode	Yes	Yes	Yes
MDC Selective Radio Inhibit (Decode)	Yes	Yes	Yes	Yes
MDC Call Alert (Encode / Decode)	Yes	Yes	Yes	Yes
MDC Radio Check (Decode)	Yes	Yes	Yes	Yes
MDC Voice Selective Call (Encode / Decode)	Yes	Yes	Yes	Yes
MDC Remote Monitor	N/A	N/A	N/A	Yes
MDC Call Lists (Call Alert / Selective Call)	Yes	Yes	Yes	Yes
MDC Emergency Call (Encode / Decode)	Yes	Yes	Yes	Yes
MDC Emergency PTT ID (Encode)	Encode	Yes	Yes	Yes
MDC Emergency Alarm (Encode)	Yes	Yes	Yes	Yes
MDC Emergency w/ Voice to Follow	Future R6.8	Future R6.8	Future R6.8	Future R6.8
MDC Select Emergency	Yes	Yes	Yes	Yes
MDC Status (Encode)	Yes	Yes	Yes	Yes
MDC Message (Encode)	Yes	Yes	No	Yes
MDC Silent Emergency (Encdode)	Yes	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Interoperable Features when used in the ASTRO Digital CAI Mode				
Unaddressed Voice Call	No	Yes	Yes	Yes
Talk Group Call	No	Yes	Yes	Yes
Group Call Alert™	No	Yes	Yes	Yes
Talk Group Identification (TGID)	No	Yes	Yes	Yes
Selective Call (Individual Voice Call)	No	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	No	Yes	Yes	Yes
PTT ID (Individual Identification)	No	Yes	Yes	Yes
Call Alert Encode/Decode	No	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	No	Yes	Yes	Yes

Telephone Interconnect Unlimited (Encode / Decode)	No	Yes	Yes	Yes
Unlimited	No	Yes	Yes	Yes
Selective Radio Inhibit	No	Yes	Yes	Yes
Radio Check	No	Yes	Yes	Yes
Status/Message	No	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Smart PTT	No	Yes	Yes	Yes
SmartZone OmniLink	Yes	Yes	Yes	No
Trunking Type II Only Features				
20 Trunked Systems (Maximum)	Yes	Yes	Yes	N/A
Talkgroup Calls	Yes	Yes	Yes	N/A
PTT ID	Yes	Yes	Yes	N/A
Call Alert Encode / Decode	Yes	Yes	Yes	N/A
Dual Mode Scan	Yes	Yes	Yes	N/A
Failsoft by Talkgroup	Yes	Yes	Yes	N/A
Telephone Interconnect Unlimited (Encode / Decode)	Yes	Yes	Yes	N/A
System Wide Call (Receive Only)	Yes	Yes	Yes	N/A
Selective Radio Inhibit	Yes	Yes	Yes	N/A
Priority Monitor Scan	No	No	No	N/A
Dynamic Regrouping	Yes	Yes	Yes	N/A
Status / Message (no DEK)	Yes	Yes	Yes	N/A
Dispatcher Interrupt	No	No	No	N/A
Private / Enhanced Conversation Encode / Decode	Yes	Yes	Yes	N/A
Radio Trace	Yes	Yes	No	N/A
Reprogram Request	Yes	Yes	Yes	N/A
Voice on Control	Future	Future	Future	N/A
SmartZone Automatic Site Registration	Yes	Yes	Yes	N/A
SmartZone RSSI Operation	Yes	Yes	Yes	N/A
SmartZone Busy Override	No	No	No	N/A
SmartZone Preferred Site	Yes	Yes	Yes	N/A
SmartZone Forced Site Search	Yes	Yes	Yes	N/A
SmartZone Site Lock/Unlock	Yes	Yes	Yes	N/A
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	N/A
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	N/A

Additional features / capabilities are available by ordering 1 of the "software enhanced" System Software Options (see below). When ordering the software enhanced system software options, customers will get the features / capabilities listed below **in addition to** those specified in the above matrix. Please refer to the feature / capability column that corresponds to the system type ordered.

"ADDITIONAL" FEATURES / CAPABILITIES SUPPORTED WITH SOFTWARE ENHANCEMENT PACKAGE

	"3600 Analog Trunking"	"3.6KB ASTRO Digital"	"9.6KB ASTRO Digital"	"Digital Conventional"
	G967	**G965**	**G964**	**G966**
			Project 25	Project 25
512 Channels	Yes	Yes	Yes	Yes
20 Trunked Systems	Yes	Yes	Yes	No
50 Trunked Personalities	Yes	Yes	Yes	No
Call Lists: 3600 Trunking - 20 lists 9600 Trunking & Digital Conventional - 10 lists MDC - 50 lists	Yes	Yes	Yes	Yes

Call List Members: 3600 Trunking & 9600 Trunking - 25 call list members Digital Conventional & MDC - 50 call list members	Yes	Yes	Yes	Yes
20 Scan Lists	Yes	Yes	Yes	Yes
ADP (G193) *ADP is only supported on 9600 trunking or on digital conventional channels.	No	Yes*	Yes	Yes
Data (W947)	No	Yes	Yes	Yes

FCC Information

Band/Model	Power Output	Transmitter Certification (Type Acceptance)	Emissions	Applicable Rules
136 174 MHz	10 - 50 Watts	AZ492FT3806	8K10F1D, 8K10F1E, 11K0F3E, 16K0F3E, 20K0F1E, 20K0F1D	22, 74, 90

FCC Approval achieved through Class I Permissive Change to Transmitter.

- Except for Itinerant and low-power incident channels.

** Itinerant & Low-Power Incident Channels	
Channel Number	Frequency Range (MHz)

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA Ç Canada personnel refer to Section A under CANADA ONLY information.

Models

Description	Nomenclature	APC	Price
XTL 1500 MOBILE 10-50 WATT, 136-174MHZ	M28KSS9PW1 N	726	$1,600.00

Options

System Software Options

Description	Nomenclature	APC	Price
ENH: 9600 DIGITAL BAUD	G788	775	$630.00
ENH: 3600 ASTRO DIGITAL	G789	775	$530.00
ENH: SOFTWARE P25 CONVENTIONAL	G790	775	$130.00
ENH: 3600 ANALOG BAUD	G809	775	$230.00
ADD: XTL1500 RADIO AUTHENTICATION	W391	775	$100.00

Software Enhanced Systsm Software Options

(Do NOT select any of the above system software options IF ordering 1 of the system software options below.)

Description	Nomenclature	APC	Price
9600 ASTRO DIGITAL ENHANCE	G964	775	$830.00
ENH: 3600 ASTRO DIGITAL ENHANCE	G965	775	$730.00
ENH: P25 DIGITAL CONVL ENHANCE	G968	775	$330.00
ENH: ANALOG 3600 BAUD ENHANCED	G967	775	$430.00

System Enhancement Features

Description	Nomenclature	APC	Price
ENH: OVER THE AIR PROVISIONING Compatible with P25 Trunking only. Requires W947 (packet data) which comes with ordering an Enhanced Digital System Software option.	G996	726	$100.00
ENH: RADIO TRACE AND REMOTE MONITOR	G170	775	$75.00

Alarm

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAYS AND CABLE For either HORN or LIGHTS. NOT both	W116	500	$75.00

Antenna

Description	Nomenclature	APC	Price
ANTENNA 1/4 WAVE WHIP ROOF TOP (136-144 MHZ) Corresponding kit: HAD4006 Corresponding Motorcycle kit: RAD4002ARB	G296	585	$13.50
ANTENNA 1/4 WAVE ROFF TOP VHF (144-150.8 MHZ) Corresponding kit: HAD4007 Corresponding Motorcycle kit: RAD4003ARB	G297	585	$13.50
ANTENNA 1/4 WAVE ROOF TOP VHF (150.8-162 MHZ) Corresponding kit: HAD4008 Corresponding Motorcycle kit: RAD4004ARB	G299	585	$19.50
ANTENNA 1/4 WAVE ROOF TOP VHF (162-174 MHZ) Corresponding kit: HAD4009 Corresponding Motorcycle kit: RAD4005ARB	G300	585	$13.50
ANTENNA, VHF (136-174MHZ, 3.4 BANDWIDTH) 3DB ROOF TOP Not Compatible with Motorcycle Corresponding kit: HAD4022A.	G301	585	$58.50
ADD: 1/4 WAVE BROADBAND ANT 146-174 MHZ Not Compatible with Motorcycle Corresponding kit: HAD4017.	G629	585	$64.00
ADD: NO ANTENNA NEEDED	G89	500	$0.00

Control Station Operation

Description	Nomenclature	APC	Price
ADD: CONTROL STATION POWER SUPPLY Corresponding kit: HPN4007	G91	500	$269.00
ADD: CONTROL STATION MOUNT	G798	775	$70.00

Emergency

Description	Nomenclature	APC	Price
ADD: EXTERNAL EMERGENCY FOOTSWITCH Corresponding kit: HLN5113.	W470	500	$56.00
ADD: EXT EMERGENCY PUSHBUTTON Corresponding kit: HLN5131	W688	500	$56.00

Microphones

Description	Nomenclature	APC	Price
ALT: CONTROL STATION MICROPHONE	W382	500	$169.00
Dash Mount Required Corresponding Kit: RMN5070			
ADD: KEYPAD MIC (GCAI)	W20	514	$180.00
Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079			

Service Options (These Service options are NOT applicable for Asia Pac)

REPAIR SERVICE ADVANTAGE
Provides for extended hardware repair coverage beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$64.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 3 YR CANADA EXTND WRNTY XTL	GA00313	386	$177.00
ENH: 5 YR CANADA EXTND WRNTY XTL	GA00316	386	$240.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$246.00

REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)
Provides for extended hardware rapair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00

Speakers

Description	Nomenclature	APC	Price
ADD: AUXILARY SPKR SPECTRA 7.5 WATT	B18	500	$60.00
Corresponding kit: HSN4031.			

Miscellaneous

Description	Nomenclature	APC	Price
ADD: KEY LOCK MOUNT	W81	500	$33.00

Accessories

Antenna

Description	Nomenclature	APC	Price
ANTENNA, VHF (136-144MHZ) 1/4 WAVE ROOF TOP	HAD4006	554	$19.50
High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohms, nominal			
ANTENNA, VHF (144-150.8 MHZ) 1/4 WAVE ROOF TOP	HAD4007	554	$19.50
High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less then 1.5:1, Impedance 50 Ohms, nominal			
ANTENNA, VHF (150.8-162 MHZ) 1/4 WAVE ROOF TOP	HAD4008	554	$19.50

High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohms, nominal ANTENNA, VHF (162-174 MHZ) 1/4 WAVE ROOF TOP	HAD4009	554	$19.50
High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohms, nominal ANTENNA, VHF (136-174 MHZ 3.4 MHZ BANDWITH) 3DB ROOF TOP	RAD4010ARB	554	$82.00
High Band Base Loaded Antenna - Mini UHF connector, Roof Mount, RG58A/u Cable, Rugged Duty, Frequency Range 136-174 MHz., Power: 150 Watts Max., Gain: 3 dB, nominal, VSWR: Less than 1.5:1, Impedance: 50 Ohms, nominal			

Cable (s)

Description	Nomenclature	APC	Price
POWER CABLE, 10 FT. (LOW/MID POWER) 30 & 35 WATT	HKN4191	412	$18.00

Control Station

Description	Nomenclature	APC	Price
CONTROL STATION MOUNT	HLN6925	775	$95.00
PS 14V 10A 117/240 VAC.	HPN4007C	500	$296.00

Customer Programming Software

Emergency

Description	Nomenclature	APC	Price
EMERGENCY FOOT SWITCH	HLN5113	604	$61.75

Speakers

Description	Nomenclature	APC	Price
EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	HSN4038	476	$60.50

Microphones

MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	706	$295.00
XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00

Vehicle Location Solution

Vehicle Location Solution

Vehicle location or GPS is now available on the ASTRO 25 XTL 1500 mobile radio.

The TrimFleet ™ GPS mobile units provide a versatile and economical platform for mobile positioning applications. Using state-of-the-art GPS receiver technology, the TrimFleet GPS receiver unit has been optimized for vehicle installation and operation, providing reliable vehicle position, direction, speed, time and status in any weather, anywhere in the world.

The TrimFleet receiver contains a 12-channel GPS module and an (optional) angular rate sensor module. The TrimFleet receiver connects directly to in-vehicle laptops/workstations as well as VRM and XTL radios. The TrimFleet GPS receiver outputs positions when in GPS coverage via either of its RS-232C serial ports in National Marine Electronics Association Protocol (NMEA), Trimble ASCII Interface Protocol (TAIP) and Point to Point Protocol (PPP) formats. The TrimFleet receiver may be configured to send the position data in either protocol via the two RS-232C data ports. Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

The TrimFleet DRU Plus may be equipped with an optional internal module to provide dead reckoned position data while outside of GPS coverage. This is accomplished through the use of advanced gyroscopic technology in combination with connections to the vehicle speed sensor

and vehicle direction signal (forward or reverse.) Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

I/O PORTS

The TrimFleet DRU Plus provides two RS232C compatible communication ports that may be connected to external devices. One port provides a DE-9 female DCE connection, and the other port provides a DE-9 female DTE connection. The ports may be configured individually for baud rates between 110 and 115.2K baud. Both ports support NMEA and TAIP protocols. The default configuration for both ports is 9600 baud TAIP.

Also provided is support for PPP over RS232C on Port 1. An IP capable XTL 1500 radio may be interfaced to the port to allow wireless transmission of TAIP messages to an AVL server. The TAIP messages will be encapsulated in UDP packets and sent to a configurable destination IP address and port. TAIP messages may also be sent back to the TrimFleet DRU Plus by the AVL application to modify reporting rates and query current location or status.

Vehicle location is available only on ASTRO Conventional and Trunked IV&D Systems. Subscribers must have version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software.

Digital Conventional Ordering requirements for XTL 1500 Mobile:

- ASTRO Digital CAI Operation (G966)
- Mid Power RS232 Cable (HKN6160A)(Hooks to the J2 rectangular connector)

P25 Trunking Ordering requirements for XTL 1500 Mobile:

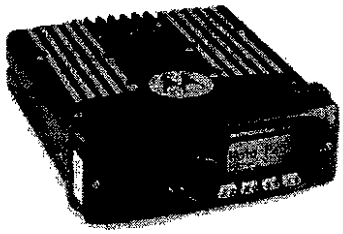
- ASTRO Project 25 Trunking 9600 Software (G984)
- Mid Power RS232 Cable (HKN6160A)(Hooks to the J2 rectangular connector)

Description	Nomenclature	APC	Price
TRIMFLEET DRU PLUS (W/DR & POWER CABLE)	DDN9439	222	$745.00

Description	Nomenclature	APC	Price
TRIMFLEET APU (W/POWER CABLE)	DDN9440	222	$620.00

Description	Nomenclature	APC	Price
TRIMFLEET GPS ANTENNA WITH CABLE	DDN9474	222	$99.00

Data Compiled 16-May-2013 using OUP and all prices in USD



ASTRO® Digital XTL 1500 Mobile 764 - 870 MHz Band Secure and Trunked Radio Systems

Ship Card

Features

All XTL 1500 Mobiles are available with the following hardware features:

- 10 Foot Negative Ground Power Cable (3 meters) for Dash Mount
- Ignition Sense Cable
- Palm Microphone (HMN1090)
- Internal Speaker (Standard)
- Mounting Hardware

All XTL 1500 radios are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades.

General Information

XTL 1500 Catalog Sheet

XTL 1500 7/800MHz Ordering Guide

The XTL 1500 Mobile Line offers 1 radio hardware model:

Hardware Mode	Modes	Alphanumeric Display Lines/Characters per Line
CH	48	1/8

OPERATING MODES

XTL 1500 Radio Models are capable of operating in four different voice communication modes:

- 3600 Analog Trunking
- 3.6KB ASTRO Digital (both clear and coded voice)
- 9.6KB ASTRO Digital (both clear and coded voice)
- Digital Conventional

The mode of operation is programmed on a channel-by-channel basis. The XTL 1500 is capable of transmitting clear analog voice or clear (unencrypted) ASTRO digital voice, depending on the channel programming. XTL 1500 radio functions include ASTRO Digital signaling and digital coding.

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the XTL 1500 Mobile Radio Series. Separation of frequencies can be as wide as the allowable sub-band per radio model with no degradation of any performance specifications. **If an**

incorrect antenna is used, degraded performance may be experienced.

COMMON AIR INTERFACE

Conventional channels are P25 compliant with the ASTRO Digital CAI Operation Software. ASTRO P25 Trunking Software **must** be ordered for P25 compliance in trunked systems.

Ordering Requirements

The XTL 1500 Digital Mobile Radio has been set up to simplify ordering of hardware and software for customers.

- The main model number consists of: the mobile transceiver or "brick" for the frequency band and power level, control head hardware, control head software, dash mount capability, mounting hardware, power cable, ignition sense cable, and microphone.
- The XTL 1500 radio also includes an internal speaker.
- Any additional accessories that are required can be ordered as options.
- A software ***enhanced*** version of each system software package can be ordered as an option if customers require any of the capacity and feature capabilities described below:
    - Enhancements to a **DIGITAL** system will include: 512 channels, ADP (G193), Data Capability (W947), 16 trunked systems, 16 trunked personalities, 20 call lists, 25 call list members, and 20 scan lists.

      OR

    - Enhancements to an **ANALOG** system include: 512 channels, 16 trunked systems, 16 trunked personalities, 20 call lists, 25 call list members, and 20 scan lists. Note: This enhancement package does NOT include ADP (G193) or Data (W947) capability.

Ordering Sequence
Order Example:

1	M28URS9PW1AN	XTL 1500 Mobile
1A	GXXX	System Software Package
1B	GXXX	Standard Antenna
1C	Etc.	Other Options
1D	G798, G91	Control Station

- **1 Main Line Item**
    - **Order** the XTL 1500 model number.

- **1A Sub-Items**
    - **Order** the **System Software Package**
        - Select 1 system software package (Standard - G788, G789, G790, G809).
        - If additional capacity or feature capabilities are desired, order software enhanced system software package (Software Enhanced – G964, G965, G966, G967).
        - Refer to the matrices below for specific features available with each package (option).

- **1B Accessories**

- **Order** one (1) Antennas (G174, G175, G335, W464) or No Antenna Needed (G89).

- **1C Etc.**
  - If additional speaker is required, **order** external speaker (B18).

- **1D Control Station**
  - If control station operation is required, **order** Control Station Base Mount (G798) and Power Supply with power cable (G91).
  - No external speaker should be ordered for control station operation as the mobile includes an internal speaker as standard.

Each hardware model must be ordered with 1 of the System Software Package *options listed* below. Please refer to the list of features and capabilities that corresponds to the system type to be ordered.

COMMON SOFTWARE FEATURES SUPPORTED BY "SmartZone® System Packages"				
	"3600 Analog Trunking"	"3.6KB ASTRO Digital"	"9.6KB ASTRO Digital"	"Digital Conventional"
	G809	**G789**	**G788**	**G790**
			Project 25	Project 25
RADIO WIDE FEATURES				
48 Modes / Channels	Yes	Yes	Yes	Yes
Analog or Digital Operation	No	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable *ADP supported when Software Enhancement Package is ordered (see corresponding matrix below).	No*	No*	No*	No*
One Touch Operation	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified in the APCO Project 25 documents.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed)	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
MDC PTT ID (Encode / Decode)	Encode	Yes	Yes	Yes
MDC Selective Radio Inhibit (Decode)	Yes	Yes	Yes	Yes
MDC Call Alert (Encode / Decode)	Yes	Yes	Yes	Yes
MDC Radio Check (Decode)	Yes	Yes	Yes	Yes
MDC Voice Selective Call (Encode / Decode)	Yes	Yes	Yes	Yes
MDC Remote Monitor	N/A	N/A	N/A	Yes
MDC Call Lists (Call Alert / Selective Call)	Yes	Yes	Yes	Yes
MDC Emergency Call (Encode / Decode)	Yes	Yes	Yes	Yes
MDC Emergency PTT ID (Encode)	Encode	Yes	Yes	Yes
MDC Emergency Alarm (Encode)	Yes	Yes	Yes	Yes
MDC Emergency w/ Voice to Follow	Yes	Yes	Yes	Yes

MDC Select Emergency	Yes	Yes	Yes	Yes
MDC Status (Encode)	Yes	Yes	Yes	Yes
MDC Message (Encode)	Yes	Yes	No	Yes
MDC Silent Emergency (Encdode)	Yes	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Interoperable Features when used in the ASTRO Digital CAI Mode				
Unaddressed Voice Call	No	Yes	Yes	Yes
Talk Group Call	No	Yes	Yes	Yes
Group Call Alert™	No	Yes	Yes	Yes
Talk Group Identification (TGID)	No	Yes	Yes	Yes
Selective Call (Individual Voice Call)	No	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	No	Yes	Yes	Yes
PTT ID (Individual Identification)	No	Yes	Yes	Yes
Call Alert Encode/Decode	No	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	No	Yes	Yes	Yes
Telephone Interconnect Unlimited (Encode / Decode)	No	Yes	Yes	Yes
Unlimited	No	Yes	Yes	Yes
Selective Radio Inhibit	No	Yes	Yes	Yes
Radio Check	No	Yes	Yes	Yes
Status/Message	No	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Smart PTT	No	Yes	Yes	Yes
SmartZone Omnilink	Yes	Yes	Yes	No
Trunking Type II Only Features				
20 Trunked Systems (Maximum)	Yes	Yes	Yes	N/A
Talkgroup Calls	Yes	Yes	Yes	N/A
PTT ID	Yes	Yes	Yes	N/A
Call Alert Encode / Decode	Yes	Yes	Yes	N/A
Dual Mode Scan	Yes	Yes	Yes	N/A
Failsoft by Talkgroup	Yes	Yes	Yes	N/A
Telephone Interconnect Unlimited (Encode / Decode)	Yes	Yes	Yes	N/A
System Wide Call (Receive Only)	Yes	Yes	Yes	N/A
Selective Radio Inhibit	Yes	Yes	Yes	N/A
Priority Monitor Scan	No	No	No	N/A
Dynamic Regrouping	Yes	Yes	Yes	N/A
Status / Message (No DEK)	Yes	Yes	Yes	N/A
Dispatcher Interrupt	No	No	No	N/A
Private / Enhanced Conversation Encode / Decode	Yes	Yes	Yes	N/A
Radio Trace	Yes	Yes	No	N/A
Reprogram Request	Yes	Yes	Yes	N/A
Voice on Control	Future	Future	Future	N/A
SmartZone Automatic Site Registration	Yes	Yes	Yes	N/A
SmartZone RSSI Operation	Yes	Yes	Yes	N/A
SmartZone Busy Override	No	No	No	N/A
SmartZone Preferred Site	Yes	Yes	Yes	N/A
SmartZone Forced Site Search	Yes	Yes	Yes	N/A
SmartZone Site Lock/Unlock	Yes	Yes	Yes	N/A
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	N/A
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	N/A

Additional features / capabilities are available by ordering 1 of the "eoftware enhanced" System Software Options (see below). When ordering the software enhanced system software options, customers will get the features / capabilities listed below **in addition to**

those specified in the above matrix. Please refer to the feature / capability column that corresponds to the system type ordered.

"ADDITIONAL" FEATURES / CAPABILITIES SUPPORTED WITH SOFTWARE ENHANCEMENT PACKAGE

	"3600 Analog Trunking"	"3.6KB ASTRO Digital"	"9.6KB ASTRO Digital"	"Digital Conventional"
	G967	**G965**	**G964**	**G966**
			Project 25	Project 25
512 Channels	Yes	Yes	Yes	Yes
20 Trunked Systems	Yes	Yes	Yes	No
50 Trunked Personalities	Yes	Yes	Yes	No
Call Lists: 3600 Trunking - 20 lists 9600 Trunking & Digital Conventional - 10 lists MDC - 50 lists	Yes	Yes	Yes	Yes
Call List Members: 3600 Trunking & 9600 Trunking - 25 call list members Digital Conventional & MDC - 50 call list members	Yes	Yes	Yes	Yes
20 Scan Lists	Yes	Yes	Yes	Yes
ADP (G193) *ADP is only supported on 9600 trunking or on digital conventional channels.	No	Yes*	Yes	Yes
Data (W947)	No	Yes	Yes	Yes

SELF-QUIETING SPURS

12MHz is Control Head's OMAP processor core clock frequency that allows the processor to operate correctly. Unfortunately a low level emission of this frequency is being picked up by the radio's receiver.

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on APX 7000 Dual Display Portable radios. Advanced Messaging is NOT supported on APX 7000 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for APX Mobiles Require: (Note: some control heads are not available on all main models)

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- P25 Conventional (G48)
- Packet Data Interface (W947)

OR

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking Software (G361)
- Packet Data Interface (W947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messeging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

Frequency (MHz)	Source
863.9875 MHz	multiple of 12 MHz

FCC Information

Band/Model	Power Output	Transmitter Certification (Type Acceptance)	Emissions	Applicable Rules
700 (764 - 806 MHz)* 800 (806 - 869 MHz) 700 (Itinerant channels) **	10 - 35 Watts 10 - 35 Watts 2 Watts	AZ492FT5823	8K10F1D, 8K10F1E, 11K0F3E, 16K0F3E, 20K0F1E, 20K0F1D	22, 74, 90

FCC Approval achieved through Class I Permissive Change to Transmitter.

- Except for Itinerant and low-power incident channels.

** Itinerant & Low-Power Incident Channels	
Channel Number	Frequency Range (MHz)
1 - 12	764 - 764.075
949 - 960	775.925 - 776
961 - 972	794 - 794.075
1909 - 1920	805.925 - 806

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA Ç Canada personnel refer to Section A under CANADA ONLY information.

Models

Description	Nomenclature	APC	Price
XTL 1500 MOBILE 35 WATT, 764-870MHZ	M28URS9PW1 N	775	$1,600.00

Options

System Software Options

Description	Nomenclature	APC	Price

ENH: 9600 DIGITAL BAUD	G788	775	$630.00
ENH: 3600 ASTRO DIGITAL	G789	775	$530.00
ENH: SOFTWARE P25 CONVENTIONAL	G790	775	$130.00
ENH: 3600 ANALOG BAUD	G809	775	$230.00
ADD: XTL1500 RADIO AUTHENTICATION	W391	775	$100.00

Software Enhanced System Software Options

(Do NOT select any of the above system software options IF ordering 1 of the system software options below.)

Description	Nomenclature	APC	Price
9600 ASTRO DIGITAL ENHANCE	G964	775	$830.00
ENH: 3600 ASTRO DIGITAL ENHANCE	G965	775	$730.00
ENH: P25 DIGITAL CONVL ENHANCE	G966	775	$330.00
ENH: ANALOG 3600 BAUD ENHANCED	G967	775	$430.00

System Enhancement Features

Description	Nomenclature	APC	Price
ENH: OVER THE AIR PROVISIONING	G996	726	$100.00
Compatible with P25 Trunking only. Requires W847 (packet data) which comes with ordering an Enhanced Digital System Software option.			
ENH: RADIO TRACE AND REMOTE MONITOR	G170	775	$75.00

Alarm

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAYS AND CABLE	W116	500	$75.00
For either HORN or LIGHTS. NOT both			

Antenna

Description	Nomenclature	APC	Price
ADD: ANTENNA 3DB LOW-PROFILE 764-870MHZ	G174	500	$43.00
Corresponding kit: HAF4013 Corresponding Motorcycle kit: HAF4018			
ADD: ANTENNA 3DB ELEVATED FEED 764-870MHZ	G175	500	$75.00
NOT Compatible with Motorcycle. Corresponding kit: HAF4014.			
ADD: ANTENNA 1/4 WAVE 764-870MHZ	G335	500	$14.00
Corresponding kit: HAF4018 Corresponding Motorcycle kit: HAF4015 **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.**			
ADD: NO ANTENNA NEEDED	G89	500	$0.00
ALT: ANTENNA 3DB GAIN 764-870MMZ	W484	500	$38.00
Not compatible with Motorcycle. Corresponding kit: HAF4017.			

Control Station Operation

Description	Nomenclature	APC	Price
ADD: CONTROL STATION POWER SUPPLY	G91	500	$269.00
Corresponding kit: HPN4007			
ADD: CONTROL STATION MOUNT	G798	775	$70.00

Emergency

Description	Nomenclature	APC	Price
ADD: EXTERNAL EMERGENCY FOOTSWITCH	W470	500	$56.00
Corresponding kit: HLN5113.			
ADD: EXT EMERGENCY PUSHBUTTON	W688	500	$56.00

Corresponding kit: HLN5131

Microphones

Description	Nomenclature	APC	Price
ALT: CONTROL STATION MICROPHONE Desh Mount Required Corresponding Kit: RMN5070	W382	500	$169.00
ADD: HANDSET/HANGUP GCAI Coiled Cable with Toggle Switch Accessory Kit: HLN1457A	G874	514	$285.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079	W20	514	$180.00

~~Service Options (These Service options are NOT applicable for Asia Pac)~~

REPAIR SERVICE ADVANTAGE
Provides for extended hardware repair coverage beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$64.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$246.00
ENH: 3 YR CANADA EXTND WRNTY XTL	GA00313	386	$177.00
ENH: 5 YR CANADA EXTND WRNTY XTL	GA00316	386	$240.00

REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00

Speakers

Description	Nomenclature	APC	Price
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$60.00

Miscellaneous

Description	Nomenclature	APC	Price
ADD: KEY LOCK MOUNT	W81	500	$33.00

Accessories

Antenna

Description	Nomenclature	APC	Price
ANTENNA (762-870 MHZ) 3DB LOW-PROFILE	HAF4013	500	$43.00

ANTENNA (762-870 MHZ) 3DB ELEVATED FEED	HAF4014	500	$75.00
ANTENNA (762-870 MHZ) 1/4 WAVE	HAF4016	500	$23.00
ANTENNA (762-870 MHZ) 3DB GAIN COLLINEAR	HAF4017	500	$38.00

Cable (s)

Description	Nomenclature	APC	Price
POWER CABLE, 10 FT. (LOW/MID POWER) 30 & 35 WATT	HKN4191	412	$18.00

Control Station

Description	Nomenclature	APC	Price
CONTROL STATION MOUNT	HLN6925	775	$95.00
PS 14V 10A 117/240 VAC.	HPN4007C	500	$296.00

Customer Programming Software

Emergency

Description	Nomenclature	APC	Price
EMERGENCY FOOT SWITCH	HLN5113	604	$61.75

Speakers

Description	Nomenclature	APC	Price
EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	HSN4038	476	$60.50

Microphones

MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	706	$295.00
XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00

Vehicle Location Solution

Vehicle Location Solution

Vehicle location or GPS is now available on the ASTRO 25 XTL 1500 mobile radio.

The TrimFleet ™ GPS mobile units provide a versatile and economical platform for mobile positioning applications. Using state-of-the-art GPS receiver technology, the TrimFleet GPS receiver unit has been optimized for vehicle installation and operation, providing reliable vehicle position, direction, speed, time and status in any weather, anywhere in the world.

The TrimFleet receiver contains a 12-channel GPS module and an (optional) angular rate sensor module. The TrimFleet receiver connects directly to in-vehicle laptops/workstations as well as VRM and XTL radios. The TrimFleet GPS receiver outputs positions when in GPS coverage via either of its RS-232C serial ports in National Marine Electronics Association Protocol (NMEA), Trimble ASCII Interface Protocol (TAIP) and Point to Point Protocol (PPP) formats. The TrimFleet receiver may be configured to send the position data in either protocol via the two RS-232C data ports. Once installed in a vehicle and driven for a short distance, the 12-channel GPS

module used in the TrimFleet receiver will automatically self-calibrate.

The TrimFleet DRU Plus may be equipped with an optional internal module to provide dead reckoned position data while outside of GPS coverage. This is accomplished through the use of advenced gyroscopic technology in combination with connections to the vehicle speed sensor

and vehicle direction signal (forward or reverse.) Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

I/O PORTS

The TrimFleet DRU Plus provides two RS232C compatible communication ports that may be connected to external devices. One port provides a DE-9 female DCE connection, and the other port provides a DE-9 female DTE connection. The ports may be configured individually for baud rates between 110 and 115.2K baud. Both ports support NMEA and TAIP protocols. The default configuration for both ports is 9600 baud TAIP.

Also provided is support for PPP over RS232C on Port 1. An IP capable XTL 1500 radio may be interfaced to the port to allow wireless transmission of TAIP messages to an AVL server. The TAIP messages will be encapsulated in UDP packets and sent to a configurable destination IP address and port. TAIP messages may also be sent back to the TrimFleet DRU Plus by the AVL application to modify reporting rates and query current location or status.

Vehicle location is available only on ASTRO Conventional and Trunked IV&D Systems. Subscribers must have version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software.

Digital Conventional Ordering requirements for XTL 1500 Mobile:

- ASTRO Digital CAI Operation (G966)
- Mid Power RS232 Cable (HKN6160A)(Hooks to the J2 rectangular connector)

P25 Trunking Ordering requirements for XTL 1500 Mobile:

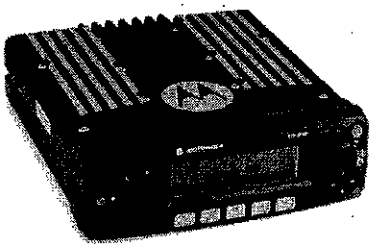
- ASTRO Project 25 Trunking 9600 Software (G964)
- Mid Power RS232 Cable (HKN6160A)(Hooks to the J2 rectangular connector)

Description	Nomenclature	APC	Price
TRIMFLEET DRU PLUS (W/DR & POWER CABLE)	DDN9439	222	$745.00

Description	Nomenclature	APC	Price
TRIMFLEET APU (W/POWER CABLE)	DDN9440	222	$620.00

Description	Nomenclature	APC	Price
TRIMFLEET GPS ANTENNA WITH CABLE	DDN9474	222	$99.00

Data Compiled 16-May-2013 using DUP and all prices in USD



XTL 2500 Mobile
896-941 MHz Band

Secure and Trunked Radio Systems

Ship Card

General Information

The XTL 2500 Mobile Line offers 1 radio hardware model:

Hardware Mode	Modes	Alphanumeric Display
		Lines/Characters
		per Line
CH	1000	4/14

OPERATING MODES

XTL 2500 Radio Models are capable of operating in the following voice communication mode:

- normal analog (clear voice)

The mode of operation is programmed on a channel-by-channel basis.

Each hardware model must be ordered with one of the following System Enhancement Software Package options.

- G48 - Conventional Software Package
- G51 - 3600 Analog SmartZone Trunking

COMMON SOFTWARE FEATURES SUPPORTED BY	
G51 "SmartZone®"	
	"Analog Operation"(G241)
RADIO WIDE FEATURES	
Maximum Modes	
XTL 2500 Control Head	1000
Analog Operation	Yes
Digital Operation	No
12.5 KHz Programmable Channels	
ADP Encryption	No
Encryption Capable	No
One Touch Operation	Yes
Radio Wide Transmit Inhibit	Yes
Time Out Timer	Yes
FLASHport	Yes

ANALOG CONVENTIONAL FEATURES	
Conventional Features are additional radio wide features beyond those specified in the APCO Project 25 documents.	
CSQ/PL/DPL	Yes
Dual Priority Channel Scan	Yes
Repeater/Talkaround Operation	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes
Smart PTT	Yes
Monitor	Yes
DTMF (Telephone Tone Generation w/ Microphone)	Yes
MPL	Yes
MDC PTT ID	Yes
MDC Selective Radio Inhibit (Decode Only)	Yes
MDC Call Alert (Encode/Decode)	Yes
MDC Radio Check (Decode Only)	Yes
MDC Voice Selective Call (Encode/Decode)	Yes
MDC Remote Monitor (Decode Only)	Yes
MDC Call Lists (Call Alert/Select Call)	Yes
MDC Emergency	Yes
MDC Silent Emergency (Encode)	Yes
Trunking Type II Only Features	
Maximum Number of Trunked Systems-20	
Talkgroup Calls	Yes
PTT ID	Yes
Call Alert Encode/Decode	Yes
Dual Mode Scan	Yes
Failsoft by Talkgroup	Yes
Telephone Interconnect Encode/Decode	Yes
System Wide Call (Receive Only)	Yes
Selective Radio Inhibit	Yes
Priority Monitor Scan	Yes
Dynamic Regrouping	Yes
Status/Message	Yes
Dispatcher Interrupt	No
Private/Enhanced Conversation Encode/Decode	Yes
Radio Trace	Yes
Reprogram Request	Yes

Each hardware model must be ordered with 1 of the System Enhancement Software Package options, Conventional or SmartZone.

SOFTWARE FEATURES SUPPORTED BY	
G51 "SmartZone®"	
	"Analog Operation" (G241)
Trunking Type II Only Features	

Voice on Control	Future
SmartZone Automatic Site Registration	Yes
SmartZone RSSI Operation	Yes
SmartZone Busy Override	No
SmartZone Preferred Site	Yes
SmartZone Forced Site Search	Yes
SmartZone Site Lock/Unlock	Yes
SmartZone Adjacent Control Channel OSW	Yes
Emergency Alarm Call Receive Indication	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the XTL 1500 Mobile Radio Series. Separation of frequencies can be as wide as the allowable sub-band per radio model with no degradation of any performance specifications. **If an incorrect antenna is used, degraded performance may be experienced.**

COMMON AIR INTERFACE

Conventional channels are P25 compliant with the ASTRO Digital CAI Operation Software (G806). ASTRO P25 Trunking Software (G361) **must** be added for P25 compliance in trunked systems.

PROJECT 25 ENCRYPTION

When ordering any of the Encryption Algorithm:

- **MUST** order the Encryption UCM Hardware (G159)
- ADP Privacy not supported by OTAR. ADP is digital P25 conventional / P25 trunking only.
- The DES-OFB and AES-OFB Encryption offered is compliant with Project 25 standards and does not support analog encryption operation.
    - REQUIRES the ASTRO Digital CAI (G806) to operate the DES-OFB or AES-OFB Encryption
- If ordering a non-OFB (XL version) Encryption:
    - The non-OFB encryption (XL versions) can be operated in either analog or CAI digital mode but will not be Project 25 compliant.
- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.
    - Encryption UCM Hardware (G159) module may be ordered without an Encryption Algorithm for later upgrade in the field.

FIELD INSTALLED PROJECT 25 ENCRYPTION

The DES-OFB and AES-OFB Encryption offered is compliant with Project 25 standards. Operation of DES-OFB and/or AES-OFB encryption requires the ASTRO Digital CAI (G806). Radios can be upgraded via FLASHport to CAI operation.

- When used in CAI mode, tha non-OFB Encryption will not be Project 25 compliant.

FIPS 140-2 COMPLIANCE

Encryption Modules equipped with AES are FIPS 140-2 compliant. ADP Privacy is not FIPS compliant. Further information regarding FIPS 140-2 certification may be found using the following links:

FIPS 140-2 Crypto Module Validation Program (CMVP)

NIST Cryptographic Module Validation Lists

Self-Quieting Spurs Frequency (MHz)

UHF R1 384MHz and 435.2MHz

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

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ASTRO Advanced Messaging Solution will be available on APX 7000 Dual Display Portable radios. Advanced Messaging is NOT supported on APX 7000 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for APX Mobiles Require: (Note: eome control heads are not available on all main models)

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- P25 Conventional (G48)
- Packet Data Interface (W947)

OR

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking Software (G361)
- Packet Data Interface (W947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

FCC Information

Band/Model	Power Output	Transmitter Certification (Type Acceptance)	Emissions	Applicable Rules
896-940 MHz	10 - 30 Watts	AZ492FT5847	11K0F3E, 8K10F1E, 8K10F1D	90

- *Except for Itinerant and low-power incident channels.*

** Itinerant & Low-Power Incident Channels

Channel Number	Frequency Range (MHz)
TBD	TBD

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

Ç Canada personnel refer to Section A under CANADA ONLY information.

Guideline

This price page consists of the following sections:

A. Required Main Models and Options for standard operation (Steps 1-9)

B. Control Station

C. Optional Features

D. Aftermarket Accessories

Section A: Required Main Model and Options

For standard Radio Operation **Steps 1 - 9** **must be** selected.

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

1: Main Model *(Must Select)*

Description	Nomenclature	APC	Price
896-941MHZ 10-30W	M21WRS9PW1 N	514	$1,497.00

2: Operation Mode *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: SOFTWARE ASTRO READY ANALOG NOT COMPATIBLE with Encryption Algorithm W989, W793, W797, G298, G851, or G843 when combined with a Trunking Software Option. DES-OFB is not operational in Analog Operation.	G241	500	$0.00
ENH: XTL SOFTWARE ASTRO DIGITAL CAI OPERATION	G806	514	$515.00

3: System Enhancement Software *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: CONVENTIONAL OPERATION	G48	514	$275.00
ENH: SOFTWARE SMARTZONE/SINGLETONE	G51	514	$975.00

3b: Optional System Enhancement Software *(Not Required)*

ADD: P25 TRUNKING SOFTWARE When ordering this option G51 & G806 MUST be ordered. G173 is included at "NO CHARGE".	G361	656	$300.00

4: Control Head Hardware *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: XTL2500 CONTROL HEAD	G442	514	$292.00
ADD: NO CONTROL HEAD NEEDED Requires remote mounting option (G67 or G655)	G88	500	$0.00

5: Control Head Software *(Must Always Select G444)*

Description	Nomenclature	APC	Price
ADD: ADD: CONTROL HEAD SOFTWARE MUST ALWAYS SELECT THIS OPTION	G444	514	$0.00

6: Mounting *(Must Select One)*

****If a remote mount cable other than 5 meters (17ft) is desired for the G67, please reference the "Remote Mount Cables" section below in Section C: Optional Features****

Description	Nomenclature	APC	Price
ADD: DASH MOUNT Required for Control Station Operation	G66	500	$125.00
ADD: THUMB SCREW REMOTE MOUNT	G67	514	$297.00

7: Antenna *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: NO ANTENNA NEEDED	G89	500	$0.00
ADD: ANT 900MHZ (890-960MHZ) 3DB LOW ROOF TOP 14?	B925	722	$43.00
ADD: ANT 900MHZ (890-960MHZ) 3DB LOW ROOF TOP 22?	B926	623	$75.00

8: Microphones *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W8 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.	G90	500	$0.00
ADD: PALM MICROPHONE Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090	W22	500	$72.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079 itemn=w382,4#]	W20	514	$180.00
ADD: HANDSET/HANGUP GCAI Coiled Cable with Toggle Switch Accessory Kit: HLN1457A	G874	514	$285.00
ADD: CONTROL STATION DESK MICROPHONE Dash Mount Required Corresponding Kit: RMN5070	W382	500	$169.00
ADD: MODEL III KEYPAD TELEPHONE HANDSET Corresponding kit: HMN4097A	GA00221	514	$295.00

9: Speakers *(Must Select One)*

****G142 NO SPEAKER Required for Control Station****

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B16	500	$60.00
ADD: INCREASED AUDIO POWER 13W Corresponding kit: HSN4032. NOT COMPATIBLE with W665 Control Station and Motorcycle Configuration.	W432	500	$71.50

Section B: Control Station

CONTROL STATION OPERATION

1. First, you must review your selection of the following options from "Section 1: Required Options".
   - Step 1 *(Note: Main Model)*
   - Step 2 *(Note: All listed options are compliant)*

- Step 3 *(Note: All listed options are compliant)*
- Step 4 *(Note: XTL 2500 Control Head* ***OR*** *"No Control Head Needed" are compatible with Control Station Application- Must only select one).*
- Step 5 *(Note: Must Select G444. The XTL 2500 Control Head Software is compatible with Control Station Applicetion).*
- Step 6 *(Note: Must Select G66. Control Stetion operation is only offered in Dash mount configuration)*
- Step 7 *(Note: All listed options are compliant)*
- Step 8 *(Note: Select desired microphone option and if no microphone is needed, G90 must be selected).*
- Step 9 *(Note: Must Select G142 - No Speaker Needed)*

II. You Must Select ONE of the Following "Specific Control Station Options":

SPECIFIC CONTROL STATION OPTIONS

Control Station Operation and Power Supply ***(Must Select BOTH)***

Description	Nomenclature	APC	Price
ADD: CONTROL STATION POWER SUPPLY Corresponding kit: HPN4007	G91	500	$269.00
ADD: CONTROL STATION OPERATION For DASH MOUNT radios ONLY (G66)!! Not compatible with W3, or W9 control head options. G665 includes a base tray and a speaker; therefore G142 has to be ordered to eliminate extra Speaker. Requires a Power Supply (G91 can be ordered as a Power Supply). Requires one of the Microphone Options: G80, W22 or W382. Corresponding kit: HLN6042	W665	500	$70.00

III. Features listed in "Section C: Optional Features" are optional, if applicable. Please read the option's description to determine compatibility.

Section C: Optional Features

The following features are **optional** and will provide additional capabilities, if required.

System Enhancemsnt Options

Description	Nomenclature	APC	Price
ENH: ENHANCED DIGITAL ID DISPLAY 8 numeric character unit to unit display. NOTE: This option is required to display Radio ID or Radio Alias on the display for analog and digital conventional and trunking configurations.	G114	500	$75.00
ENH: RADIO TRACE AND REMOTE MONITOR Note: G170 option for Radio Trace/Remote Monitor is not compatible with W3 Control Head and G474 (Multi-Radio). For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.	G170	500	$75.00
ADD: CONVENTIONAL VOTING SCAN ASTRO This feature allows for voting of the Conventional Channels ONLY.	G387	500	$200.00
ADD: TRUNKED ONE TOUCH BUTTON	G683	500	$150.00
ENH: OVER THE AIR PROGRAMMING Compatible with P25 Trunking only. Requires W947 Data option. To do in field POP25 programming must use Advanced System Key (OVN4046A)	G996	518	$100.00
ADD: XTL2500 RADIO AUTHENTICATION	W391	514	$100.00

Encryption Hardware and Software

Description	Nomenclature	APC	Price
ADD: ENCRYPTION UCM REQUIRED for ANY encryption combination of Hardware Based Algorithms. Not Compatible with G193. CUSTOMERS USING THE FOLLOWING FREQUENCIES MUST ADD FREE OPTION "QA00351AA" (ENH: UCM SP TRIGGER) due to a known Self Quiting Issue for radios with the standard UCM. UHF SELF-QUIETING SPURS: UHF RANGE 1 FREQUENCIES: 383.875 MHz 393.2125 MHz 395.975 MHz 432 MHz 456 MHz UHF RANGE 2 FREQUENCIES:	G159	500	$150.00

458 MHz
479.975 MHz
480 MHz

ADD: KEY RETENTION 30 SECONDS	G336	500	$50.00
G159 REQUIRED			
ADD: MULTIPLE KEY ENCRYPTION OPERATION	W969	500	$330.00
REQUIRED when using more than one encryption algorithm or encryption key.			
ENH: CONVENTIONAL TACTICAL REKEY WITH MULTIKEY	H04	514	$350.00
Must Order IV&D(Q947)			

Encryption Algorithms

Description	Nomenclature	APC	Price
ADD: ADP ENCRYPTION	G113	526	$349.00
REQUIRES G159. INCLUDES W969 Multikey. ORDER G194 if need ADP with DES/DES-XL-DES-OFB. NOT AVAILABLE with 3600 Trunking and Analog Conventional software Packages. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G806 in the Digital Conventional mode ONLY.			

Description	Nomenclature	APC	Price
ADD: ADP SOFTWARE DSP BASED CRYPTO	G193	500	$10.00
REQUIRES: G806 Digital Operation DOES NOT REQUIRE: G159 UCM or G77/G76 Encryption Warranty. Use standard warranty options if needed. COMPATIBLE with: G361 P25 software package; and G46, G50, and G51 software packages when used with the G806 in the Digital Conventional mode ONLY. .Includes 8 non-indexing encryption keys..			

Description	Nomenclature	APC	Price
AES ENCRYPTION-UCM	G843	412	$625.00
AES operates in digital mode only. NOT compatible with G241 ENH: SOFTWARE ASTRO READY ANALOG			

Description	Nomenclature	APC	Price
ADD: DES, DES-XL, DES-OFB ENCRYPTION - UCM	G625	412	$749.00
The Multikey (W969) or OTAR (G298) are only required when more than 1 key or 1 algorithm is programmed.			

Description	Nomenclature	APC	Price
ADD: DVI-XL ENCRYPTION	W793	500	$520.00
G159 is REQUIRED when ORDERING			

Description	Nomenclature	APC	Price
ADD: DVP-XL ENCRYPTION	W797	500	$487.00
G159 is REQUIRED when ORDERING			

Remote Mount Cables

(The 5 meter (17 FT) Cable Ships Standard)

Description	Nomenclature	APC	Price
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT)	G582	514	$65.00
For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio Corresponding kit: HKN6184			
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT)	G607	514	$45.00
Corresponding kit: HKN6186A			
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT)	G609	514	$35.00
Corresponding kit: HKN6187			
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT)	G610	514	$25.00
Corresponding kit: HKN6188			
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT)	G879	514	$55.00
Corresponding kit: HKN6185			
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT)	G618	514	$10.00
Corresponding kit: HKN6170			

DEK

Description	Nomenclature	APC	Price
ADD: STATUS MESSAGE 8 MESSAGES	W355	500	$475.00
NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration. CORRESPONDING KIT: H1838A			
ADD: DDE STATUS MESSAGES 16	W374	500	$650.00
NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration. CORRESPONDING KIT: H1839A			

Direct Mode Entry

Description	Nomenclature	APC	Price
ADD: 8 MODE DIRECT ENTRY ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1835A	W599	500	$180.00
ADD: 16 MODE DIRECT ENTRY ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1838A	W614	500	$360.00
ADD: 24 MODE DIRECT ENTRY NOT COMPATIBLE with W289 Siren/PA. 9600 Systems offer ONLY "Status" and not "Message". ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1837A	W615	500	$540.00

WHELEN SIREN (MOTOROLA COMPATIBLE)

NOTE: THE NEW SIREN IS COMPATIBLE WITH APX AND XTL MOBILES WITH "O" SERIES OR M5 CONTROL HEADS ONLY. THIS SIREN IS NOT COMPATIBLE WITH ANY "W" SERIES CONTROL HEADS

THE SIREN BASE MODEL TT2592, CABLE TT05707 AND THE SIREN MOUNTING HARDWARE TT0507 MUST ALWAYS BE ORDERED (THIS SIREN IS ORDERED AS A SEPARATE LINE ITEM, TT2592 IS THE MODEL)

DEK OPTIONS ARE AVAILABLE AS OPTIONS TO THE SUBSCRIBER AS SHOWN BELOW

Description	Nomenclature	APC	Price
WHELEN/MOTOROLA SIREN	TT2592	656	$395.00
SIREN HARDWARE INSTALL KIT	TT05707AA	656	$20.00
SIREN TO RADIO CABLE	TT05708AA	656	$65.00
SIREN TO DEK CABLE - O3 CONTROL HEAD ONLY	TT05709AA	656	$78.00

SIREN DEK OPTIONS

ADD: DEK FOR WHELEN SIREN W/ O3 CH ONLY	GA00812	656	$105.00
ADD: DEK FOR WHELEN SIREN	GA00814	656	$105.00

Auxiliary Switches

Description	Nomenclature	APC	Price
ADD: AUXILIARY SWITCH PANEL Corresponding kit: HLN1198. G67 REQUIRED. NOT compatible with W3 control head or motorcycle.	W591	500	$165.00

Alarm

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAYS AND CABLE For either HORN or LIGHTS. NOT both	W116	500	$75.00

Emergency

Description	Nomenclature	APC	Price
ADD: PTT FOOTSWITCH Requires W872 Visor Mic. Kit Number: GLN7278B	G235	514	$51.00
ADD: EXT EMERGENCY PUSHBUTTON Corresponding kit: HLN5131	W688	500	$56.00

Frequency and Squelch Codes

Description	Nomenclature	APC	Price
ENH: FACTORY PROGRAMMING	W844	500	$0.00

Packet Data Interface / Data Cables

Description	Nomenclature	APC	Price
ADD: RS232 DATA INTFC CABLE-DASH 6 FT RS232 DATA CABLE	G303	500	$50.00

Corresponding kit: HKN6160A.			
RS232 DATA INTFC CABLE-TRUNK 20 FT RS232 DATA CABLE Corresponding kit: HKN6161A.	G304	500	$50.00
ADD: RS232 & IV&D PACKET DATA INTERFACE This option is ONLY Operational on Digital Trunking and Digital Conventional systems!! INCLUDES the DLM Application. This option does not include Cables. G303 or G304 should be ordered separately.	W947	500	$200.00
USB DATA INTFC CABLE-DASH 6 FT USB W/IGNITION SENSE Corresponding kit: HKN6163B.	G308	500	$50.00

Service (These Service options are NOT applicable for Asia Pac)

REPAIR SERVICE ADVANTAGE
Provides for extended hardware repair coverage beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$64.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$246.00
ENH: 3 YR CANADA EXTND WRNTY XTL	GA00313	386	$177.00
ENH: 5 YR CANADA EXTND WRNTY XTL	GA00316	386	$240.00

REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00

Test Results

Description	Nomenclature	APC	Price
ADD: PRINTED TEST RESULTS	G799	500	$0.00

Miscellaneous

Description	Nomenclature	APC	Price
ADD: KEY LOCK MOUNT	W81	500	$33.00

Section D: Aftermarket Accessories

Algorithm Kits

Description	Nomenclature	APC	Price
XTL5000 AES256, ADP	NNTN8328A	585	$997.00
XTL5000 DES-XL, DES-OFB, ADP	NNTN8327A	585	$998.00
XTL5000 DES-XL, DES-OFB, AES256, AD	NNTN8326A	585	$1,499.00
XTL5000 AES256	NNTN8331A	456	$795.00
XTL5000 DVP-XL	NNTN8323A	585	$715.00
XTL5000 DES-XL, DES-OFB	NNTN8335A	585	$840.00

Antennas

Description	Nomenclature	APC	Price
ANTENNA, 900MHZ (890-960MHZ) 1/4 WAVE ROOF TOP, 14' CABLE Roof Mount, RG58 A/U cable, Mini UHF connector, Power: 100 Watts, Max., Gain: 3 dB, VSWR: Less than 1.5:1, Impedance: 50 Ohms, nominal	RRA4935	554	$30.00
ANTENNA, 900MHZ (690-960MHZ) 3DB ROOF TOP, 22' CABLE	RAF4003ARM	554	$39.50

Cables

AUDIO CABLE ADAPTER	HKN6156	500	$49.00
ADAPTER CABLE DATA	HKN6159	500	$49.00

Cables (Remote Mount)

CABLE, REMOTE MOUNT, 75 FT	HKN6166	514	$80.00
CABLE, REMOTE MOUNT, 115 FT	HKN6165	514	$105.00
CABLE,REMOTE MOUNT,131 FT	HKN6164	514	$122.00

Control Station

Description	Nomenclature	APC	Price
MOBILE DESK TRAY	HLN6042	617	$77.00
PS 14V 10A 117/240 VAC.	HPN4007C	500	$296.00

Customer Programming Software

Data

CABLE KIT 20' DATA RS232 Data Interface Cable - REMOTE	HKN6161	476	$50.00

Manuals

Description	Nomenclature	APC	Price
XTL 2500 M5 MANUAL	HLN1460D	514	$12.00

Microphones

HANDSET/HANGUP (HANGUP CUP)	HLN1457	706	$285.00
MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	706	$295.00
XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00
AS. SPECTRA & XTL5000 DESKTOP MIC	RMN5070A	706	$172.00

Speakers

Description	Nomenclature	APC	Price
EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	HSN4038	476	$60.50

Bull Horns for Sirens and Public Address

Description	Nomenclature	APC	Price
SPEAKER SIREN, ROUND W/CHROME & BLACK	TDN6251	706	$329.00
SPEAKER RECTANGULAR WITH CHROME FINISH	TDN6252	706	$265.00
SPEAKER UNDERHOOD WITH GRAY FINISH	TDN6253	706	$220.00
SPEAKER ROUND WITH GRAY FINISH	TDN6254	706	$248.00

Miscellaneous

Description	Nomenclature	APC	Price
WILDCARD	HLN1196	412	$165.00
AUXILIARY SWITCH PANEL (W591-W9)	HLN1342	617	$165.00

Data Compiled 16-May-2013 using DUP and all prices in USD

ASTRO® Digital XTL 2500 Dual Control Head Mobile

DUAL CONTROL HEAD ONLY

UHFR1 380-470 (10-40, 100 Watts)
UHF R2 450-520 (10-45 Watts)
VHF - 136 -174 (10-50, 100 Watts)
Secure and Trunked Radio Systems

Ship Card

~~***This Page is for XTL 2500 Dual Control Options Only. For Single~~ Control Head Radio Configurations, Options, or Accessories Please Refer to the Standard XTL 2500 Price Page***

ASTRO Digital XTL 2500 700/800 MHz

ASTRO Digital XTL 2500 UHF R1 Mid-Power

ASTRO Digital XTL 2500 UHF R2 Mid-Power

ASTRO Digital XTL 2500 VHF Mid-Power

ASTRO Digital XTL 2500 UHF R1 High-Power

ASTRO Digital XTL 2500 VHF High-Power

ASTRO XTL 2500 900MHz

General Information

What is an XTL 2500 Dual Control Head Configuration?

The XTL 2500 mobile radio and the control head can be configured in a dual control head configuration to support up to 2 control heads on a single transceiver. This allows control of a single XTL 2500 transceiver from up to 2 different control head locations.

What is the difference between an XTL 2500 Dual Control Head Configuration (W4/W5/W7/W9), a MCS Dual Control Configuration, and an Multiple Control Head Configuration?

Multi CH Config	W4/W5/W7/W9 Dual Control	MCS Dual Control (Canceled)
Uses XTL 2500 M5 Control Heads	Uses Legacy ASTRO Spectra Control Heads W4/W5/W7/W9	Uses Legacy MCS Model 2 and 3 Control Heads Not Compatible with XTL 2500 mobiles
Supports 2 Control Head Configurations	Supports 2 Control Head Configurations Only	Supports 2 Control Head Configurations Only
CPS Programmable for "One Active" Control Head OR "All Active"	Supports "One Active" Control Head	Supports "All Active" Control Head

Control Head Mode		
Supports INTERCOM Mode at all Control Heads	Does not support INTERCOM Mode	Does not support INTERCOM Mode
Uses Same Control Head Hardware that is interchangeable for all Control Heads	Uses Specific Hardware Models for "Front" and "Rear" Control Heads that are NOT Interchangeable	Uses Specific Hardware Models for "Front" and "Rear" Control Heads that are NOT Interchangeable

Guideline

Example Configurations: Dual Control

This price page consists of the following sections:

A. Required Main Models and Options for standard operation (Steps 1-11)

B. Optional Features

C. Optional DEK / Footswitch / Pushbutton Features

D. Aftermarket Accessories

E. Retrofit Mounting Kits

Section A: Required Main Model and Options

For standard Radio Operation (including Motorcycle) **Steps 1 - 11 must be** selected.

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

1: Main Model ***(Must Select One)***

******Low/Mid Power******

Description	Nomenclature	APC	Price
XTL 2500 764-870MHZ, 10-35W	M21URM9PW1 N	514	$1,497.00
XTL 2500 UHF R1 380-470MHZ, 10-40 W	M21QSM9PW1 N	518	$1,497.00
XTL 2500 VHF 136-174 MHZ, 10-50 W	M21KSM9PW1 N	518	$1,497.00
XTL2500 UHF R2 450-520 MHZ, 10-40 WATT	M21SSM9PW1 N	518	$1,497.00
896-941MHZ 10-30W	M21WRS9PW1 N	514	$1,497.00

******High Power******

Description	Nomenclature	APC	Price
UHF R1 380-470 MHZ 100 WATT	M21QTM9PW1 N	518	$1,997.00
VHF 136-174 MHZ 100 WATT	M21KTM9PW1 N	518	$1,997.00

2: Operation Mode ***(Must Select One)***

Description	Nomenclature	APC	Price
ENH: SOFTWARE ASTRO READY ANALOG	G241	500	$0.00
NOT COMPATIBLE with Encryption Algorithm W969, W793, W797, G298, G851, or G843 when combined with a Trunking Software Option. DES-OFB is not operationel in Analog Operation.			
ENH: SOFTWARE ASTRO DIGITAL CAI OPERATION	G806	500	$515.00

3: System Enhancement Software *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: CONVENTIONAL OPERATION	G48	514	$275.00
ENH: SOFTWARE SMARTZONE/SINGLETONE	G51	514	$975.00

4: Control Head Hardware *(Must Always Select G442)*

******Multi Control Head Always Requires the Control Head Hardware******

Description	Nomenclature	APC	Price
ADD: XTL2500 CONTROL HEAD	G442	514	$292.00

5: Control Head Software *(Must Always Select G444)*

******Multi Control Head Always Requires the Control Head Software******

Description	Nomenclature	APC	Price
ADD: ADD: CONTROL HEAD SOFTWARE	G444	514	$0.00
MUST ALWAYS SELECT THIS OPTION			

6: Multiple Control Head Hardware *(Must Only Select One)*

******Dual Control Head XTL 2500 Radios Always Require the GA00092. This option QTY should ALWAYS equal the main line item Qty.******

Description	Nomenclature	APC	Price
ADD: DUAL-CONTROL HARDWARE	GA00092	514	$570.00

7: Mounting *(Must Select G67 Remote Mount)*

******Multi Control Head Always Requires Remote Mount******

Mid Power

Description	Nomenclature	APC	Price
ADD: REMOTE MOUNT	G67	500	$297.00
Required for Duel Control and High Power Radios			

High Power

Description	Nomenclature	APC	Price
ADD: QUICK REL REMOTE MOUNT W/KEYLOCK	G655	585	$346.00
High Power Only			
ADD: THUMB SCREW REMOTE MOUNT	G67	514	$297.00

8: Remote Mount Cables

******THERE IS NO STANDARD 17' CABLE OFFERED FOR A MULTI CONTROL HEAD CONFIGURATION. YOU MUST ALWAYS ORDER ONE CABLE PER CONTROL HEAD. ALSO, THEREFORE, IF GA00092 DUAL CONTROL RADIO IS DESIRED THEN THE TOTAL QTY OF SPEAKER OPTIONS SHOULD BE 2X (DOUBLE) THE MAIN LINE ITEM QTY.******

****THE TOTAL CABLE LENGTH MAY NOT BE GREATER THAN 131 FT (40 METERS) ****

Description	Nomenclature	APC	Price
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00

9: Antenna *(Must Select One)*

******Dual Control Head Configurations require only ONE antenna option******

No Antenna Needed For All Bands

Description	Nomenclature	APC	Price
ADD: NO ANTENNA NEEDED	G89	500	$0.00

7/800

Description	Nomenclature	APC	Price
ADD: ANTENNA 3DB LOW-PROFILE 764-870MHZ Corresponding kit: HAF4013 Corresponding Motorcycle kit: HAF4018	G174	500	$43.00
ADD: ANTENNA 3DB ELEVATED FEED 764-870MHZ NOT Compatible with Motorcycle. Corresponding kit: HAF4014.	G175	500	$75.00
ADD: ANTENNA 1/4 WAVE 764-870MHZ Corresponding kit: HAF4016 Corresponding Motorcycle kit: HAF4015 **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.**	G335	500	$14.00
ALT: ANTENNA 3DB GAIN 764-870MMZ Not compatible with Motorcycle. Corresponding kit: HAF4017.	W484	500	$38.00

UHF R1/R2

Description	Nomenclature	APC	Price
ANTENNA 1/4 WAVE WHIP 380-433 MHZ Not Compatible with Motorcycle Corresponding kit: HAE6012. **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.**	G425	585	$25.00
ANTENNA 1/4 WAVE WHIP 450-470 MHZ Not Compatible with Motorcycle Corresponding kit: HAE4003.	G426	585	$25.00
ANTENNA 3.5DB 380-433 MHZ Not Compatible with Motorcycle Corresponding kit: HAE6010.	G427	585	$55.00
ANTENNA 3.5DB 450-470MHZ Not Compatible with Motorcycle Corresponding kit: HAE4011.	G428	585	$50.00
ANTENNA 5.0 DB 380-433 MHZ	G429	585	$62.00

Not Compatible with Motorcycle Corresponding kit: HAE6011.			
ANTENNA 5.0 DB 450-470 MHZ	G430	585	$58.00
Not Compatible with Motorcycle Corresponding kit: RAE4014ARB.			
ANTENNA WIDEBAND 380-470 MHZ	G431	585	$58.00
Not Compatible with Motorcycle Corresponding kit: HAE6013.			
ADD: ANTENNA 5DB GAIN 494-512 MHZ	G486	585	$58.00
Not Compatible with Motorcycle Corresponding kit: RAE4016ARB.			
ADD: ADD: ANT 1/4 WAVE 470-512 MHZ	G490	585	$14.00
Not Compatible with Motorcycle Corresponding kit: HAE4004.			
ADD: ANTENNA 3 DB ROOF TOP 470-495	G493	585	$33.00
Not Compatible with Motorcycle Corresponding kit: HAE4012.			
ADD: ANTENNA 3 DB ROOF TOP 494-512 MHZ	G494	585	$33.00
Not Compatible with Motorcycle Corresponding kit: HAE4013.			
ADD: 2DB ANT WIDEBAND 450-520 MHZ	G511	585	$70.00
Corresponding kit:HAE6015 Corresponding Motorcycle kit:HAE6015			

VHF

Description	Nomenclature	APC	Price
ANTENNA 1/4 WAVE WHIP ROOF TOP (136-144 MHZ)	G296	585	$13.50
Corresponding kit: HAD4006 Corresponding Motorcycle kit: RAD4002ARB			
ANTENNA 1/4 WAVE ROFF TOP VHF (144-150.8 MHZ)	G297	585	$13.50
Corresponding kit: HAD4007 Corresponding Motorcycle kit: RAD4003ARB			
ANTENNA 1/4 WAVE ROOF TOP VHF (150.8-162 MHZ)	G299	585	$19.50
Corresponding kit: HAD4008 Corresponding Motorcycle kit: RAD4004ARB			
ANTENNA 1/4 WAVE ROOF TOP VHF (162-174 MHZ)	G300	585	$13.50
Corresponding kit: HAD4009 Corresponding Motorcycle kit: RAD4005ARB			
ANTENNA, VHF (136-174MHZ, 3.4 BANDWIDTH) 3DB ROOF TOP	G301	585	$58.50
Not Compatible with Motorcycle Corresponding kit: HAD4022A.			
ADD: 1/4 WAVE BROADBAND ANT 146-174 MHZ	G629	585	$64.00
Not Compatible with Motorcycle Corresponding kit: HAD4017.			

10: Microphones *(Must Select One)*

******Total # of microphones must match the total # of control heads being ordered. The G90 "No Mic Needed" option counts as a mic option******

******Therefore, if a GA00092 Dual Control radio is desired, then the total Qty of mic options should be 2x (double) the main line item Qty. ******

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED	G90	500	$0.00
Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ADD: PALM MICROPHONE	W22	500	$72.00
Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090			
ADD: KEYPAD MIC (GCAI)	W20	514	$180.00

Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option.
Required for Emergency Hot Mic Operetion.
Corresponding kit: HMN4079

ADD: MODEL III KEYPAD TELEPHONE HANDSET	GA00221	514	$295.00

Corresponding kit: HMN4097A

11: Speakers *(Must Select One)*

*******Total # of speakers must match the total # of control heads being ordered. The G142 "No Speaker Naedsd" option counts as a speaker option******

******Therefore, if a GA00092 Dual Control radio is desired, then the total Qty of speaker options should be 2x (double) the main line item Qty. ******

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
~~ADD: AUXILARY SPKR SPECTRA 7.5 WATT~~	~~B18~~	~~500~~	~~$60.00~~

Corresponding kit: HSN4031.

ADD: INCREASED AUDIO POWER 13W	W432	500	$71.50

Corresponding kit: HSN4032.
NOT COMPATIBLE with W885 Control Station and Motorcycle Configuration.

Section B: Optional Features

The following options are **optional** and will provide additional capabilities, if required. All options below **ARE** compatible with XTL 2500 Dual Control Head configurations.

System Enhancement Options

Description	Nomenclature	APC	Price
ENH: ENHANCED DIGITAL ID DISPLAY	G114	500	$75.00

8 numeric character unit to unit display. NOTE: This option is required to display Radio ID or Radio Alias on the display for anelog end digital conventional and trunking configurations.

ENH: RADIO TRACE AND REMOTE MONITOR	G170	500	$75.00

Note: G170 option for Radio Trace/Remote Monitor is not compatible with W3 Control Head end G474 (Multi-Radio).
For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you muet order mic option G787.
For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.

ENH: SMARTZONE OMNILINK	G173	500	$200.00

Automatic Zoning Across Zones, Zone Registration, Trespass Protection, Over the Air Site Alias, 32 Preferred Sites, FastStart and AllStart Call Setup.

ENH: ASTRO PROJECT 25 TRUNKING SOFTWARE	G361	500	$300.00

When ordering this option G51 & G806 MUST be ordered. G173 is included at "NO CHARGE".

ADD: CONVENTIONAL VOTING SCAN ASTRO	G387	500	$200.00

This feature allows for voting of the Conventional Channels ONLY.

ADD: TRUNKED ONE TOUCH BUTTON	G683	500	$150.00
ENH: OVER THE AIR PROGRAMMING	G996	518	$100.00

Compatible with P25 Trunking only. Requires W947 Data option. To do in field POP25 programming must use Advenced System Key (DVN4046A)

Encryption Hardware and Software

Description	Nomenclature	APC	Price
ADD: ENCRYPTION UCM	G159	500	$150.00

REQUIRED for ANY encryption combination of Hardware Based Algorithms.
Not Compatible with G193.
CUSTOMERS USING THE FOLLOWING FREQUENCIES MUST ADD FREE OPTION "QA00351AA" (ENH: UCM SP TRIGGER) due to a known Self Quiting issue for radios with the standard UCM.
UHF SELF-QUIETING SPURS:

UHF RANGE 1 FREQUENCIES:
383.975 MHz
393.2125 MHz
395.975 MHz
432 MHz
458 MHz

UHF RANGE 2 FREQUENCIES:
458 MHz
479.975 MHz
480 MHz

ADD: KEY RETENTION 30 SECONDS	G336	500	$50.00
G159 REQUIRED			
ADD: MULTIPLE KEY ENCRYPTION OPERATION	W969	500	$330.00
REQUIRED when using more then one encryption algorithm or encryption key.			
ENH: CONVENTIONAL TACTICAL REKEY WITH MULTIKEY	H04	514	$350.00
Must Order IV&D(Q947)			

Encryption Algorithms

Description	Nomenclature	APC	Price
ADD: ADP ENCRYPTION	G113	526	$349.00
REQUIRES G159. INCLUDES W969 Multikey. ORDER G194 if need ADP with DES/DES-XL-DES-OFB. NOT AVAILABLE with 3600 Trunking and Analog Conventional software Packages. COMPATIBLE with: G381 P25 software package; and G48, G50, and G51 software packages when used with the G806 in the Digital Conventional mode ONLY.			
Description	**Nomenclature**	**APC**	**Price**
ADD: ADP SOFTWARE DSP BASED CRYPTO	G193	500	$10.00
REQUIRES: G806 Digital Operation DOES NOT REQUIRE: G159 UCM or G77/G78 Encryption Werranty. Use standard warranty options if needed. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G808 in the Digital Conventional mode ONLY. .Includes 8 non-Indexing encryption keys..			
Description	**Nomenclature**	**APC**	**Price**
AES ENCRYPTION-UCM	G843	412	$625.00
AES operates in digital mode only. NOT compatible with G241 ENH: SOFTWARE ASTRO READY ANALOG			
Description	**Nomenclature**	**APC**	**Price**
ADD: DES, DES-XL, DES-OFB ENCRYPTION - UCM	G625	412	$749.00
The Multikey (W969) or OTAR (G298) are only required when more than 1 key or 1 algorithm is programmed.			
Description	**Nomenclature**	**APC**	**Price**
ADD: DVI-XL ENCRYPTION	W793	500	$520.00
G159 is REQUIRED when ORDERING			
Description	**Nomenclature**	**APC**	**Price**
ADD: DVP-XL ENCRYPTION	W797	500	$487.00
G159 is REQUIRED when ORDERING			

Packet Data Interface/Data Cables

Description	Nomenclature	APC	Price
ADD: RS232 & IV&D PACKET DATA INTERFACE	W947	500	$200.00
This option is ONLY Operational on Digital Trunking and Digital Conventional systems!! INCLUDES the DLM Application. This option does not include Cables. G303 or G304 should be ordered separately.			
ADD: RS232 DATA INTFC CABLE-DASH	G303	500	$50.00
8 FT RS232 DATA CABLE Corresponding kit: HKN8160A.			
RS232 DATA INTFC CABLE-TRUNK	G304	500	$50.00
20 FT RS232 DATA CABLE Corresponding kit: HKN8181A.			
USB DATA INTFC CABLE-DASH	G308	500	$50.00
6 FT USB W/IGNITION SENSE			

Corresponding kit: HKN6163B. USB DATA INTFC CABLE-TRUNK 16.5 FT USB W/IGNITION SENSE Corresponding kit: HKN6172B.	G309	500	$50.00

Frequency and Squelch Codes

Description	Nomenclature	APC	Price
ENH: FACTORY PROGRAMMING	W844	500	$0.00

Test Results

Description	Nomenclature	APC	Price
ADD: PRINTED TEST RESULTS	G799	500	$0.00

Amplifier ***(***UHF and VHF Mid and High Power Radios Only***)***

Description	Nomenclature	APC	Price
ADD: RF PRE-AMPLIFIER	W12	585	$66.00

Mounting Lock

Description	Nomenclature	APC	Price
ADD: KEY LOCK MOUNT	W81	500	$33.00

Service (All service options are NOT applicable to Asia Pac)

REPAIR SERVICE ADVANTAGE
Provides for extended hardware repair coverage beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$64.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 3 YR CANADA EXTND WRNTY XTL	GA00313	386	$177.00
ENH: 5 YR CANADA EXTND WRNTY XTL	GA00316	386	$240.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$246.00

REPAIR SERVICE ADVANTAGE (ENCRYPTED)
Provides for extended hardware repair coverage, including encryption, beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G77	185	$72.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G78	185	$137.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	GA00232	185	$205.00
ENH: 3 YR CANADA ENCR EXT WRNTY XTL	GA00314	386	$181.00
ENH: 5 YR CANADA ENCR EXT WRNTY XTL	GA00317	386	$244.00

REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola

portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00
ENH: 3 YEAR ENCRYPTED RSA (COMPREHENSIVE)	GA00255AA	185	$302.00

Section C: Optional DEK / Footswitch / Pushbutton Features

Auxiliary Switches DEK

******Only One Auxiliary Switch DEK option can be supported per radio. Therefore, if the W591 is desired on a dual configuration, then the Qty will ALWAYS be equal to the main line item Qty.******

Description	Nomenclature	APC	Price
ADD: AUXILIARY SWITCH PANEL	W591	500	$165.00

Corresponding kit: HLN1196.
G67 REQUIRED. NOT compatible with W3 control heed or motorcycle.

Alarm

******Only One Alarm Relay Cable option can be supported per radio. Therefore, if the W116 is desired on a dual configuration, then the Qty will ALWAYS be equal to the main line item Qty.******

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAYS AND CABLE	W116	500	$75.00

For either HORN or LIGHTS. NOT both

Emergency Footswitch / Pushbutton

******The Emergency Footswitch/Pushbutton configuration must be equal at each control heed. Therefore, if the W470 is desired on a dual control configuration, then the Qty of W470 must be equal to 2x (double) the main line Qty.******

Description	Nomenclature	APC	Price
ADD: EXTERNAL EMERGENCY FOOTSWITCH	W470	500	$56.00

Corresponding kit: HLN5113.

ADD: EXT EMERGENCY PUSHBUTTON	W688	500	$56.00

Corresponding kit: HLN5131

Section D: Aftermarket Accessories

Please refer to the standard XTL 2500 Price Page for complete list of Aftermarket Accessories

ASTRO Digital XTL 2500 700/800 MHz

ASTRO Digital XTL 2500 UHF R1 Mid-Power

ASTRO Digital XTL 2500 UHF R2 Mid-Power

ASTRO Digital XTL 2500 VHF Mid-Power

ASTRO Digital XTL 2500 UHF R1 High-Power

ASTRO Digital XTL 2500 VHF High-Power

Section E: Dual Control Head / Remote Control Head Replacement Retrofit Kit

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION.

Dual Control Head / Remote Control Head Replacement Retrofit Kit

The XTL 2500 M5 Dual Control Head Retrofit (also Remote Control Head Replacement) provides / requires the following:

- QTY 1: **REMOTE** mount control head assembly that includes a control head + flex cable + control head interface board rear housing (CHIB)
- Qty 1: Remote Control Head Power cable (HKN6188)
- Qty 1: Remote Control Head Mounting trunion and hardware
- Qty 1: Manual CD and dust cover kit
- OPTION: Must select a microphone option
- OPTION: Must select a speaker option
- OPTION: Must select a remote cable option

*** IF YOU ARE ADDING A CONTROL HEAD TO CONVERT A SINGLE CONTROL REMOTE MOUNT RADIO TO A DUAL CONTROL, THEN YOU MUST MAKE SURE THE RADIO HAD VERSION 6.9 SOFTWARE OR GREATER.

THE ALLIED SALES MODEL BELOW DOES NOT INCLUDE A FLASH FIRMWARE REFRESH. PLEASE SEE THE SUBSCRIBER FLASHPORT SOFTWARE UPGRADE PRICE PAGE ***

Description	Nomenclature	APC	Price
M5 REMOTE CTRL HD/CHIB REPLACEMENT / ADDITION	H1827	514	$570.00

Microphones

(Must Select One and Only One)

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.	G90	500	$0.00
ADD: PALM MICROPHONE Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090	W22	500	$72.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requiree G170 softwere option.	W20	514	$180.00

Required for Emergency Hot Mic Operation.
Corresponding kit: HMN4079

Speakers ***(Must Select One)***

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$60.00
ADD: INCREASED AUDIO POWER 13W Corresponding kit: HSN4032. NOT COMPATIBLE with W665 Control Station and Motorcycle Configuration.	W432	500	$71.50

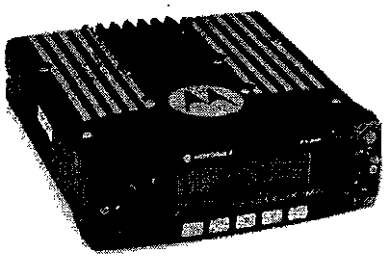
Remote Mount Cables

***** For Dual configurations, the total cable length may NOT be greater that 132 ft (40 meters) *****

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00

Data Compiled 16-May-2013 using DUP and all prices in USD



ASTRO® Digital XTL 2500 Mobile UHF 380-470 MHz Band

Secure and Trunked Radio Systems

Ship Card

General Information

The XTL 2500 Mobile Line offers 1 radio hardware model:

Hardware Mode	Modes	Alphanumeric Display
		Lines/Characters
		per Line
CH	1000	4/14

OPERATING MODES

XTL 2500 Radio Models are capable of operating in three different voice communication modes:

- normal analog (clear voice)
- 3.6kb ASTRO Digital (both clear and coded voice)
- 9.6KB ASTRO Digital (both clear and coded voice)

The mode of operation is programmed on a channel-by-channel basis. The XTL 2500 is capable of transmitting clear analog voice or clear (unencrypted) ASTRO digital voice, depending on the channel programming. XTL 2500 radio functions include ASTRO Digital signaling and digital coding.

Please note that XTL radios do NOT support FRED.

Each hardware model must be ordered with 1 of the System Enhancement Software Package options.
The matrix below indicates standard Trunking features for SmartZone (G51) System Packages. SmartZone features listed in the lower matrix are available in the (G51) package only. Radio Wide Features and Standard Conventional Features are listed above. System Enhancement Options can be added to the packages shown below. Refer to the System Enhancement Options for compatibility.

COMMON SOFTWARE FEATURES SUPPORTED BY			
G51 "SmartZone®"			
	"Analog Operation"(G241)	"ASTRO Digital"(G806)	"ASTRO Digital" (G51/G806/G361)
		Non-Project 25	Project 25
		(3600 Baud)	(9600 Baud)
RADIO WIDE FEATURES			
Maximum Modes			
XTL 2500 Control Head	1000	1000	1000
Analog and Digital Operation	-	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes
ADP Encryption	No	Yes	Yes
Encryption Capable	Yes	Yes	Yes
One Touch Operation	Yes	Yes	Yes

Radio Wide Transmit Inhibit	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES			
Conventional Features are additional radio wide features beyond those specified in the APCO Project 25 documents.			
CSQ/PL/DPL	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes
Monitor	Yes	Yes	Yes
DTMF Tone Generation	Future	Future	Future
MPL	Future	N/A	N/A
MDC PTT ID	Yes	Yes	Yes
MDC Selective Radio Inhibit (Decode Only)	Yes	Yes	Yes
MDC Call Alert (Encode/Decode)	Yes	Yes	Yes
MDC Radio Check (Decode Only)	Yes	Yes	Yes
MDC Voice Selective Call (Encode/Decode)	Yes	Yes	Yes
MDC Remote Monitor (Decode Only)	Yes	Yes	Yes
MDC Call Lists (Call Alert/Select Call)	Yes	Yes	Yes
MDC Emergency	Yes	Yes	Yes
MDC Silent Emergency (Encode)	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES			
These features are APCO Project 25 Interoperable Features when used in the ASTRO Digital CAI Mode (G806)			
Unaddressed Voice Call	-	Yes	Yes
Talk Group Call	-	Yes	Yes
Group Call Alert™	-	Yes	Yes
Talk Group Identification (TGID)	-	Yes	Yes
Selective Call (Individual Voice Call)	-	Yes	Yes
Selective Call Decode (Individual Voice Call)	-	Yes	Yes
PTT ID (Individual Identification)	-	Yes	Yes
Call Alert Encode/Decode	-	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	-	Yes	Yes
Telephone Interconnect	-	Yes	Yes
Unlimited	-	Yes	Yes
Selective Radio Inhibit	-	Yes	Yes
Radio Check	-	Yes	Yes
Status/Message	-	Yes	Yes
Trunking Type II Only Features			
Maximum Number of Trunked Systems-20			
Talkgroup Calls	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes
Dual Mode Scan	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes

Dynamic Regrouping	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only
Dispatcher Interrupt	No	No	No
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes
Radio Trace	Yes	Yes	No
Reprogram Request	Yes	Yes	Yes

Each hardware model must be ordered with 1 of the System Enhancement Software Package options, Conventional or SmartZone.

SOFTWARE FEATURES SUPPORTED BY G51 "SmartZone®"			
	"Analog Operation" (G241)	"ASTRO Digital" (G806)	"ASTRO Digital" (G51/G806/G361)
		Non-Project 25	Project 25
		(3600 Baud)	(9600 Baud)
Trunking Type II Only Features			
Voice on Control	Future	Future	Yes
SmartZone Automatic Site Registration	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes
SmartZone Busy Override	No	No	No
SmartZone Preferred Site	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the XTL 2500 Mobile Radio Series. Separation of frequencies can be as wide as the allowable sub-band

per radio model with no degradation of any performance specifications. **If an incorrect antenna is used, degraded performance may be experienced.**

COMMON AIR INTERFACE

Conventional channels are P25 compliant with the ASTRO Digital CAI Operation Software (G806). ASTRO P25 Trunking Software (G361) **must** be added for P25 compliance in trunked systems.

PROJECT 25 ENCRYPTION

When ordering any of the Encryption Algorithm:

- **MUST** order the Encryption UCM Hardware (G159)
- ADP Privacy not supported by OTAR. ADP is digital P25 conventional / P25 trunking only.
- The DES-OFB and AES-OFB Encryption offered is compliant with Project 25 standards and does not support analog encryption operation.
    - REQUIRES the ASTRO Digital CAI (G806) to operate the DES-OFB or AES-OFB Encryption
- If ordering a non-OFB (XL version) Encryption:

- The non-OFB encryption (XL versions) can be operated in either analog or CAI digital mode but will not be Project 25 compliant.

- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

- Encryption UCM Hardware (G159) module may be ordered without an Encryption Algorithm for later upgrade in the field.

FIELD INSTALLED PROJECT 25 ENCRYPTION

The DES-OFB and AES-OFB Encryption offered is compliant with Project 25 standards. Operation of DES-OFB and/or AES-OFB encryption requires the ASTRO Digital CAI (G806). Radios can be upgraded via FLASHport to CAI operation.

- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

FIPS 140-2 COMPLIANCE

Encryption Modules equipped with AES are FIPS 140-2 compliant. ADP Privacy is not FIPS compliant. Further information regarding FIPS 140-2 certification may be found using the following links:

FIPS 140-2 Crypto Module Validation Program (CMVP)

NIST Cryptographic Module Validation Lists

Self-Quieting Spurs Frequency (MHz)

UHF R1 384MHz and 435.2MHz

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on APX 7000 Dual Display Portable radios. Advanced Messaging is NOT supported on APX 7000 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for APX Mobiles Require: (Note: some control heads are not available on all main models)

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- P25 Conventional (G48)
- Packet Data Interface (W947)

OR

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking Software (G361)

- Packet Data Interface (W947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

FCC Information

Band/Model	Power Output	Transmitter Certification (Type Acceptance)	Emissions	Applicable Rules
380-470 MHz	10 - 40 Watts	AZ492FT4862	8K10F1D, 8K10F1E, 11K0F3E, 16K0F3E, 20K0F1E, 20K0F1D	22, 74, 90

- Except for Itinerant and low-power incident channels.

** Itinerant & Low-Power Incident Channels	
Channel Number	Frequency Range (MHz)

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

Ç Canada personnel refer to Section A under CANADA ONLY information.

Guideline

This price page consists of the following sections:

A. Required Main Models and Options for standard operation (Steps 1-9)

B. Control Station

C. Optional Features

D. Aftermarket Accessories

Section A: Required Main Model and Options

For standard Radio Operation **Steps 1 - 9** **must be** selected.

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

1: Main Model ***(Must Select)***

Description	Nomenclature	APC	Price
XTL 2500 UHF R1 380-470MHZ, 10-40 W	M21QSM9PW1 N	518	$1,497.00

2: Operation Mode *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: SOFTWARE ASTRO READY ANALOG	G241	500	$0.00
NOT COMPATIBLE with Encryption Algorithm W888, W793, W797, G298, G851, or G843 when combined with a Trunking Software Option. DES-OFB is not operational in Analog Operation.			
ENH: XTL SOFTWARE ASTRO DIGITAL CAI OPERATION	G806	514	$515.00

3: System Enhancement Software *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: CONVENTIONAL OPERATION	G48	514	$275.00
ENH: SOFTWARE SMARTZONE/SINGLETONE	G51	514	$975.00

3b: Optional System Enhancement Software *(Not Required)*

Description	Nomenclature	APC	Price
ENH: SMARTZONE OMNILNK MULTZONE SYSTEM SW	G173	656	$200.00
Automatic Zoning Across Zones, Zone Registration, Trespass Protection, Over the Air Site Alias, 32 Preferred Sites, FastStart and AllStart Call Setup.			
ADD: P25 TRUNKING SOFTWARE	G361	656	$300.00
When ordering this option G51 & G808 MUST be ordered. G173 is included at "NO CHARGE".			

4: Control Head Hardware *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: XTL2500 CONTROL HEAD	G442	514	$292.00
ADD: NO CONTROL HEAD NEEDED	G88	500	$0.00
Requires remote mounting option (G67 or G655)			

5: Control Head Software *(Must Always Select G444)*

Description	Nomenclature	APC	Price
ADD: ADD: CONTROL HEAD SOFTWARE	G444	514	$0.00
MUST ALWAYS SELECT THIS OPTION			

6: Mounting *(Must Select One)*

If a remote mount cable other than 5 meters (17ft) is desired for the G67, please reference the "Remote Mount Cables" section below in Section C: Optional Features*

Description	Nomenclature	APC	Price
ADD: DASH MOUNT	G66	500	$125.00
Required for Control Station Operation			
ADD: REMOTE MOUNT	G67	500	$297.00
Required for Dual Control and High Power Radios			

7: Antenna *(Must Select One)*

Description	Nomenclature	APC	Price
ANTENNA 1/4 WAVE WHIP 380-433 MHZ	G425	585	$25.00
Not Compatible with Motorcycle Corresponding kit: HAE8012 **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.**			
ANTENNA 1/4 WAVE WHIP 450-470 MHZ	G426	585	$25.00
Not Compatible with Motorcycle Corresponding kit: HAE4003.			
ANTENNA 3.5DB 380-433 MHZ	G427	585	$55.00
Not Compatible with Motorcycle Corresponding kit: HAE6010.			
ANTENNA 3.5DB 450-470MHZ	G428	585	$50.00
Not Compatible with Motorcycle Corresponding kit: HAE4011.			

ANTENNA 5.0 DB 380-433 MHZ Not Compatible with Motorcycle Corresponding kit: HAE6011.	G429	585	$62.00
ANTENNA 5.0 DB 450-470 MHZ Not Compatible with Motorcycle Corresponding kit: RAE4014ARB.	G430	585	$58.00
ANTENNA WIDEBAND 380-470 MHZ Not Compatible with Motorcycle Corresponding kit: HAE6013.	G431	585	$58.00
ADD: NO ANTENNA NEEDED	G89	500	$0.00

8: Microphones ***(Must Select One)***

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.	G90	500	$0.00
ADD: PALM MICROPHONE Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090	W22	500	$72.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079	W20	514	$180.00
ADD: HANDSET/HANGUP GCAI Coiled Cable with Toggle Switch Accessory Kit: HLN1457A	G874	514	$285.00
ADD: CONTROL STATION DESK MICROPHONE Dash Mount Required Corresponding Kit: RMN5070	W382	500	$169.00
ADD: MODEL III KEYPAD TELEPHONE HANDSET Corresponding kit: HMN4097A	GA00221	514	$295.00

9: Speakers ***(Must Select One)***

******G142 NO SPEAKER Required for Control Station******

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$60.00
ADD: INCREASED AUDIO POWER 13W Corresponding kit: HSN4032. NOT COMPATIBLE with W665 Control Station and Motorcycle Configuration.	W432	500	$71.50

Section B: Control Station

CONTROL STATION OPERATION

I. First, you must review your selection of the following options from "Section 1: Required Options".

- Step 1 *(Note: Main Model)*
- Step 2 *(Note: All listed options are compliant)*
- Step 3 *(Note: All listed options are compliant)*
- Step 4 *(Note: Must select G442. XTL 2500 Control Head is compatible with Control Station Application).*
- Step 5 *(Note: Must Select G444. The XTL 2500 Control Head Software is compatible with Control Station Application).*
- Step 6 *(Note: Must Select G66. Control Station operation is only offered in Dash mount configuration).*
- Step 7 *(Note: All listed options are compliant).*
- Step 8 *(Note: Select desired microphone option and if no microphone is needed, G90 must be selected).*
- Step 9 *(Note: Must Select G142 - No Speeker Needed).*

II. You Must Select ONE of the Following "Specific Control Station Options":

SPECIFIC CONTROL STATION OPTIONS

Control Station Operation and Power Supply ***(Must Select BOTH)***

Description	Nomenclature	APC	Price
ADD: CONTROL STATION POWER SUPPLY	G91	500	$269.00
Corresponding kit: HPN4007			
ADD: CONTROL STATION OPERATION	W665	500	$70.00
For DASH MOUNT radios ONLY (G88)!! Not compatible with W3, or W9 control head options. G885 includes a base tray and a speaker; therefore G142 has to be ordered to eliminate extra Speaker. Requires a Power Supply (G91 can be ordered as a Power Supply). Requires one of the Microphone Options: G90, W22 or W382. Corresponding kit: HLN6042			

III. ~~Features listed in "Section C. Optional Features" are optional, if applicable. Please read the option's description to determine~~ compatibility.

Section C: Optional Features

The following features are **optional** and will provide additional capabilities, if required.

System Enhancement Options

Description	Nomenclature	APC	Price
ENH: ENHANCED DIGITAL ID DISPLAY	G114	500	$75.00
8 numeric character unit to unit display. NOTE: This option is required to display Radio ID or Radio Alias on the display for analog and digital conventional and trunking configurations.			
ENH: RADIO TRACE AND REMOTE MONITOR	G170	500	$75.00
Note: G170 option for Radio Trace/Remote Monitor is not compatible with W3 Control Head and G474 (Multi-Radio). For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ADD: CONVENTIONAL VOTING SCAN ASTRO	G387	500	$200.00
This feature allows for voting of the Conventional Channels ONLY.			
ADD: TRUNKED ONE TOUCH BUTTON	G683	500	$150.00
ENH: OVER THE AIR PROGRAMMING	G996	518	$100.00
Compatible with P25 Trunking only. Requires W947 Data option. To do in field POP25 programming must use Advanced System Key (DVN4046A)			
ADD: XTL2500 RADIO AUTHENTICATION	W391	514	$100.00

Encryption Hardware and Software

Description	Nomenclature	APC	Price
ADD: ENCRYPTION UCM	G159	500	$150.00
REQUIRED for ANY encryption combination of Hardware Based Algorithms. Not Compatible with G193. CUSTOMERS USING THE FOLLOWING FREQUENCIES MUST ADD FREE OPTION "QA00351AA" (ENH: UCM SP TRIGGER) due to a known Self Quiting issue for radios with the standard UCM. UHF SELF-QUIETING SPURS: UHF RANGE 1 FREQUENCIES: 383.975 MHz 383.2125 MHz 395.975 MHz 432 MHz 458 MHz UHF RANGE 2 FREQUENCIES: 458 MHz 479.975 MHz 480 MHz			
ADD: KEY RETENTION 30 SECONDS	G336	500	$50.00
G159 REQUIRED			
ADD: MULTIPLE KEY ENCRYPTION OPERATION	W969	500	$330.00

REQUIRED when using more than one encryption algorithm or encryption key.

ENH: CONVENTIONAL TACTICAL REKEY WITH MULTIKEY	H04	514	$350.00

Must Order IV&D(Q947)

Encryption Algorithms

Description	Nomenclature	APC	Price
ADD: ADP ENCRYPTION	G113	526	$349.00

REQUIRES G159. INCLUDES W989 Multikey. ORDER G194 if need ADP with DES/DES-XL-DES-OFB. NOT AVAILABLE with 3600 Trunking and Analog Conventional software Packages. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G808 in the Digital Conventional mode ONLY.

Description	Nomenclature	APC	Price
ADD: ADP SOFTWARE DSP BASED CRYPTO	G193	500	$10.00

REQUIRES: G808 Digital Operation
DOES NOT REQUIRE: G159 UCM or G77/G78 Encryption Warranty. Use standard warranty options if needed.
COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G808 in the Digital Conventional mode ONLY. .Includes 8 non-indexing encryption keys..

Description	Nomenclature	APC	Price
AES ENCRYPTION-UCM	G843	412	$625.00

AES operates in digital mode only.
NOT compatible with G241 ENH: SOFTWARE ASTRO READY ANALOG

Description	Nomenclature	APC	Price
ADD: DES, DES-XL, DES-OFB ENCRYPTION - UCM	G625	412	$749.00

The Multikey (W989) or OTAR (G298) are only required when more than 1 key or 1 algorithm is programmed.

Description	Nomenclature	APC	Price
ADD: DVI-XL ENCRYPTION	W793	500	$520.00

G159 is REQUIRED when ORDERING

Description	Nomenclature	APC	Price
ADD: DVP-XL ENCRYPTION	W797	500	$487.00

G159 is REQUIRED when ORDERING

Remote Mount Cables

******The 5 meter (17 FT) Cable Ships Standard******

Description	Nomenclature	APC	Price
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT)	G582	514	$65.00

For Duel/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio
Corresponding kit: HKN6184

ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT)	G607	514	$45.00

Corresponding kit: HKN6186A

ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT)	G609	514	$35.00

Corresponding kit: HKN6187

ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT)	G610	514	$25.00

Corresponding kit: HKN6188

ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT)	G879	514	$55.00

Corresponding kit: HKN6185

ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT)	G818	514	$10.00

Corresponding kit: HKN6170

DEK

Description	Nomenclature	APC	Price
ADD: STATUS MESSAGE 8 MESSAGES	W355	500	$475.00

NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Desh Mount configuration. Requires Remote Mount configuration.
CORRESPONDING KIT: H1838A

ADD: DDE STATUS MESSAGES 16	W374	500	$650.00

NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Desh Mount configuration. Requires Remote Mount configuration.
CORRESPONDING KIT: H1839A

Direct Mode Entry

Description	Nomenclature	APC	Price
ADD: 8 MODE DIRECT ENTRY ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1835A	W599	500	$180.00
ADD: 16 MODE DIRECT ENTRY ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1836A	W614	500	$360.00
ADD: 24 MODE DIRECT ENTRY NOT COMPATIBLE with W269 Siren/PA. 9600 Systems offer ONLY "Status" and not "Message". ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1637A	W615	500	$540.00

WHELEN SIREN (MOTOROLA COMPATIBLE)

NOTE: THE NEW SIREN IS COMPATIBLE WITH APX AND XTL MOBILES WITH "O" SERIES OR M5 CONTROL HEADS ONLY. THIS SIREN IS NOT COMPATIBLE WITH ANY "W" SERIES CONTROL HEADS

~~THE SIREN BASE MODEL TT2592, CABLE TT05707 AND THE SIREN MOUNTING HARDWARE TT0507 MUST ALWAYS BE~~ ORDERED (THIS SIREN IS ORDERED AS A SEPARATE LINE ITEM, TT2592 IS THE MODEL)

DEK OPTIONS ARE AVAILABLE AS OPTIONS TO THE SUBSCRIBER AS SHOWN BELOW

Description	Nomenclature	APC	Price
WHELEN/MOTOROLA SIREN	TT2592	656	$395.00
SIREN HARDWARE INSTALL KIT	TT05707AA	656	$20.00
SIREN TO RADIO CABLE	TT05708AA	656	$65.00
SIREN TO DEK CABLE - O3 CONTROL HEAD ONLY	TT05709AA	656	$78.00

SIREN DEK OPTIONS

ADD: DEK FOR WHELEN SIREN W/ O3 CH ONLY	GA00812	656	$105.00
ADD: DEK FOR WHELEN SIREN	GA00814	656	$105.00

Auxiliary Switches

Description	Nomenclature	APC	Price
ADD: AUXILIARY SWITCH PANEL Corresponding kit: HLN1196. G67 REQUIRED. NOT compatible with W3 control head or motorcycle.	W591	500	$165.00

Alarm

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAYS AND CABLE For either HORN or LIGHTS. NOT both	W116	500	$75.00

Emergency

Description	Nomenclature	APC	Price
ADD: PTT FOOTSWITCH Requires W672 Visor Mic. Kit Number: GLN7278B	G235	514	$51.00
ADD: EXT EMERGENCY PUSHBUTTON Corresponding kit: HLN5131	W688	500	$56.00

Frequency and Squelch Codes

Description	Nomenclature	APC	Price
ENH: FACTORY PROGRAMMING	W844	500	$0.00

Packet Data Interface / Data Cables

Description	Nomenclature	APC	Price
ADD: RS232 DATA INTFC CABLE-DASH	G303	500	$50.00

6 FT RS232 DATA CABLE Corresponding kit: HKN6160A.			
RS232 DATA INTFC CABLE-TRUNK	G304	500	$50.00
20 FT RS232 DATA CABLE Corresponding kit: HKN6161A.			
ADD: RS232 & IV&D PACKET DATA INTERFACE	W947	500	$200.00
This option is ONLY Operational on Digital Trunking and Digital Conventional systems!! INCLUDES the DLM Application. This option does not include Cables. G303 or G304 should be ordered seperately.			
USB DATA INTFC CABLE-DASH	G308	500	$50.00
6 FT USB W/IGNITION SENSE Corresponding kit: HKN6163B.			

RF Modem

******Supported for 9600 Trunking only******

Description	Nomenclature	APC	Price
ENH: ENABLE RF MODEM	G319	500	$0.00
The XTL mobiles do not support Site Lens or System Watch. Therefore, the APX RF Modem function does not support the legacy System Watch or Site Lens applications. The APX RF Modem supports Conventional or 9600 Trunking only. Enabling the RF Modem in conventional mode allows provisioned APX portables to pass accountability data through the portable option Q445.			

Service (These Service options are NOT applicable for Asia Pac)

REPAIR SERVICE ADVANTAGE

Provides for extended hardware repair coverage beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$64.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$246.00
ENH: 3 YR CANADA EXTND WRNTY XTL	GA00313	386	$177.00
ENH: 5 YR CANADA EXTND WRNTY XTL	GA00316	386	$240.00

REPAIR SERVICE ADVANTAGE (ENCRYPTED)

Provides for extended hardware repair coverage, including encryption, beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G77	185	$72.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G78	185	$137.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	GA00232	185	$205.00
ENH: 3 YR CANADA ENCR EXT WRNTY XTL	GA00314	386	$181.00
ENH: 5 YR CANADA ENCR EXT WRNTY XTL	GA00317	386	$244.00

REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)

Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00
ENH: 3 YEAR ENCRYPTED RSA (COMPREHENSIVE)	GA00255AA	185	$302.00

Test Results

Description	Nomenclature	APC	Price
ADD: PRINTED TEST RESULTS	G799	500	$0.00

Amplifier

UHF and VHF Mid and High Power Radios Only

Description	Nomenclature	APC	Price
ADD: RF PRE-AMPLIFIER	W12	585	$66.00

Miscellaneous

Description	Nomenclature	APC	Price
ADD: KEY LOCK MOUNT	W81	500	$33.00

Section D: Aftermarket Accessories

Algorithm Kits

Description	Nomenclature	APC	Price
XTL5000 AES256, ADP	NNTN8328A	585	$997.00
XTL5000 DES-XL, DES-OFB, ADP	NNTN8327A	585	$998.00
XTL5000 DES-XL, DES-OFB, AES256, AD	NNTN8326A	585	$1,499.00
XTL5000 AES256	NNTN8331A	456	$795.00
XTL5000 DVP-XL	NNTN8323A	585	$715.00
XTL5000 DES-XL, DES-OFB	NNTN8335A	585	$840.00

Antennas

Description	Nomenclature	APC	Price
ANTENNA, UHF (450-470 MHZ) 1/4 WAVE ROOF MOUNT	HAE4003	554	$21.50
Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: Unity, VSWR: Less than 2:1, Impedance: 50 Ohms, nominal			
ANTENNA UHF (445-470 MHZ) 3.5DB GAIN ROOF MOUNT	HAE4011	554	$77.50
Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedance: 50 Ohms, nominal.			
ANTENNA UHF (380-433 MHZ) 3.5DB GAIN	HAE6010	476	$63.00
ANTENNA UHF (445-470 MHZ) 5DB GAIN	RAE4014ARB	554	$110.00
Roof Mount, SPECTRUM Base Loaded 5 dB Gain Antenna, Cable: RG58 A/U, Rugged Duty, Mini UHF connector.			
ANTENNA 1/4 WAVE WHIP 380-433 MHZ	HAE6012	585	$23.00
ANTENNA UHF (380-433 MHZ) 5DB GAIN	HAE6011	585	$63.00
ANTENNA WIDEBAND 2.0DB GAIN 380-470 MHZ	HAE6013	585	$55.00

Cable (s)

AUDIO CABLE ADAPTER	HKN6158	500	$49.00
ADAPTER CABLE DATA	HKN6159	500	$49.00

Cables (Remote Mount)

CABLE, REMOTE MOUNT, 75 FT	HKN6166	514	$80.00
CABLE, REMOTE MOUNT, 115 FT	HKN6165	514	$105.00
CABLE,REMOTE MOUNT,131 FT	HKN6164	514	$122.00

Control Station

Description	Nomenclature	APC	Price
MOBILE DESK TRAY	HLN6042	617	$77.00
PS 14V 10A 117/240 VAC.	HPN4007C	500	$296.00

Customer Programming Service

Data

CABLE KIT 20' DATA RS232 Data Interface Cable - REMOTE	HKN6161	476	$50.00

Manuals

Description	Nomenclature	APC	Price
XTL 2500 M5 MANUAL	HLN1460D	514	$12.00

Microphones

HANDSET/HANGUP (HANGUP CUP)	HLN1457	706	$285.00
MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	706	$295.00
XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00
AS. SPECTRA & XTL5000 DESKTOP MIC	RMN5070A	706	$172.00

Speakers

Description	Nomenclature	APC	Price
EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	HSN4038	476	$60.50
MCS EXT SPKR 13W	HSN4032B	500	$71.50

Bull Horns for Sirens and Public Address

Description	Nomenclature	APC	Price
SPEAKER SIREN, ROUND W/CHROME & BLACK	TDN6251	706	$329.00
SPEAKER RECTANGULAR WITH CHROME FINISH	TDN6252	706	$265.00
SPEAKER UNDERHOOD WITH GRAY FINISH	TDN8253	706	$220.00
SPEAKER ROUND WITH GRAY FINISH	TDN6254	706	$248.00

Miscellaneous

Description	Nomenclature	APC	Price
WILDCARD	HLN1196	412	$165.00
AUXILIARY SWITCH PANEL (W591-W9)	HLN1342	617	$165.00

Section E: Vehicle Location Solution

Vehicle Location Solution

Vehicle location or GPS is now available on the ASTRO 25 XTL 2500 mobile radio.

The TrimFleet ™ GPS mobile units provide a versatile and economical platform for mobile positioning applications. Using state-of-the-art GPS receiver technology, the TrimFleet GPS receiver unit has been optimized for vehicle installation and operation, providing reliable

vehicle position, direction, speed, time and status in any weather, anywhere in the world.

The TrimFleet receiver contains a 12-channel GPS module and an (optional) angular rate sensor module. The TrimFleet receiver connects directly to in-vehicle laptops/workstations as well as VRM and XTL radios. The TrimFleet GPS receiver outputs positions when in GPS coverage via either of its RS-232C serial ports in National Marine Electronics Association Protocol (NMEA), Trimble ASCII Interface Protocol (TAIP) and Point to Point Protocol (PPP) formats. The TrimFleet receiver may be configured to send the position data in either protocol via the two RS-232C data ports. Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

The TrimFleet DRU Plus may be equipped with an optional internal module to provide dead reckoned position data while outside of GPS coverage. This is accomplished through the use of advanced gyroscopic technology in combination with connections to the vehicle speed sensor and vehicle direction signal (forward or reverse.) Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

I/O PORTS

The TrimFleet DRU Plus provides two RS232C compatible communication ports that may be connected to external devices. One port provides a DE-9 female DCE connection, and the other port provides a DE-9 female DTE connection. The ports may be configured individually for baud rates between 110 and 115.2K baud. Both ports support NMEA and TAIP protocols. The default configuration for both ports is 9600 baud TAIP.

Also provided is support for PPP over RS232C on Port 1. An IP capable XTL 2500 radio may be interfaced to the port to allow wireless transmission of TAIP messages to an AVL server. The TAIP messages will be encapsulated in UDP packets and sent to a configurable destination IP address and port. TAIP messages may also be sent back to the TrimFleet DRU Plus by the AVL application to modify reporting rates and query current location or status.

Vehicle location is available only on ASTRO Conventional and Trunked IV&D Systems. Subscribers must have version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software.

Digital Conventional Ordering requirements for XTL 2500 Mobile:

- Requires Control Head (G442)
- ASTRO Digital CAI Operation (G806)
- Conventional Operation (G48)
- Packet Data Interface (W947)
- Mid Power RS232 Cable (G303 Dash / G304 Remote) *(Hooks to the J2 rectangular and DB9 connector)*
- High Power RS232 Cable (HKN6122) *(Hooks to the DB25 connector and the DB9 connector)*

P25 Trunking Ordering requirements for XTL 2500 Mobile:

- Requires Control Head (G442)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking 9600 Software (G361)
- Packet Data Interface (W947)
- Mid Power RS232 Cable (G303 Dash / G304 Remote) *(Hooks to the J2 rectangular and DB9 connector)*
- High Power RS232 Cable (HKN6122) *(Hooks to the DB25 connector and the DB9 connector)*

Description	Nomenclature	APC	Price
TRIMFLEET DRU PLUS (W/DR & POWER CABLE)	DDN9439	222	$745.00

Description	Nomenclature	APC	Price
TRIMFLEET APU (W/POWER CABLE)	DDN9440	222	$620.00

Description	Nomenclature	APC	Price
TRIMFLEET GPS ANTENNA WITH CABLE	DDN9474	222	$99.00

Section F: Retrofit Mounting Kits

PLEASE READ ALL ALLIED MODEL AND OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION.

Retrofit Mounting Kits

Remote to Dash

Converts an existing remote mounted XTL 2500 mobile radio to a dash mounted radio. Applicable to Low/Mid power models.

Description	Nomenclature	APC	Price
REMOTE TO DASH RETROFIT KIT FOR O5 OR XTL2500	H1817	514	$75.00
Contains dash mount headbridge hardware. Does not include transciever trunion. Does not include a control head.			

Dash to Remote

Converts an existing dash mounted XTL 2500 mobile radio to a remote mounted radio. Applicable to Low/Mid power models.

If you are retrofitting XTL 2500 radios that shipped AFTER 7/1/06, order H1818.

If you are retrofitting XTL 2500 radios that shipped BEFORE 7/1/06, order H1825.

Description	Nomenclature	APC	Price
O5/M5 DASH TO O5/M5 REMOTE RETROFIT KIT	H1818	514	$325.00
Contains rear housing for remote O5, O5 control head remote mounting hardware, remote O5 power cable, remote transciever faceplate. Remote cable available as option. Does not include transciever trunion. Does note include O5 control head.			

Remote Mount Cables

(Cable option is NOT required. If cable option is ordered, select ONLY one option.)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6168A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT) ***For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio*** Corresponding kit: HKN6164	G582	514	$65.00

Section G: Remote Control Head Replacement / Dual Control Head Retrofit Kit

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION.

Remote Control Head Replacement AND Dual Control Head Retrofit Kit

The XTL 2500 M5 Remote Control Head Replacement AND Dual Control Head Retrofit provides / requires the following:

- QTY 1: **REMOTE** mount control head assembly that includes a control head + flex cable + control head interface board rear housing (CHIB)
- Qty 1: Remote Control Head Power cable (HKN6188)
- Qty 1: Remote Control Head Mounting trunion and hardware
- Qty 1: Manual CD and dust cover kit
- OPTION: Must select a microphone option
- OPTION: Must select a speaker option
- OPTION: Must select a remote cable option

*** IF YOU ARE ADDING A CONTROL HEAD TO CONVERT A SINGLE CONTROL REMOTE MOUNT RADIO TO A DUAL CONTROL, THEN YOU MUST MAKE SURE THE RADIO HAD VERSION 6.9 SOFTWARE OR GREATER.

THE ALLIED SALES MODEL BELOW DOES NOT INCLUDE A FLASH FIRMWARE REFRESH. PLEASE SEE THE SUBSCRIBER FLASHPORT SOFTWARE UPGRADE PRICE PAGE ***

Description	Nomenclature	APC	Price
M5 REMOTE CTRL HD/CHIB REPLACEMENT / ADDITION	H1827	514	$570.00

Microphones

(Must Select One and Only One)

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED	G90	500	$0.00
Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ADD: PALM MICROPHONE	W22	500	$72.00
Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090			
ADD: KEYPAD MIC (GCAI)	W20	514	$180.00
Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079			

Speakers ***(Must Select One)***

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT	B18	500	$60.00
Corresponding kit: HSN4031.			
ADD: INCREASED AUDIO POWER 13W	W432	500	$71.50
Corresponding kit: HSN4032. NOT COMPATIBLE with W865 Control Station and Motorcycle Configuration.			

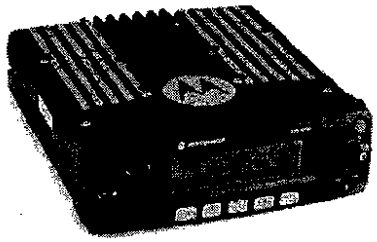
Remote Mount Cables

***** For Dual configurations, the total cable length may NOT be greater that 131 ft (40 meters) *****

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT) ***For Dual/Tri/Quad configurations, the total cable length may not be greeter that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control redio*** Corresponding kit: HKN6164	G582	514	$65.00

Data Compiled 16-May-2013 using DUP and all prices in USD



ASTRO® Digital XTL 2500 Mobile
UHF 380-470 MHz Band

Secure and Trunked Radio Systems

Ship Card

General Information

The XTL 2500 Mobile Line offers 1 radio hardware model:

Hardware Mode	Modes	Alphanumeric Display
		Lines/Characters
		per Line
CH	1000	4/14

OPERATING MODES

XTL 2500 Radio Models are capable of operating in three different voice communication modes:

- normal analog (clear voice)
- 3.6kb ASTRO Digital (both clear and coded voice)
- 9.6KB ASTRO Digital (both clear and coded voice)

The mode of operation is programmed on a channel-by-channel basis. The XTL 2500 is capable of transmitting clear analog voice or clear (unencrypted) ASTRO digital voice, depending on the channel programming. XTL 2500 radio functions include ASTRO Digital signaling and digital coding.

Please note that XTL radios do NOT support FRED.

Each hardware model must be ordered with 1 of the System Enhancement Software Package options.
The matrix below indicates standard Trunking features for SmartZone (G51) System Packages. SmartZone features listed in the lower matrix are available in the (G51) package only. Radio Wide Features and Standard Conventional Features are listed above. System Enhancement Options can be added to the packages shown below. Refer to tha System Enhancement Options for compatibility.

COMMON SOFTWARE FEATURES SUPPORTED BY G51 "SmartZone®"			
	"Analog Operation"(G241)	"ASTRO Digital"(G806)	"ASTRO Digital" (G51/G806/G361)
		Non-Project 25	Project 25
		(3600 Baud)	(9600 Baud)
RADIO WIDE FEATURES			
Maximum Modes			
XTL 2500 Control Head	1000	1000	1000
Analog and Digital Operation	-	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes
ADP Encryption	No	Yes	Yes
Encryption Capable	Yes	Yes	Yes
One Touch Operation	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes

FLASHport	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES			
Conventional Features are additional radio wide features beyond those specified in the APCO Project 25 documents.			
CSQ/PL/DPL	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes
Monitor	Yes	Yes	Yes
DTMF Tone Generation	Future	Future	Future
MPL	Future	N/A	N/A
MDC PTT ID	Yes	Yes	Yes
MDC Selective Radio Inhibit (Decode Only)	Yes	Yes	Yes
MDC Call Alert (Encode/Decode)	Yes	Yes	Yes
MDC Radio Check (Decode Only)	Yes	Yes	Yes
MDC Voice Selective Call (Encode/Decode)	Yes	Yes	Yes
MDC Remote Monitor (Decode Only)	Yes	Yes	Yes
MDC Call Lists (Call Alert/Select Call)	Yes	Yes	Yes
MDC Emergency	Yes	Yes	Yes
MDC Silent Emergency (Encode)	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES			
These features are APCO Project 25 Interoperable Features when used in the ASTRO Digital CAI Mode (G806)			
Unaddressed Voice Call	-	Yes	Yes
Talk Group Call	-	Yes	Yes
Group Call Alert™	-	Yes	Yes
Talk Group Identification (TGID)	-	Yes	Yes
Selective Call (Individual Voice Call)	-	Yes	Yes
Selective Call Decode (Individual Voice Call)	-	Yes	Yes
PTT ID (Individual Identification)	-	Yes	Yes
Call Alert Encode/Decode	-	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	-	Yes	Yes
Telephone Interconnect	-	Yes	Yes
Unlimited	-	Yes	Yes
Selective Radio Inhibit	-	Yes	Yes
Radio Check	-	Yes	Yes
Status/Message	-	Yes	Yes
Trunking Type II Only Features			
Maximum Number of Trunked Systems-20			
Talkgroup Calls	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes
Dual Mode Scan	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only
Dispatcher Interrupt	No	No	No
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes

Radio Trace	Yes	Yes	No
Reprogram Request	Yes	Yes	Yes

Each hardware model must be ordered with 1 of the System Enhancement Software Package options, Conventional or SmartZone.

SOFTWARE FEATURES SUPPORTED BY G51 "SmartZone®"			
	"Analog Operation" (G241)	"ASTRO Digital" (G806)	"ASTRO Digital" (G51/G806/G361)
		Non-Project 25	Project 25
		(3600 Baud)	(9600 Baud)
Trunking Type II Only Features			
Voice on Control	Future	Future	Yes
SmartZone Automatic Site Registration	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes
SmartZone Busy Override	No	No	No
SmartZone Preferred Site	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the XTL 2500 Mobile Radio Series. Separation of frequencies can be as wide as the allowable sub-band

per radio model with no degradation of any performance specifications. **If an incorrect antenna is used, degraded performance may be experienced.**

COMMON AIR INTERFACE

Conventional channels are P25 compliant with the ASTRO Digital CAI Operation Software (G806). ASTRO P25 Trunking Software (G361) must be added for P25 compliance in trunked systems.

PROJECT 25 ENCRYPTION

When ordering any of the Encryption Algorithm:

- **MUST** order the Encryption UCM Hardware (G159)
- ADP Privacy not supported by OTAR. ADP is digital P25 conventional / P25 trunking only.
- The DES-OFB and AES-OFB Encryption offered is compliant with Project 25 standards and does not support analog encryption operation.
    - REQUIRES the ASTRO Digital CAI (G806) to operate the DES-OFB or AES-OFB Encryption
- If ordering a non-OFB (XL version) Encryption:
    - The non-OFB encryption (XL versions) can be operated in either analog or CAI digital mode but will not be Project 25 compliant.
- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.
    - Encryption UCM Hardware (G159) module may be ordered without an Encryption Algorithm for later upgrade in the field.

FIELD INSTALLED PROJECT 25 ENCRYPTION

The DES-OFB and AES-OFB Encryption offered is compliant with Project 25 standards. Operation of DES-OFB and/or AES-OFB encryption requires the ASTRO Digital CAI (G806). Radios can be upgraded via FLASHport to CAI operation.

- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

FIPS 140-2 COMPLIANCE

Encryption Modules equipped with AES are FIPS 140-2 compliant. ADP Privacy is not FIPS compliant. Further information regarding FIPS 140-2 certification may be found using the following links:

FIPS 140-2 Crypto Module Validation Program (CMVP)

NIST Cryptographic Module Validation Liste

Self-Quieting Spurs Frequency (MHz)

UHF R1 384 MHz and 435.2 MHz

ASTRO Text Messaging Service

ASTRO Text Messaging Service is now available on ASTRO 25 XTS 5000, XTS 2500 Portable radios and ASTRO 25 XTL 5000, XTL 2500 Mobile radios. Text Messaging Service (TMS) allows subscriber users to send and receive text messages to other subscribers or dispatch operators. Users can select messages and addresses from a predefined list or enter freeform text messages and addresses via the keypad. Text Messaging Service is available on ASTRO Trunked IV&D Systems and Subscribers. Subscribers must have version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software.

For full Text Messaging functionality, including freeform text messaging and addressing, must Control Head with Keypad Microphone. Control Head without the Keypad Microphone supports Limited Text Messaging functionality such as selecting predefined messages or addresses from a list programmed in the radio.

Ordering requirements for XTL 2500 Mobile:

- Full functionality including free form messaging requires the Keypad Microphone (W20)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking 9600 Software (G361)
- Packet Data Interface (W947)

NOTE: There is no specific option to order for the Text Messaging Service on the subscribers as the functionality is included in the Packet Data option.

FCC Information

Band/Model	Power Output	Transmitter Certification (Type Acceptance)	Emissions	Applicable Rules
380-470 MHz	25 - 110 Watts	AZ492FT4870	8K10F1D, 8K10F1E, 11K0F3E, 16K0F3E, 20K0F1E, 20K0F1D	22, 74, 90

- Except for Itinerant and low-power incident channels.

** Itinerant & Low-Power Incident Channels	
Channel Number	Frequency Range (MHz)

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

Ç Canada personnel refer to Section A under CANADA ONLY Information.

Guideline

This price page consists of the following sections:

A. Required Main Models and Options for standard operation (Steps 1-9)

B. Optional Features

C. Aftermarket Accessories

Section A: Required Main Model and Options

For standard Radio Operation **Steps 1 - 9 must be** selected.

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

1: Main Model *(Must Select)*

Description	Nomenclature	APC	Price
UHF R1 380-470 MHZ 100 WATT	M21QTM9PW1 N	518	$1,997.00

2: Operation Mode *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: SOFTWARE ASTRO READY ANALOG NOT COMPATIBLE with Encryption Algorithm W969, W793, W797, G298, G851, or G843 when combined with a Trunking Software Option. DES-OFS is not operational in Analog Operation.	G241	500	$0.00
ENH: XTL SOFTWARE ASTRO DIGITAL CAI OPERATION	G806	514	$515.00

3: System Enhancement Software *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: CONVENTIONAL OPERATION	G48	514	$275.00
ENH: SOFTWARE SMARTZONE/SINGLETONE	G51	514	$975.00

3b: Optional System Enhancement Software *(Not Required)*

Description	Nomenclature	APC	Price
ENH: SMARTZONE OMNILNK MULTZONE SYSTEM SW Automatic Zoning Across Zones, Zone Registration, Trespass Protection, Over the Air Site Alias, 32 Preferred Sites, FastStart and AllStart Call Setup.	G173	656	$200.00
ADD: P25 TRUNKING SOFTWARE When ordering this option G51 & G808 MUST be ordered. G173 is included at "NO CHARGE".	G361	656	$300.00

4: Control Head Herdware *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: XTL2500 CONTROL HEAD	G442	514	$292.00
ADD: NO CONTROL HEAD NEEDED Requires remote mounting option (G67 or G855)	G88	500	$0.00

5: Control Head Software *(Must Always Select G444)*

Description	Nomenclature	APC	Price
ADD: ADD: CONTROL HEAD SOFTWARE MUST ALWAYS SELECT THIS OPTION	G444	514	$0.00

6: Mounting *(Must Select One)*

"If a remote mount cable other then 5 meters (17ft) is desired for the G67 or G855, please reference the "Remote Mount Cables" section below in Section C: Optional Features"

Description	Nomenclature	APC	Price
ADD: THUMB SCREW REMOTE MOUNT	G67	514	$297.00
ADD: QUICK HP REMOTE MT	G655	518	$346.00

7: Antenna *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: NO ANTENNA NEEDED	G89	500	$0.00
ANTENNA 1/4 WAVE WHIP 380-433 MHZ Not Compatible with Motorcycle Corresponding kit: HAE6012. **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.**	G425	585	$25.00
ANTENNA 1/4 WAVE WHIP 450-470 MHZ Not Compatible with Motorcycle Corresponding kit: HAE4003.	G426	585	$25.00
ANTENNA 3.5DB 380-433 MHZ Not Compatible with Motorcycle Corresponding kit: HAE6010.	G427	585	$55.00
ANTENNA 3.5DB 450-470MHZ Not Compatible with Motorcycle Corresponding kit: HAE4011.	G428	585	$50.00
ANTENNA 5.0 DB 380-433 MHZ Not Compatible with Motorcycle Corresponding kit: HAE6011.	G429	585	$62.00
ANTENNA 5.0 DB 450-470 MHZ Not Compatible with Motorcycle Corresponding kit: RAE4014ARB.	G430	585	$58.00
ANTENNA WIDEBAND 380-470 MHZ Not Compatible with Motorcycle Corresponding kit: HAE6013.	G431	585	$58.00

8: Microphones *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.	G90	500	$0.00
ADD: PALM MICROPHONE Corresponding kit for W4, W5, W7: HMN1060 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090	W22	500	$72.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079 itemn=w382,4#]	W20	514	$180.00
ADD: HANDSET/HANGUP GCAI Coiled Cable with Toggle Switch Accessory Kit: HLN1457A	G874	514	$285.00
ADD: MODEL III KEYPAD TELEPHONE HANDSET Corresponding kit: HMN4097A	GA00221	514	$295.00

9: Speakers *(Must Select One)*

G142 NO SPEAKER Required for Control Station

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$60.00
ADD: INCREASED AUDIO POWER 13W Corresponding kit: HSN4032. NOT COMPATIBLE with W665 Control Station and Motorcycle Configuration.	W432	500	$71.50

Section B: Optional Features

The following features are **optional** and will provide additional capabilities, if required.

System Enhancement Options

Description	Nomenclature	APC	Price
ENH: ENHANCED DIGITAL ID DISPLAY	G114	500	$75.00
8 numeric character unit to unit display. NOTE: This option is required to display Radio ID or Radio Alias on the display for analog and digital conventional and trunking configurations.			
ENH: RADIO TRACE AND REMOTE MONITOR	G170	500	$75.00
Note: G170 option for Radio Trace/Remote Monitor is not compatible with W3 Control Head and G474 (Multi-Radio). For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ADD: CONVENTIONAL VOTING SCAN ASTRO	G387	500	$200.00
This feature allowe for voting of the Conventional Channels ONLY.			
ADD: TRUNKED ONE TOUCH BUTTON	G683	500	$150.00
ENH: OVER THE AIR PROGRAMMING	G996	518	$100.00
Compatible with P25 Trunking only. Requires W947 Data option. To do in field POP25 programming must use Advanced System Key (DVN4046A)			
ADD: XTL2500 RADIO AUTHENTICATION	W391	514	$100.00

Encryption Hardware and Software

Description	Nomenclature	APC	Price
ADD: ENCRYPTION UCM	G159	500	$150.00
REQUIRED for ANY encryption combination of Hardware Based Algorithms. Not Compatible with G193. CUSTOMERS USING THE FOLLOWING FREQUENCIES MUST ADD FREE OPTION "QA00351AA" (ENH: UCM SP TRIGGER) due to a known Self Quiting issue for radios with the standard UCM. UHF SELF-QUIETING SPURS: UHF RANGE 1 FREQUENCIES: 383.975 MHz 393.2125 MHz 395.975 MHz 432 MHz 456 MHz UHF RANGE 2 FREQUENCIES: 456 MHz 479.975 MHz 480 MHz			
ADD: KEY RETENTION 30 SECONDS	G336	500	$50.00
G159 REQUIRED			
ADD: MULTIPLE KEY ENCRYPTION OPERATION	W969	500	$330.00
REQUIRED when using more than one encryption algorithm or encryption key.			
ENH: CONVENTIONAL TACTICAL REKEY WITH MULTIKEY	H04	514	$350.00
Must Order IV&O(Q947)			

Encryption Algorithms

Description	Nomenclature	APC	Price
ADD: ADP ENCRYPTION	G113	526	$349.00
REQUIRES G159. INCLUDES W989 Multikey. ORDER G194 if need ADP with DES/DES-XL-DES-OFB. NOT AVAILABLE with 3600 Trunking and Analog Conventional software Peckages. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G806 in the Digital Conventional mode ONLY.			
Description	**Nomenclature**	**APC**	**Price**
ADD: ADP SOFTWARE DSP BASED CRYPTO	G193	500	$10.00
REQUIRES: G808 Digital Operation DOES NOT REQUIRE: G159 UCM or G77/G78 Encryption Warranty. Use standard warranty options if needed. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G806 in the Digital Conventional mode ONLY. .Includes 8 non-indexing encryption keys..			
Description	**Nomenclature**	**APC**	**Price**
AES ENCRYPTION-UCM	G843	412	$625.00
AES operates in digital mode only. NOT compatible with G241 ENH: SOFTWARE ASTRO READY ANALOG			
Description	**Nomenclature**	**APC**	**Price**
ADD: DES, DES-XL, DES-OFB ENCRYPTION - UCM	G625	412	$749.00
The Multikey (W969) or OTAR (G298) are only required when more than 1 key or 1 algorithm is programmed.			
Description	**Nomenclature**	**APC**	**Price**
ADD: DVI-XL ENCRYPTION	W793	500	$520.00
G159 is REQUIRED when ORDERING			

Description	Nomenclature	APC	Price
ADD: DVP-XL ENCRYPTION G159 is REQUIRED when ORDERING	W797	500	$487.00

Remote Mount Cables

The 5 meter (17 FT) Cable Ships Standard

Description	Nomenclature	APC	Price
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT) ***For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio*** Corresponding kit: HKN6164	G582	514	$65.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00

DEK

Description	Nomenclature	APC	Price
ADD: STATUS MESSAGE 8 MESSAGES NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration. CORRESPONDING KIT: H1838A	W355	500	$475.00
ADD: DDE STATUS MESSAGES 16 NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration. CORRESPONDING KIT: H1839A	W374	500	$650.00

Direct Mode Entry

Description	Nomenclature	APC	Price
ADD: 8 MODE DIRECT ENTRY ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1835A	W599	500	$160.00
ADD: 16 MODE DIRECT ENTRY ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1836A	W614	500	$360.00
ADD: 24 MODE DIRECT ENTRY NOT COMPATIBLE with W289 Siren/PA. 9600 Systems offer ONLY "Status" and not "Message". ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1837A	W615	500	$540.00

WHELEN SIREN (MOTOROLA COMPATIBLE)

NOTE: THE NEW SIREN IS COMPATIBLE WITH APX AND XTL MOBILES WITH "O" SERIES OR M5 CONTROL HEADS ONLY. THIS SIREN IS NOT COMPATIBLE WITH ANY "W" SERIES CONTROL HEADS

THE SIREN BASE MODEL TT2592, CABLE TT05707 AND THE SIREN MOUNTING HARDWARE TT0507 MUST ALWAYS BE ORDERED (THIS SIREN IS ORDERED AS A SEPARATE LINE ITEM, TT2592 IS THE MODEL)

DEK OPTIONS ARE AVAILABLE AS OPTIONS TO THE SUBSCRIBER AS SHOWN BELOW

Description	Nomenclature	APC	Price
WHELEN/MOTOROLA SIREN	TT2592	656	$395.00
SIREN HARDWARE INSTALL KIT	TT05707AA	656	$20.00
SIREN TO RADIO CABLE	TT05708AA	656	$65.00
SIREN TO DEK CABLE - 03 CONTROL HEAD ONLY	TT05709AA	656	$78.00

SIREN DEK OPTIONS

ADD: DEK FOR WHELEN SIREN W/ 03 CH ONLY	GA00812	656	$105.00
ADD: DEK FOR WHELEN SIREN	GA00814	656	$105.00

Auxiliary Switches

Description	Nomenclature	APC	Price
ADD: AUXILIARY SWITCH PANEL	W591	500	$165.00
Corresponding kit: HLN1198. G67 REQUIRED. NOT compatible with W3 control head or motorcycle.			

Alarm

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAYS AND CABLE	W116	500	$75.00
For either HORN or LIGHTS. NOT both			

Emergency

Description	Nomenclature	APC	Price
ADD: PTT FOOTSWITCH	G235	514	$51.00
Requires W872 Visor Mic. Kit Number: GLN7278B			
ADD: EXT EMERGENCY PUSHBUTTON	W688	500	$56.00
Corresponding kit: HLN5131			

Frequency and Squelch Codes

Description	Nomenclature	APC	Price
ENH: FACTORY PROGRAMMING	W844	500	$0.00

Packet Data Interface / Data Cables

Description	Nomenclature	APC	Price
ADD: RS232 DATA INTFC CABLE-DASH	G303	500	$50.00
5 FT RS232 DATA CABLE Corresponding kit: HKN6160A.			
RS232 DATA INTFC CABLE-TRUNK	G304	500	$50.00
20 FT RS232 DATA CABLE Corresponding kit: HKN6161A.			
ADD: RS232 & IV&D PACKET DATA INTERFACE	W947	500	$200.00
This option is ONLY Operational on Digital Trunking and Digital Conventional systemsIt INCLUDES the DLM Application. This option does not include Cables. G303 or G304 should be ordered seperately.			
USB DATA INTFC CABLE-DASH	G308	500	$50.00
6 FT USB W/IGNITION SENSE Corresponding kit: HKN6163B.			

RF Modem

Supported for 9600 Trunking only

Description	Nomenclature	APC	Price
ENH: ENABLE RF MODEM	G319	500	$0.00
The XTL mobiles do not support Site Lens or System Watch. Therefore, the APX RF Modem function does not support the legacy System Watch or Site Lens applications. The APX RF Modem supports Conventional or 9600 Trunking only. Enabling the RF Modem in conventional mode allows provisioned APX portables to pass accountability data through the portable option Q445.			

Service (These Service options are NOT applicable for Asia Pac)

REPAIR SERVICE ADVANTAGE

Provides for extended hardware repair coverage beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$64.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00

ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$246.00
ENH: 3 YR CANADA EXTND WRNTY XTL	GA00313	386	$177.00
ENH: 5 YR CANADA EXTND WRNTY XTL	GA00316	386	$240.00

REPAIR SERVICE ADVANTAGE (ENCRYPTED)

Provides for extended hardware repair coverage, including encryption, beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G77	185	$72.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G78	185	$137.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	GA00232	185	$205.00
ENH: 3 YR CANADA ENCR EXT WRNTY XTL	GA00314	386	$181.00
ENH: 5 YR CANADA ENCR EXT WRNTY XTL	GA00317	386	$244.00

REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)

Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00
ENH: 3 YEAR ENCRYPTED RSA (COMPREHENSIVE)	GA00255AA	185	$302.00

Test Results

Description	Nomenclature	APC	Price
ADD: PRINTED TEST RESULTS	G799	500	$0.00

Amplifier

UHF and VHF Mid and High Power Radios Only

Description	Nomenclature	APC	Price
ADD: RF PRE-AMPLIFIER	W12	585	$66.00

Section C: Aftermarket Accessories

Algorithm Kits

DES DES-XL DES-OFB ENCRYPTION KIT	NNTN4941	456	$786.00

Antennas

Description	Nomenclature	APC	Price
ANTENNA, UHF (450-470 MHZ) 1/4 WAVE ROOF MOUNT Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: Unity, VSWR: Less than 2:1, Impedance: 50 Ohms, nominal	HAE4003	554	$21.50
ANTENNA UHF (445-470 MHZ) 3.5DB GAIN ROOF MOUNT Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedance: 50 Ohms, nominal.	HAE4011	554	$77.50
ANTENNA, UHF (470-512 MHZ) 1/4 WAVE ROOF MOUNT Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: Unity, VSWR: Less than 2:1, Impedance: 50 Ohms, nominal	HAE4004	554	$20.00
ANTENNA, UHF (470-494 MHZ) 3.5DB GAIN ROOF TOP Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedance: 50 Ohms, nominal.	HAE4012	554	$68.00
ANTENNA, UHF (494-512 MHZ) 3.5DB GAIN ROOF TOP	HAE4013	554	$72.00

Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedance: 50 Ohms, nominal.			
ANTENNA UHF (445-470 MHZ) 5DB GAIN	RAE4014ARB	554	$110.00
Roof Mount, SPECTRUM Base Loaded 5 dB Gain Antenna, Cable. RG58 A/U, Rugged Duty, Mini UHF connector.			
ANTENNA UHF 1/4 WAVE	RAE4024ARB	554	$100.00
ANTENNA UHF (494-512 MHZ) 5DB GAIN	RAE4016ARB	554	$144.00
Roof Mount, SPECTRUM Base Loaded 5 dB Gain Antenna, RG58 A/U Cable, Rugged Duty, Mini UHF connector			

Cable (s)

AUDIO CABLE ADAPTER	HKN6158	500	$49.00
ADAPTER CABLE DATA	HKN6159	500	$49.00

Cables (Remote Mount)

CABLE, REMOTE MOUNT, 75 FT	HKN6166	514	$80.00
CABLE, REMOTE MOUNT, 115 FT	HKN6165	514	$105.00
CABLE,REMOTE MOUNT,131 FT	HKN6164	514	$122.00

Customer Programming Software

Data

CABLE KIT 20' DATA	HKN6161	476	$50.00
RS232 Data Interface Cable - REMOTE			

Manuals

Description	Nomenclature	APC	Price
XTL 2500 M5 MANUAL	HLN1460D	514	$12.00

Microphones

HANDSET/HANGUP (HANGUP CUP)	HLN1457	706	$285.00
MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	706	$295.00
XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00
AS. SPECTRA & XTL5000 DESKTOP MIC	RMN5070A	706	$172.00

Speakers

EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	HSN4038	476	$60.50
MCS EXT SPKR 13W	HSN4032B	500	$71.50

Bull Horns for Sirens and Public Address

Description	Nomenclature	APC	Price
SPEAKER SIREN, ROUND W/CHROME & BLACK	TDN6251	706	$329.00
SPEAKER RECTANGULAR WITH CHROME FINISH	TDN6252	706	$265.00
SPEAKER UNDERHOOD WITH GRAY FINISH	TDN6253	706	$220.00
SPEAKER ROUND WITH GRAY FINISH	TDN6254	706	$248.00

Miscellaneous

Description	Nomenclature	APC	Price
WILDCARD	HLN1196	412	$185.00
AUXILIARY SWITCH PANEL (W591-W9)	HLN1342	617	$165.00

Section D: Vehicle Location Solution

Vehicle Location Solution

Vehicle location or GPS is now available on the ASTRO 25 XTL 2500 mobile radio.

The TrimFleet ™ GPS mobile units provide a versatile and economical platform for mobile positioning applications. Using state-of-the-art GPS receiver technology, the TrimFleet GPS receiver unit has been optimized for vehicle installation and operation, providing reliable vehicle position, direction, speed, time and status in any weather, anywhere in the world.

The TrimFleet receiver contains a 12-channel GPS module and an (optional) angular rate sensor module. The TrimFleet receiver connects directly to in-vehicle laptops/workstations as well as VRM and XTL radios. The TrimFleet GPS receiver outputs positions when in GPS coverage via either of its RS-232C serial ports in National Marine Electronics Association Protocol (NMEA), Trimble ASCII Interface Protocol (TAIP) and Point to Point Protocol (PPP) formats. The TrimFleet receiver may be configured to send the position data in either protocol via the two RS-232C data ports. Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

The TrimFleet DRU Plus may be equipped with an optional internal module to provide dead reckoned position data while outside of GPS coverage. This is accomplished through the use of advanced gyroscopic technology in combination with connections to the vehicle speed sensor and vehicle direction signal (forward or reverse.) Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

I/O PORTS

The TrimFleet DRU Plus provides two RS232C compatible communication ports that may be connected to external devices. One port provides a DE-9 female DCE connection, and the other port provides a DE-9 female DTE connection. The ports may be configured individually for baud rates between 110 and 115.2K baud. Both ports support NMEA and TAIP protocols. The default configuration for both ports is 9600 baud TAIP.

Also provided is support for PPP over RS232C on Port 1. An IP capable XTL 2500 radio may be interfaced to the port to allow wireless transmission of TAIP messages to an AVL server. The TAIP messages will be encapsulated in UDP packets and sent to a configurable destination IP address and port. TAIP messages may also be sent back to the TrimFleet DRU Plus by the AVL application to modify reporting rates and query current location or status.

Vehicle location is available only on ASTRO Conventional and Trunked IV&D Systems. Subscribers must have version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software.

Digital Conventional Ordering requirements for XTL 2500 Mobile:

- Requires Control Head (G442)
- ASTRO Digital CAI Operation (G806)
- Conventional Operation (G48)
- Packet Data Interface (W947)
- Mid Power RS232 Cable (G303 Dash / G304 Remote) *(Hooks to the J2 rectangular and DB9 connector)*
- High Power RS232 Cable (HKN6122) *(Hooks to the DB25 connector and the DB9 connector)*

P25 Trunking Ordering requirements for XTL 2500 Mobile:

- Requires Control Head (G442)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking 9600 Software (G361)
- Packet Data Interface (W947)
- Mid Power RS232 Cable (G303 Desh / G304 Remote) *(Hooks to the J2 rectangular and DB9 connector)*
- High Power RS232 Cable (HKN6122) *(Hooks to the DB25 connector and the DB9 connector)*

Description	Nomenclature	APC	Price
TRIMFLEET DRU PLUS (W/DR & POWER CABLE)	DDN9439	222	$745.00

Description	Nomenclature	APC	Price
TRIMFLEET APU (W/POWER CABLE)	DDN9440	222	$620.00

Description	Nomenclature	APC	Price
TRIMFLEET GPS ANTENNA WITH CABLE	DDN9474	222	$99.00

Section E: Retrofit Mounting Kits

PLEASE READ ALL ALLIED MODEL AND OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION.

Retrofit Mounting Kits

Remote to Dash

Converts an existing remote mounted XTL 2500 mobile radio to a dash mounted radio. Applicable to Low/Mid power models.

Description	Nomenclature	APC	Price
REMOTE TO DASH RETROFIT KIT FOR O5 OR XTL2500 Contains dash mount headbridge hardware. Does not include transciever trunion. Does not include a control head.	H1817	514	$75.00

Dash to Remote

Converts an existing dash mounted XTL 2500 mobile radio to a remote mounted radio. Applicable to Low/Mid power models.

If you are retrofitting XTL 2500 radios that shipped AFTER 7/1/06, order H1818.

If you are retrofitting XTL 2500 radios that shipped BEFORE 7/1/06, order H1825.

Description	Nomenclature	APC	Price
O5/M5 DASH TO O5/M5 REMOTE RETROFIT KIT Contains rear housing for remote O5, O5 control head remote mounting hardware, remote O5 power cable, remote transciever faceplate. Remote cable available as option. Does not include transciever trunion. Does note include O5 control head.	H1818	514	$325.00

Remote Mount Cables

(Cable option is NOT required. If cable option is ordered, select ONLY one option.)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00

ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT) ***For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio*** Corresponding kit: HKN6164	G582	514	$65.00

Section F: Remote Control Head Replacement / Dual Control Head Retrofit Kit

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION.

Remote Control Head Replacement AND Dual Control Head Retrofit Kit

The XTL 2500 M5 Remote Control Head Replacement AND Dual Control Head Retrofit provides / requires the following:

- QTY 1: **REMOTE** mount control head assembly that includes a control head + flex cable + control head interface board rear housing (CHIB)
- Qty 1: Remote Control Head Power cable (HKN6188)
- Qty 1: Remote Control Head Mounting trunion and hardware
- Qty 1: Manual CD and dust cover kit
- OPTION: Must select a microphone option
- OPTION: Must select a speaker option
- OPTION: Must select a remote cable option

*** IF YOU ARE ADDING A CONTROL HEAD TO CONVERT A SINGLE CONTROL REMOTE MOUNT RADIO TO A DUAL CONTROL, THEN YOU MUST MAKE SURE THE RADIO HAD VERSION 6.9 SOFTWARE OR GREATER.

THE ALLIED SALES MODEL BELOW DOES NOT INCLUDE A FLASH FIRMWARE REFRESH. PLEASE SEE THE SUBSCRIBER FLASHPORT SOFTWARE UPGRADE PRICE PAGE ***

Description	Nomenclature	APC	Price
M5 REMOTE CTRL HD/CHIB REPLACEMENT / ADDITION	H1627	514	$570.00

Microphones

(Must Select One and Only One)

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.	G90	500	$0.00
ADD: PALM MICROPHONE Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090	W22	500	$72.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079	W20	514	$180.00

Speakers *(Must Select One)*

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$60.00
ADD: INCREASED AUDIO POWER 13W Corresponding kit: HSN4032. NOT COMPATIBLE with W865 Control Station and Motorcycle Configuretion.	W432	500	$71.50

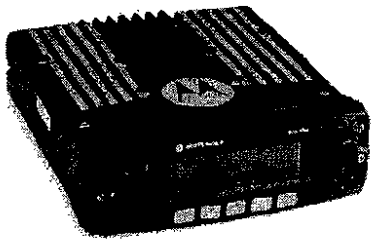
Remote Mount Cables

***** For Dual configurations, the total cable length may NOT be greater that 131 ft (40 meters) *****

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT) ***For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio*** Corresponding kit: HKN6164	G582	514	$65.00

Data Compiled 16-May-2013 using DUP and all prices in USD



ASTRO® Digital XTL 2500 Mobile UHF R2 450-520 MHz Band

Secure and Trunked Radio Systems

Ship Card

General Information

The XTL 2500 Mobile Line offers 1 radio hardware model:

Hardware Mode	Modes	Alphanumeric Display
		Lines/Characters
		per Line
CH	1000	4/14

OPERATING MODES

XTL 2500 Radio Models are capable of operating in three different voice communication modes:

- normal analog (clear voice)
- 3.6kb ASTRO Digital (both clear and coded voice)
- 9.6KB ASTRO Digital (both clear and coded voice)

The mode of operation is programmed on a channel-by-channel basis. The XTL 2500 is capable of transmitting clear analog voice or clear (unencrypted) ASTRO digital voice, depending on the channel programming. XTL 2500 radio functions include ASTRO Digital signaling and digital coding.

Please note that XTL radios do NOT support FRED.

Each hardware model must be ordered with 1 of the System Enhancement Software Package options.
The matrix below indicates standard Trunking features for SmartZone (G51) System Packages. SmartZone features listed in the lower matrix are available in the (G51) package only. Radio Wide Features and Standard Conventional Features are listed above. System Enhancement Options can be added to the packages shown below. Refer to the System Enhancement Options for compatibility.

COMMON SOFTWARE FEATURES SUPPORTED BY G51 "SmartZone®"			
	"Analog Operation"(G241)	"ASTRO Digital"(G806)	"ASTRO Digital" (G51/G806/G361)
		Non-Project 25	Project 25
		(3600 Baud)	(9600 Baud)
RADIO WIDE FEATURES			
Maximum Modes			
XTL 2500 Control Head	1000	1000	1000
Analog and Digital Operation	-	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes
ADP Encryption	No	Yes	Yes
Encryption Capable	Yes	Yes	Yes

One Touch Operation	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES			
Conventional Features are additional radio wide features beyond those specified in the APCO Project 25 documents.			
CSQ/PL/DPL	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes
Monitor	Yes	Yes	Yes
DTMF Tone Generation	Future	Future	Future
MPL	Future	N/A	N/A
MDC PTT ID	Yes	Yes	Yes
MDC Selective Radio Inhibit (Decode Only)	Yes	Yes	Yes
MDC Call Alert (Encode/Decode)	Yes	Yes	Yes
MDC Radio Check (Decode Only)	Yes	Yes	Yes
MDC Voice Selective Call (Encode/Decode)	Yes	Yes	Yes
MDC Remote Monitor (Decode Only)	Yes	Yes	Yes
MDC Call Lists (Call Alert/Select Call)	Yes	Yes	Yes
MDC Emergency	Yes	Yes	Yes
MDC Silent Emergency (Encode)	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES			
These features are APCO Project 25 Interoperable Features when used in the ASTRO Digital CAI Mode (G806)			
Unaddressed Voice Call	-	Yes	Yes
Talk Group Call	-	Yes	Yes
Group Call Alert™	-	Yes	Yes
Talk Group Identification (TGID)	-	Yes	Yes
Selective Call (Individual Voice Call)	-	Yes	Yes
Selective Call Decode (Individual Voice Call)	-	Yes	Yes
PTT ID (Individual Identification)	-	Yes	Yes
Call Alert Encode/Decode	-	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	-	Yes	Yes
Telephone Interconnect	-	Yes	Yes
Unlimited	-	Yes	Yes
Selective Radio Inhibit	-	Yes	Yes
Radio Check	-	Yes	Yes
Status/Message	-	Yes	Yes
Trunking Type II Only Features			
Maximum Number of Trunked Systems-20			
Talkgroup Calls	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes
Dual Mode Scan	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes

Status/Message	Yes	Yes	Status Only
Dispatcher Interrupt	No	No	No
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes
Radio Trace	Yes	Yes	No
Reprogram Request	Yes	Yes	Yes

Each hardware model must be ordered with 1 of the System Enhancemant Software Package options, Conventional or SmartZone.

SOFTWARE FEATURES SUPPORTED BY G51 "SmartZone®"			
	"Analog Operation" (G241)	"ASTRO Digital" (G806)	"ASTRO Digital" (G51/G806/G361)
		Non-Project 25	Project 25
		(3600 Baud)	(9600 Baud)
Trunking Type II Only Features			
Voice on Control	Future	Future	Yes
SmartZone Automatic Site Registration	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes
SmartZone Busy Override	No	No	No
SmartZone Preferred Site	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separetion conditions that must be adhered to on the XTL 2500 Mobile Radio Series. Separation of frequencies can be as wide as the allowable sub-band

per radio model with no degradation of any performance specifications. **If an incorrect antenna is used, degraded performance may be experienced.**

COMMON AIR INTERFACE

Conventional channels are P25 compliant with the ASTRO Digital CAI Operation Software (G806). ASTRO P25 Trunking Software (G361) **must** be added for P25 compliance in trunked systems.

PROJECT 25 ENCRYPTION

When ordering any of the Encryption Algorithm:

- **MUST** order the Encryption UCM Hardware (G159)
- ADP Privacy not supported by OTAR. ADP is digital P25 conventional / P25 trunking only.
- The DES-OFB and AES-OFB Encryption offered is compliant with Project 25 standards and does not support analog encryption operation.
  - REQUIRES the ASTRO Digital CAI (G806) to operate the DES-OFB or AES-OFB Encryption
- If ordering a non-OFB (XL version) Encryption:
  - The non-OFB encryption (XL versions) can ba operated in either analog or CAI digital mode but will not be Project 25 compliant.
- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.
  - Encryption UCM Herdware (G159) module may be ordered without an Encryption Algorithm for later upgrade in the field.

FIELD INSTALLED PROJECT 25 ENCRYPTION

The DES-OFB and AES-OFB Encryption offered is compliant with Project 25 standards. Operation of DES-OFB and/or AES-OFB encryption requires the ASTRO Digital CAI (G806). Radios can be upgraded via FLASHport to CAI operation.

- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

FIPS 140-2 COMPLIANCE

Encryption Modules equipped with AES are FIPS 140-2 compliant. ADP Privacy is not FIPS compliant. Further information regarding FIPS 140-2 certification may be found using the following links:

FIPS 140-2 Crypto Module Validation Program (CMVP)

NIST Cryptographic Module Validation Lists

Self-Quieting Spurs Frequency (MHz)

UHF R2 486.4 MHz

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on APX 7000 Dual Display Portable radios. Advanced Messaging is NOT supported on APX 7000 Top Display Portable radios.

Ordering ASTRO Advanced Meesaging Solution for APX Mobiles Require: (Note: some control heads are not available on all main models)

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- P25 Conventional (G48)
- Packet Data Interface (W947)

OR

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking Software (G361)
- Packet Data Interface (W947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

FCC Information

Band/Model	Power Output	Transmitter Certification (Type Acceptance)	Emissions	Applicable Rules
450-520 MHz	10 - 45 Watts	AZ492FT4867	8K10F1D, 8K10F1E, 11K0F3E, 16K0F3E, 20K0F1E, 20K0F1D	22, 74, 90

o **Except for Itinerant and low-power incident channels.**

** Itinerant & Low-Power Incident Channels	
Channel Number	Frequency Range (MHz)

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

Ç Canada personnel refer to Section A under CANADA ONLY information.

Guideline

This price page consists of the following sections:

A. Required Main Models and Options for standard operation (Steps 1-9)

B. Control Station

C. Optional Features

D. Aftermarket Accessories

Section A: Required Main Model and Options

For standard Radio Operation **Steps 1 - 9** must be selected.

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

1: Main Model *(Must Select)*

Description	Nomenclature	APC	Price
XTL2500 UHF R2 450-520 MHZ, 10-40 WATT	M21SSM9PW1 N	518	$1,497.00

2: Operation Mode *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: SOFTWARE ASTRO READY ANALOG	G241	500	$0.00
NOT COMPATIBLE with Encryption Algorithm W889, W793, W797, G298, G851, or G843 when combined with a Trunking Software Option. DES-OFB is not operational in Analog Operation.			
ENH: XTL SOFTWARE ASTRO DIGITAL CAI OPERATION	G806	514	$515.00

3: System Enhancement Software *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: CONVENTIONAL OPERATION	G48	514	$275.00

ENH: SOFTWARE SMARTZONE/SINGLETONE	G51	514	$975.00

3b: Optional System Enhancement Software *(Not Required)*

Description	Nomenclature	APC	Price
ENH: SMARTZONE OMNILNK MULTZONE SYSTEM SW	G173	656	$200.00
Automatic Zoning Across Zones, Zone Registration, Trespass Protection, Over the Air Site Alias, 32 Preferred Sites, FastStart and AllStart Call Setup.			
ADD: P25 TRUNKING SOFTWARE	G361	656	$300.00
When ordering this option G51 & G806 MUST be ordered. G173 is included at "NO CHARGE".			

4: Control Head Hardware *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: XTL2500 CONTROL HEAD	G442	514	$292.00
ADD: NO CONTROL HEAD NEEDED	G88	500	$0.00
Requires remote mounting option (G67 or G655)			

5: Control Head Software *(Must Always Select G444)*

Description	Nomenclature	APC	Price
ADD: ADD: CONTROL HEAD SOFTWARE	G444	514	$0.00
MUST ALWAYS SELECT THIS OPTION			

6: Mounting *(Must Select One)*

If a remote mount cable other than 5 meters (17ft) is desired for the G67, please reference the "Remote Mount Cables" section below in Section C: Optional Features

Description	Nomenclature	APC	Price
ADD: DASH MOUNT	G66	500	$125.00
Required for Control Station Operation			
ADD: REMOTE MOUNT	G67	500	$297.00
Required for Dual Control and High Power Radios			

7: Antenna *(Must Select One)*

Description	Nomenclature	APC	Price
ANTENNA 1/4 WAVE WHIP 450-470 MHZ	G426	585	$25.00
Not Compatible with Motorcycle Corresponding kit: HAE4003.			
ANTENNA 3.5DB 450-470MHZ	G428	585	$50.00
Not Compatible with Motorcycle Corresponding kit: HAE4011.			
ANTENNA 5.0 DB 450-470 MHZ	G430	585	$58.00
Not Compatible with Motorcycle Corresponding kit: RAE4014ARB.			
ADD: ANTENNA 5DB GAIN 494-512 MHZ	G486	585	$58.00
Not Compatible with Motorcycle Corresponding kit: RAE4016ARB.			
ADD: ADD: ANT 1/4 WAVE 470-512 MHZ	G490	585	$14.00
Not Compatible with Motorcycle Corresponding kit: HAE4004.			
ADD: ANTENNA 3 DB ROOF TOP 470-495	G493	585	$33.00
Not Compatible with Motorcycle Corresponding kit: HAE4012.			
ADD: ANTENNA 3 DB ROOF TOP 494-512 MHZ	G494	585	$33.00
Not Compatible with Motorcycle Corresponding kit: HAE4013.			
ADD: NO ANTENNA NEEDED	G89	500	$0.00

8: Microphones *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED	G90	500	$0.00
Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G767 For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			

ADD: PALM MICROPHONE Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090	W22	500	$72.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079	W20	514	$180.00
ADD: HANDSET/HANGUP GCAI Coiled Cable with Toggle Switch Accessory Kit: HLN1457A	G874	514	$285.00
ADD: CONTROL STATION DESK MICROPHONE Dash Mount Required Corresponding Kit: RMN5070	W382	500	$169.00
ADD: MODEL III KEYPAD TELEPHONE HANDSET Corresponding kit: HMN4097A	GA00221	514	$295.00

~~9: Speakers~~ ***~~(Must Select One)~~***

"G142 NO SPEAKER Required for Control Station"

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$60.00
ADD: INCREASED AUDIO POWER 13W Corresponding kit: HSN4032. NOT COMPATIBLE with W666 Control Station and Motorcycle Configuration.	W432	500	$71.50

Section B: Control Station

CONTROL STATION OPERATION

I. First, you must review your selection of the following options from "Section 1: Required Options".

- Step 1 *(Note: Main Model)*
- Step 2 *(Note: All listed options are compliant)*
- Step 3 *(Note: All listed options are compliant)*
- Step 4 *(Note: Must select G442. XTL 2500 Control Head is compatible with Control Station Application).*
- Step 5 *(Note: Must Select G444. The XTL 2500 Control Head Software is compatible with Control Station Application).*
- Step 6 *(Note: Must Select G66. Control Station operation is only offered in Dash mount configuration).*
- Step 7 *(Note: All listed options are complient).*
- Step 8 *(Note: Select desired microphone option and if no microphone is needed, G90 must be selected).*
- Step 9 *(Note: Must Select G142 - No Speaker Needed).*

II. You Must Select ONE of the Following "Specific Control Station Options":

SPECIFIC CONTROL STATION OPTIONS

Control Station Operation and Power Supply ***(Must Select BOTH)***

Description	Nomenclature	APC	Price
ADD: CONTROL STATION POWER SUPPLY Corresponding kit: HPN4007	G91	500	$269.00
ADD: CONTROL STATION OPERATION For DASH MOUNT radios ONLY (G66)!! Not compatible with W3, or W9 control head options. G665 includes a base tray and a speaker; therefore G142	W665	500	$70.00

has to be ordered to eliminate extra Speaker. Requires a Power Supply (G91 can be ordered as a Power Supply).
Requires one of the Microphone Options: G90, W22 or W382.
Corresponding kit: HLN8042

III. Features listed in "Section C: Optional Features" are optional, if applicable. Please read the option's description to determine compatibility.

Section C: Optional Features

The following features are **optional** and will provide additional capabilities, if required.

System Enhancement Options

Description	Nomenclature	APC	Price
ENH: ENHANCED DIGITAL ID DISPLAY	G114	500	$75.00
8 numeric character unit to unit display. NOTE: This option is required to display Radio ID or Radio Alias on the display for analog and digital conventional and trunking configurations.			
ENH: RADIO TRACE AND REMOTE MONITOR	G170	500	$75.00
Note: G170 option for Radio Trace/Remote Monitor is not compatible with W3 Control Head and G474 (Multi-Radio). For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ADD: CONVENTIONAL VOTING SCAN ASTRO	G387	500	$200.00
This feature allows for voting of the Conventionel Channels ONLY.			
ADD: TRUNKED ONE TOUCH BUTTON	G683	500	$150.00
ENH: OVER THE AIR PROGRAMMING	G996	518	$100.00
Compatible with P25 Trunking only. Requires W947 Data option. To do in field POP25 programming must use Advanced System Key (DVN4046A)			
ADD: XTL2500 RADIO AUTHENTICATION	W391	514	$100.00

Encryption Hardware and Software

Description	Nomenclature	APC	Price
ADD: ENCRYPTION UCM	G159	500	$150.00
REQUIRED for ANY encryption combination of Hardware Based Algorithms. Not Compatible with G193. CUSTOMERS USING THE FOLLOWING FREQUENCIES MUST ADD FREE OPTION "QA00351AA" (ENH: UCM SP TRIGGER) due to a known Self Quiling Issue for radios with the standard UCM. UHF SELF-QUIETING SPURS: UHF RANGE 1 FREQUENCIES: 383.975 MHz 393.2125 MHz 395.975 MHz 432 MHz 456 MHz UHF RANGE 2 FREQUENCIES: 456 MHz 479.975 MHz 480 MHz			
ADD: KEY RETENTION 30 SECONDS	G336	500	$50.00
G158 REQUIRED			
ADD: MULTIPLE KEY ENCRYPTION OPERATION	W969	500	$330.00
REQUIRED when using more than one encryption algorithm or encryption key.			
ENH: CONVENTIONAL TACTICAL REKEY WITH MULTIKEY	H04	514	$350.00
Must Order IV&D(Q947)			

Encryption Algorithms

Description	Nomenclature	APC	Price
ADD: ADP ENCRYPTION	G113	526	$349.00
REQUIRES G158. INCLUDES W969 Multikey. ORDER G194 if need ADP with DES/DES-XL-DES-OFB. NOT AVAILABLE with 3600 Trunking and Analog Conventional software Packages. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G808 in the Digital Conventional mode ONLY.			
Description	**Nomenclature**	**APC**	**Price**
ADD: ADP SOFTWARE DSP BASED CRYPTO	G193	500	$10.00
REQUIRES: G806 Digital Operation			

DOES NOT REQUIRE: G159 UCM or G77/G78 Encryption Warranty. Use standard warranty options if needed.
COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G806 in the Digital Conventionel mode ONLY. .Includes 6 non-indexing encryption keys..

Description	Nomenclature	APC	Price
AES ENCRYPTION-UCM	G843	412	$625.00

AES operates in digital mode only.
NOT compatible with G241 ENH: SOFTWARE ASTRO READY ANALOG

Description	Nomenclature	APC	Price
ADD: DES, DES-XL, DES-OFB ENCRYPTION - UCM	G625	412	$749.00

The Multikey (W989) or OTAR (G298) are only required when more than 1 key or 1 algorithm is programmed.

Description	Nomenclature	APC	Price
ADD: DVI-XL ENCRYPTION	W793	500	$520.00

G159 is REQUIRED when ORDERING

Description	Nomenclature	APC	Price
ADD: DVP-XL ENCRYPTION	W797	500	$487.00

G159 is REQUIRED when ORDERING

Remote Mount Cables

(The 5 meter (17 FT) Cable Ships Standard)

Description	Nomenclature	APC	Price
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT)	G582	514	$65.00

For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio
Corresponding kit: HKN6164

ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT)	G607	514	$45.00

Corresponding kit: HKN6166A

ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT)	G609	514	$35.00

Corresponding kit: HKN6167

ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT)	G610	514	$25.00

Corresponding kit: HKN6168

ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT)	G879	514	$55.00

Corresponding kit: HKN6165

ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT)	G618	514	$10.00

Corresponding kit: HKN6170

DEK

Description	Nomenclature	APC	Price
ADD: STATUS MESSAGE 8 MESSAGES	W355	500	$475.00

NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration.
CORRESPONDING KIT: H1838A

ADD: DDE STATUS MESSAGES 16	W374	500	$650.00

NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration.
CORRESPONDING KIT: H1839A

Direct Mode Entry

Description	Nomenclature	APC	Price
ADD: 8 MODE DIRECT ENTRY	W599	500	$180.00

ONLY compatible with Remote Mount configuration.
CORRESPONDING KIT: H1835A

ADD: 16 MODE DIRECT ENTRY	W614	500	$360.00

ONLY compatible with Remote Mount configuration.
CORRESPONDING KIT: H1836A

ADD: 24 MODE DIRECT ENTRY	W615	500	$540.00

NOT COMPATIBLE with W269 Siren/PA. 9600 Systems offer ONLY "Status" and not "Meseage". ONLY compatible with Remote Mount configuration.
CORRESPONDING KIT: H1837A

WHELEN SIREN (MOTOROLA COMPATIBLE)

NOTE: THE NEW SIREN IS COMPATIBLE WITH APX AND XTL MOBILES WITH "O" SERIES OR M5 CONTROL HEADS ONLY. THIS SIREN IS NOT COMPATIBLE WITH ANY "W" SERIES CONTROL HEADS

THE SIREN BASE MODEL TT2592, CABLE TT05707 AND THE SIREN MOUNTING HARDWARE TT0507 MUST ALWAYS BE ORDERED (THIS SIREN IS ORDERED AS A SEPARATE LINE ITEM, TT2592 IS THE MODEL)

DEK OPTIONS ARE AVAILABLE AS OPTIONS TO THE SUBSCRIBER AS SHOWN BELOW

Description	Nomenclature	APC	Price
WHELEN/MOTOROLA SIREN	TT2592	656	$395.00
SIREN HARDWARE INSTALL KIT	TT05707AA	656	$20.00
SIREN TO RADIO CABLE	TT05708AA	656	$65.00
SIREN TO DEK CABLE - O3 CONTROL HEAD ONLY	TT05709AA	656	$78.00

SIREN DEK OPTIONS

ADD: DEK FOR WHELEN SIREN W/ O3 CH ONLY	GA00812	656	$105.00
ADD: DEK FOR WHELEN SIREN	GA00814	656	$105.00

Auxiliary Switches

Description	Nomenclature	APC	Price
ADD: AUXILIARY SWITCH PANEL	W591	500	$165.00

Corresponding kit: HLN1189.
G67 REQUIRED. NOT compatible with W3 control head or motorcycle.

Alarm

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAYS AND CABLE	W116	500	$75.00

For either HORN or LIGHTS. NOT both

Emergency

Description	Nomenclature	APC	Price
ADD: PTT FOOTSWITCH	G235	514	$51.00

Requires W872 Visor Mic.
Kit Number: GLN7278B

ADD: EXT EMERGENCY PUSHBUTTON	W688	500	$56.00

Corresponding kit: HLN5131

Frequency and Squelch Codes

Description	Nomenclature	APC	Price
ENH: FACTORY PROGRAMMING	W844	500	$0.00

Packet Data Interface / Data Cables

Description	Nomenclature	APC	Price
ADD: RS232 DATA INTFC CABLE-DASH	G303	500	$50.00

8 FT RS232 DATA CABLE
Corresponding kit: HKN6160A.

RS232 DATA INTFC CABLE-TRUNK	G304	500	$50.00

20 FT RS232 DATA CABLE
Corresponding kit: HKN6161A.

ADD: RS232 & IV&D PACKET DATA INTERFACE	W947	500	$200.00

This option is ONLY Operational on Digital Trunking and Digital Conventional systems!! INCLUDES the DLM Application. This option does not include Cables. G303 or G304 should be ordered separately.

USB DATA INTFC CABLE-DASH	G308	500	$50.00

8 FT USB W/IGNITION SENSE
Corresponding kit: HKN6183B.

RF Modem

(Supported for 9600 Trunking only)

Description	Nomenclature	APC	Price
ENH: ENABLE RF MODEM	G319	500	$0.00

The XTL mobiles do not support Site Lens or System Watch. Therefore, the APX RF Modem function does not support the legacy System Watch or Site Lens applications. The APX RF Modem supports Conventional or 9600 Trunking only. Enabling the RF Modem in conventional mode allows provisioned APX portables to pass accountability data through the portable option Q445.

Service (These Service options are NOT applicable for Asia Pac)

REPAIR SERVICE ADVANTAGE

Provides for extended hardware repair coverage beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping vie Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$64.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$246.00
ENH: 3 YR CANADA EXTND WRNTY XTL	GA00313	386	$177.00
ENH: 5 YR CANADA EXTND WRNTY XTL	GA00316	386	$240.00

REPAIR SERVICE ADVANTAGE (ENCRYPTED)

Provides for extended hardware repair coverage, including encryption, beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G77	185	$72.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G78	185	$137.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	GA00232	185	$205.00
ENH: 3 YR CANADA ENCR EXT WRNTY XTL	GA00314	386	$181.00
ENH: 5 YR CANADA ENCR EXT WRNTY XTL	GA00317	386	$244.00

REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)

Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00
ENH: 3 YEAR ENCRYPTED RSA (COMPREHENSIVE)	GA00255AA	185	$302.00

Test Results

Description	Nomenclature	APC	Price
ADD: PRINTED TEST RESULTS	G799	500	$0.00

Amplifier

******UHF and VHF Mid and High Power Radios Only******

Description	Nomenclature	APC	Price
ADD: RF PRE-AMPLIFIER	W12	585	$66.00

Miscellaneous

Description	Nomenclature	APC	Price
ADD: KEY LOCK MOUNT	W81	500	$33.00

Section D: Aftermarket Accessories

Algorithm Kits

XTL5000 AES256, ADP	NNTN8328A	585	$997.00
XTL5000 DES-XL, DES-OFB, ADP	NNTN8327A	585	$998.00

XTL5000 DES-XL, DES-OFB, AES256, AD	NNTN8326A	585	$1,499.00
XTL5000 AES256	NNTN8331A	456	$795.00

Antennas

Description	Nomenclature	APC	Price
ANTENNA, UHF (450-470 MHZ) 1/4 WAVE ROOF MOUNT Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: Unity, VSWR: Less than 2:1, Impedance: 50 Ohms, nominal	HAE4003	554	$21.50
ANTENNA UHF (445-470 MHZ) 3.5DB GAIN ROOF MOUNT Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedance: 50 Ohms, nominal.	HAE4011	554	$77.50
ANTENNA, UHF (470-512 MHZ) 1/4 WAVE ROOF MOUNT Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: Unity, VSWR: Less than 2:1, Impedance: 50 Ohms, nominal	HAE4004	554	$20.00
ANTENNA, UHF (470-494 MHZ) 3.5DB GAIN ROOF TOP Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedance: 50 Ohms, nominal.	HAE4012	554	$68.00
ANTENNA, UHF (494-512 MHZ) 3.5DB GAIN ROOF TOP Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedance: 50 Ohms, nominal.	HAE4013	554	$72.00
ANTENNA UHF (445-470 MHZ) 5DB GAIN Roof Mount, SPECTRUM Base Loaded 5 dB Gain Antenna, Cable: RG58 A/U, Rugged Duty, Mini UHF connector.	RAE4014ARB	554	$110.00
ANTENNA UHF (494-512 MHZ) 5DB GAIN Roof Mount, SPECTRUM Base Loaded 5 dB Gain Antenna, RG58 A/U Cable, Rugged Duty, Mini UHF connector	RAE4016ARB	554	$144.00

Cable (s)

AUDIO CABLE ADAPTER	HKN6158	500	$49.00
ADAPTER CABLE DATA	HKN6159	500	$49.00

Cables (Remote Mount)

CABLE, REMOTE MOUNT, 75 FT	HKN6166	514	$80.00
CABLE, REMOTE MOUNT, 115 FT	HKN6165	514	$105.00
CABLE,REMOTE MOUNT,131 FT	HKN6164	514	$122.00

Control Station

Description	Nomenclature	APC	Price
MOBILE DESK TRAY	HLN6042	617	$77.00
PS 14V 10A 117/240 VAC.	HPN4007C	500	$296.00

Customer Programming Software

Data

CABLE KIT 20' DATA RS232 Data Interface Cable - REMOTE	HKN6161	478	$50.00

Manuals

Description	Nomenclature	APC	Price
XTL 2500 M5 MANUAL	HLN1460D	514	$12.00

Microphones

HANDSET/HANGUP (HANGUP CUP)	HLN1457	706	$285.00
MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	706	$295.00
XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00
AS. SPECTRA & XTL5000 DESKTOP MIC	RMN5070A	706	$172.00

Speakers

Description	Nomenclature	APC	Price
EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	HSN4038	476	$60.50
MCS EXT SPKR 13W	HSN4032B	500	$71.50

Bull Horns for Sirens and Public Address

Description	Nomenclature	APC	Price
SPEAKER SIREN, ROUND W/CHROME & BLACK	TDN6251	706	$329.00
SPEAKER RECTANGULAR WITH CHROME FINISH	TDN6252	706	$265.00
SPEAKER UNDERHOOD WITH GRAY FINISH	TDN6253	706	$220.00
SPEAKER ROUND WITH GRAY FINISH	TDN6254	706	$248.00

Miscelleneous

Description	Nomenclature	APC	Price
WILDCARD	HLN1196	412	$165.00
AUXILIARY SWITCH PANEL (W591-W9)	HLN1342	617	$165.00

Section E: Vehicle Location Solution

Vehicle Location Solution

Vehicle location or GPS is now available on the ASTRO 25 XTL 2500 mobile radio.

The TrimFleet ™ GPS mobile units provide a versatile and economical platform for mobile positioning applications. Using state-of-the-art GPS receiver technology, the TrimFleet GPS receiver unit has been optimized for vehicle installation and operation, providing reliable vehicle position, direction, speed, time and status in any weather, anywhere in the world.

The TrimFleet receiver contains a 12-channel GPS module and an (optional) angular rate sensor module. The TrimFleet receiver connects directly to in-vehicle laptops/workstetions as well as VRM and XTL radios. The TrimFleet GPS receiver outputs positions when in GPS coverage via either of its RS-232C serial ports in National Marine Electronics Association Protocol (NMEA), Trimble ASCII Interface Protocol (TAIP) and Point to Point Protocol (PPP) formets. The TrimFleet receiver may be configured to send the position data in either protocol via the two RS-232C data ports. Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

The TrimFleet DRU Plus may be equipped with an optionel internal module to provide dead reckoned position data while outside of GPS coverage. This is accomplished through the use of advanced gyroscopic technology in combination with connections to the vehicle speed sensor and vehicle direction signal (forward or reverse.) Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

I/O PORTS

The TrimFleet DRU Plus provides two RS232C compatible communication ports that may be connected to external devices. One port provides a DE-9 female DCE connection, and the other port provides a DE-9 female DTE connection. The ports may be configured individually for baud rates between 110 and 115.2K baud. Both ports support NMEA and TAIP protocols. The default configuration for both ports is 9600 baud TAIP.

Also provided is support for PPP over RS232C on Port 1. An IP capable XTL 2500 radio may be interfaced to the port to allow wireless transmission of TAIP messages to an AVL server. The TAIP messages will be encapsulated in UDP packets and sent to a configurable destination IP address and port. TAIP messages may also be sent back to the TrimFleet DRU Plus by the AVL application to modify reporting rates and query current location or status.

Vehicle location is available only on ASTRO Conventional and Trunked IV&D Systems. Subscribers must have version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software.

Digital Conventional Ordering requirements for XTL 2500 Mobile:

- Requires Control Head (G442)
- ASTRO Digital CAI Operation (G806)
- Conventional Operation (G48)
- Packet Data Interface (W947)
- Mid Power RS232 Cable (G303 Dash / G304 Remote) *(Hooks to the J2 rectangular and DB9 connector)*
- High Power RS232 Cable (HKN6122) *(Hooks to the DB25 connector and the DB9 connector)*

P25 Trunking Ordering requirements for XTL 2500 Mobile:

- Requires Control Head (G442)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking 9600 Software (G361)
- Packet Data Interface (W947)
- Mid Power RS232 Cable (G303 Dash / G304 Remote) *(Hooks to the J2 rectangular and DB9 connector)*
- High Power RS232 Cable (HKN6122) *(Hooks to the DB25 connector and the DB9 connector)*

Description	Nomenclature	APC	Price
TRIMFLEET DRU PLUS (W/DR & POWER CABLE)	DDN9439	222	$745.00

Description	Nomenclature	APC	Price
TRIMFLEET APU (W/POWER CABLE)	DDN9440	222	$620.00

Description	Nomenclature	APC	Price
TRIMFLEET GPS ANTENNA WITH CABLE	DDN9474	222	$99.00

Section F: Retrofit Mounting Kits

PLEASE READ ALL ALLIED MODEL AND OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION.

Retrofit Mounting Kits

Remote to Dash

Converts an existing remote mounted XTL 2500 mobile radio to a dash mounted radio. Applicable to Low/Mid power models

Description	Nomenclature	APC	Price
REMOTE TO DASH RETROFIT KIT FOR O5 OR XTL2500	H1817	514	$75.00

Contains dash mount headbridge hardware. Does not include transceiver trunion. Does not include a control head.

Dash to Remote

Converts an existing dash mounted XTL 2500 mobile radio to a remote mounted radio. Applicable to Low/Mid power models.

If you are retrofitting XTL 2500 radios that shipped AFTER 7/1/06, order H1818.

If you are retrofitting XTL 2500 radios that shipped BEFORE 7/1/06, order H1825.

Description	Nomenclature	APC	Price
O5/M5 DASH TO O5/M5 REMOTE RETROFIT KIT Contains rear housing for remote O5, O5 control head remote mounting hardware, remote O5 power cable, remote transciever faceplate. Remote cable available as option. Does not include transciever trunion. Does nota include O5 control head.	H1818	514	$325.00

Remote Mount Cables

(Cable option is NOT required. If cable option is ordered, select ONLY one option.)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT) ***For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio*** Corresponding kit: HKN6164	G582	514	$65.00

Section G: Remote Control Head Replacement / Dual Control Head Retrofit Kit

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION.

Remote Control Head Replacement AND Dual Control Head Retrofit Kit

The XTL 2500 M5 Remote Control Head Replacement AND Dual Control Head Retrofit provides / requires the following:

- QTY 1: **REMOTE** mount control head assembly that includes a control head + flex cable + control head interface board rear housing (CHIB)
- Qty 1: Remote Control Head Power cable (HKN6188)
- Qty 1: Remote Control Head Mounting trunion and hardware
- Qty 1: Manual CD and dust cover kit
- OPTION: Must select a microphone option

- OPTION: Must select a speaker option
- OPTION: Must select a remote cable option

*** IF YOU ARE ADDING A CONTROL HEAD TO CONVERT A SINGLE CONTROL REMOTE MOUNT RADIO TO A DUAL CONTROL, THEN YOU MUST MAKE SURE THE RADIO HAD VERSION 6.9 SOFTWARE OR GREATER.

THE ALLIED SALES MODEL BELOW DOES NOT INCLUDE A FLASH FIRMWARE REFRESH. PLEASE SEE THE SUBSCRIBER FLASHPORT SOFTWARE UPGRADE PRICE PAGE ***

Description	Nomenclature	APC	Price
M5 REMOTE CTRL HD/CHIB REPLACEMENT / ADDITION	H1827	514	$570.00

Microphones

(Must Select One and Only One)

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G767. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.	G90	500	$0.00
ADD: PALM MICROPHONE Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090	W22	500	$72.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079	W20	514	$180.00

Speakers *(Must Select One)*

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$60.00
ADD: INCREASED AUDIO POWER 13W Corresponding kit: HSN4032. NOT COMPATIBLE with W655 Control Station and Motorcycle Configuration.	W432	500	$71.50

Remote Mount Cables

***** For Dual configurations, the total cable length may NOT be greater that 131 ft (40 meters) *****

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6189	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6186	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6187	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6186A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6185	G879	514	$55.00

ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT)	G582	514	$65.00

For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio
Corresponding kit: HKN8164

Data Compiled 16-May-2013 using DUP and all prices in USD

All Prices Subject to Change

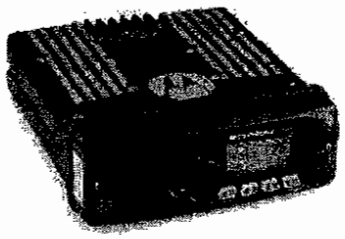
Part #	Description	List Price
4200865599	BELT WAIST BLK	20.00
AARLN488SB	RECEIVE ONLY EARBUD FOR REM SPK MIC	25.00
HLN6875A	BELT CLIP 3 INCH	12.00
HMN4103B	IMPRES RSM DSPLY W JACK, NO CHNL	345.00
HMN4104B	IMPRES RSM DSPLY W JACK, W CHNL	375.00
NNTN7065B	IMPRES CHG MU MACKINAW US/NA/CA/LA	788.00
NNTN7073B	IMPRES CG MUD MACKINAW US/NA/CA/LA	1,350.00
NNTN7586A	APX DUAL UNIT CHARGER WITHOUT DISPLAY	295.00
NNTN7593A	CHR IMP DISP DUC EXT US/NA/CA/LA	375.00
NNTN7624B	CHR IMP VEH EXT NA/EU KIT	390.00
NNTN7676C	FLEET MANAGEMENT RELEASE 1.2	10.00
NNTN7677A	FLEET MANAGEMENTCHRGR INTERFACEUNIT	80.00
NNTN7686A	IMPRESMUC ADAPTER	207.00
NNTN7687A	IMPRES SUC ADAPTER	45.00
NNTN804SA	CHARGR INTRFCE UNT GEN1 IMPRES SUC	35.00
NNTN8111B	APX7000XE CC 2.75 SWLBL2900/2150MAH	65.00
NNTN8112A	ASSEMBLY,ACCESSORY,APX7000XE CC 3 FIX BL 2900/2300/2150MAH LIION	62.00
NNTN8113A	ASSEMBLY,ACCESSORY,APX7000XE CC 2.75 SWL BL 4100 & 4200MAH LIION	65.00
NNTN8114A	ASSEMBLY,ACCESSORY,APX7000XE CC 3 FIX BL 4100 & 4200MAH LIION	62.00
NNTN811SA	ASSEMBLY,ACCESSORY,APX7000XE CC 2.75 SWL BL 2000/2100MAH NIMH	65.00
NNTN8116A	ASSEMBLY,ACCESSORY,APX7000XE CC 3 FIX BL 2000/2100MAH NIMH	62.00
NTN2570C	ASSEMBLY ACCESSORY WIRELESS ACCY KIT NFP 12 CABLE	295.00
NTN2571B	ASSEMBLY, ACCESSORY, WIRELESS ACCY KIT, NFP	139.00
NTN2573C	ASSEMBLY ACCESSORY WIRELESS ACCY KIT NFP 9.5 CABLE	295.00
NTNS243A	STRAP	23.00
NTN8266B	BELT CLIP KIT	12.00
NTN9179A	HIGH ACTIVITY SWIVEL D CLIP & BELT LOOP	42.00
PMLN4620A	D-SHELL RX-ONLY EARPIECE(3.5MM)	19.00
PMLN5101A	IMPRES TEMPLE TRANSDUCER	280.00
PMLN5111A	IMPRES 3 WIRE W/ TRANS TUBE-BLK	153.00
PMLN5111A	IMPRES 3 WIRE W/ TRANS TUBE-BLK	173.00
PMLNS112A	IMPRES 3 WIRE W/ TRANS TUBE-BGE	153.00
PMLN5112A	IMPRES 3 WIRE W/ TRANS TUBE-BGE	173.00
PMLN5275B	HEAVY DUTY HEADSET PMLN5275B	485.00
PMLNS322B	NYLON CASE 3" FIX BL 2500MAH	47.00
PMLNS323B	LEATHER CASE 3" FIX BL 2500MAH	67.00
PMLN5324B	LEATHER CASE 2.75" SWL BL 2500MAH	65.00
PMLN5325A	NYLON CASE 3" FIX BL 4200MAH	50.00
PMLN5326B	LEATHER CASE 3" FIX BL 4200MAH	69.00
PMLN5327B	LEATHER CASE 2.75" SWL BL 4200MAH	67.00
PMLN5328A	NYLON CASE 3" FIX BL 2100MAH	49.00
PMLN5329A	LEATHER CASE 3" FIX BL 2100MAH ??	69.00
PMLN5330B	LEATHER CASE 2.75" SWL BL 2100MAH	67.00
PMLN5331A	MACKINAW BASIC CARRY HOLDER	29.00
PMLN5407A	2.5" REPLACEMENT SWIVEL BELT LOOP	12.00
PMLN5408A	APX 2.75" REPLACEMENT SWIVEL BELT LOOP	12.00
PMLN5409A	APX 3" REPLACEMENT SWIVEL BELT LOOP	12.00
PMLN5560B	APX FLIP CARRY CASE	75.00
PMLN5657A	APX6000 CC 2.75" SWLBL 2900&2150MAH	65.00
PMLN5658A	APX6000 CC 3 FIX BL 2900&2150MAH	67.00

PMLN5659A	APX6000 CC 2.75 SWL BL 4200MAH	67.00
PMLN5660A	APX6000 CC 3 FIX BL 4200MAH	69.00
PMLN5709A	APX6000 UNIVERSAL CARRY HOLDER	29.00
PMLN5720A	CARRY CASE STRAP WITH SNAPS	20.00
PMMN4059A	PSM IP5S WITH 3.5MM JACK RX 18"	164.00
PMMN4059B	PSM IP5S WITH 3.5MM JACK RX 18IN	164.00
PMMN4060B	PSM IP5S WITH 3.5MM JACK RX 24IN	164.00
PMMN4061B	PSM IP5S WITH 3.5MM JACK RX 30IN	164.00
PMMN4062A	APX IMPRES RSM, NOISE CANC. EMERGENCY BUTTON 3.5MM JACK IP54	107.00
PMMN4065A	IMPRES RSM, IP57	97.00
PMMN4069A	IMPRES RSM, 3.5MM JACK, IP55	110.00
RLN4760A	RT CSTM EARPC SZ:SM USED W/NTN8371A	20.50
RLN4761A	RT CSTM EARPC MED USED W/NTN8371A	20.50
RLN4762A	RT CSTM EARPC LGE USED W/NTN8371A	20.50
RLN4763A	LFT CSTM EARPC SM USED W/NTN8371A	20.50
RLN4764A	LFT CSTM EARPC MED USED W/NTN8371A	20.50
RLN4765A	LFT CSTM EARPC LGE USED W/NTN8371A	20.50
RLN4941A	REC ONLY EARPIECE W/TRANSLUCET TUBE	58.00
RLN5878A	1 WIRE SURVEILLANCE KIT-BLK	40.00
RLN5879A	1 WIRE SURVEILLANCE KIT -BGE	40.00
RLN5883A	IMPRES 2 WIRE W/TRAN5 TUBE-BGE	105.00
RLN5883A	IMPRES 2 WIRE W/TRANS TUBE-BGE	122.00
RLN5886A	SURVEILLANCE LOW NOISE KIT	20.00
RLN5887A	SURVEILLANCE HIGH NOISE KIT	32.00
RLN6434A	APX TRAVEL CHARGER	101.00
RMN5058A	CORE L/W HEADSET	99.00
WADN4190B	EAR RCVR W/COIL CBL&3.5MM PLUG	43.00
WPLN7080A	IMPRES CG SU APX7000 US/NA/CA/LA	125.00
NNTN8092	IMPRES LiIon 2300mAh Submersible (Delta T)Battery - Ruggedized (FM)	$140.00
PMNN4403	IMPRES LiIon 2150mAh "Slim" (IP67) Battery	$125.00
AARLN4885B	RECEIVE ONLY EARBUD FOR REM SPK MIC	$25.00
HMN4101A	IMPRES RSM NO DSPLY W JACK, NO CHNL	$300.00
HMN4103A	IMPRES RSM DSPLY W JACK, NO CHNL	$345.00
HMN4104A	IMPRES RSM DSPLY W JACK, W CHNL	$375.00
NNTN7033A	BATT IMP FM IP67 LIION 4100M 4300T	$175.00
NNTN7034A	BATT IMP STD IP67 LIION 4200M 4400T	$160.00
NNTN7035A	BATT IMP FM R NIMH 2000M 2200T	$147.00
NNTN7036A	BATT IMP FM IP67 NIMH 2000M 2200T	$142.00
NNTN7037A	BATT IMP STD IP67 NIMH 2100M 2300T	$125.00
NNTN7038A	BATT IMP STD IP67 LIION 2900M 3100T	$140.00
NNTN7065B	IMPRES CHG MU MACKINAW US/NA/CA/LA	$788.00
NNTN7073B	IMPRES CG MUD MACKINAW US/NA/CA/LA	$1,350.00
NNTN7392A	ASSY, KIT, IMPRES BATTERY DATA READER	$250.00
NNTN7573A	BATT IMP STD R NIMH 2100M 2300T	$130.00
NNTN7586A	CHR IMP DUC EXT US/NA/CA/LA	$295.00
NNTN7593A	CHR IMP DISP DUC EXT US/NA/CA/LA	$375.00
NNTN7624B	CHR IMP VEH EXT NA/EU KIT	$390.00
NNTN7676B	FLEET MANAGEMENT RELEASE 1.0	$10.00
NNTN7677A	FLEET MANAGEMENTCHRGR INTERFACEUNIT	$80.00
NNTN7686A	IMPRESMUC ADAPTER	$72.00
NNTN7687A	IMPRES SUC ADAPTER	$14.30
NNTN8045A	CHARGR INTRFCE UNT GEN1 IMPRES SUC	$35.00

NTN2570A	WIRELESS ACCY KIT, NFP, 12" CABLE	$295.00
NTN2573A	WIRELESS ACCY KIT, NFP, 9.5" CABLE	$295.00
PMLN5101A	IMPRES TEMPLE TRANSDUCER	$280.00
PMLN5111A	IMPRES 3 WR W/TRANS TUBE BLK	$153.00
PMLN5112A	IMPRES 3 WR W/TRANS TUBE BEIGE	$153.00
PMLN5275B	HEAVY DUTY HEADSET PMLN5275B	$485.00
PMLN5322B	NYLON CASE 3" FIX BL 2500MAH	$47.00
PMLN5323B	LEATHER CASE 3" FIX BL 2500MAH	$67.00
PMLN5324B	LEATHER CASE 2.75" SWL BL 2500MAH	$65.00
PMLN5325A	NYLON CASE 3" FIX BL 4200MAH	$50.00
PMLN5326A	LEATHER CASE 3" FIX BL 4200MAH	$69.00
PMLN5326B	LEATHER CASE 3" FIX BL 4200MAH	$69.00
PMLN5327B	LEATHER CASE 2.75" SWL BL 4200MAH	$67.00
PMLN5328A	NYLON CASE 3" FIX BL 2100MAH	$49.00
PMLN5329A	LEATHER CASE 3" FIX BL 2100MAH ??	$69.00
PMLN5330B	LEATHER CASE 2.75" SWL BL 2100MAH	$67.00
PMLN5331A	MACKINAW BASIC CARRY HOLDER	$29.00
PMLN5660A	APX6000 CC 3 FIX BL 4200MAH	$69.00
PMMN4059A	PSM IP55 WITH 3.5MM JACK RX 18"	$164.00
PMMN4060A	P5M IP55 WITH 3.5MM JACK RX 24"	$164.00
PMMN4061A	P5M IP55 WITH 3.5MM JACK RX 30"	$164.00
PMMN4062A	PLU5 R5M NC IP54 3.5MM JACK RX	$107.00
PMMN4065A	IMPRE5 RSM, IP57	$97.00
PMMN4069A	IMPRES RSM, 3.5MM JACK, IP55	$110.00
PMNN4403A	BATT IMP STD IP67 LIION2150M2200T	$125.00
RLN587BA	SURVEILLANCE KITS CORE 1 WIRE BLK	$40.00
RLN5879A	SURVEILLANCE KIT CORE 1 WIRE - BGE	$40.00
RLN5880A	SMART CORE 2 WIRE - BLK	$105.00
RLN5881A	SMART CORE 2 WIRE - BIEGE	$105.00
RLN5882A	IMPRES 2 WR W/TRANS TUBE BLK	$122.00
RLN5882A	IMPRES 2 WR W/TRANS TUBE BLK	$105.00
RLN5883A	IMPRES 2 WR W/TRANS TUBE BEIGE	$105.00
RLN5883A	IMPRES 2 WR W/TRANS TUBE BEIGE	$122.00
RLN5886A	SURVEILLANCE LOW NOISE KIT	$20.00
RLN5887A	SURVEILLANCE HIGH NOISE KIT	$32.00
RLN6434A	APX TRAVEL CHARGER	$101.00
WADN4190B	EAR RCVR W/COIL CBL&3.5MM PLUG	$43.00
PMKN4012A	APX DMR PORT PROGRAMMING CABLE	$75.00
WPLN6904A	KEYLOAD CABLE FOR APX7000	$110.00
RVN5224J	CPS R05.01.00 ASTRO DIG APX POR MOB	$375.00
RLN6424	RECEIVE ONLY EARPIECE	$71.50
RMN5116	BOOMLESS TEMPLE TRANSDUCER	$248.00
3075336B17	REPLACEMENT CORD	$90.00
0105954U29	REPLACEMENT TUBE	$7.90
67009254001	REPLACEMENT EARTIP	$9.95
RLN6075	REPLACMENT CORD	$85.00
RLN4941	RECEIVE ONLY EARPIECE	$58.00
RMN505B	LIGHTWEIGHT HEADSET	$99.00
PMLN5709	UNIVERSAL CARRY HOLDER	$29.00
PMLN5880	UNIVERSAL CARRY HOLDER XE	$29.00
NTN9179	LEATHER SWIVEL	$42.00
NTN9212	REPLACEMENT D CLIP	$30.00

NTN9213	REPLACEMENT LEATHER SWIVEL	$20.00
NNTN8112	LEATHER CARRY CASE	$62.00
NNTN8114	LEATHER CARRY CASE	$62.00
NNTN8116	LEATHER CARRY CASE	$62.00
NNTN8111	LEATHER CARRY CASE	$65.00
NNTN8113	LEATHER CARRY CASE	$65.00
NNTN8115	LEATHER CARRY CASE	$65.00
PMLN5658	LEATHER CARRY CASE	$67.00
PMLN5660	LEATHER CARRY CASE	$69.00
PMLN5876	LEATHER CARRY CASE	$62.00
PMLN5879	LEATHER CARRY CASE	$62.00
PMLN5657	LEATHER CARRY CASE	$65.00
PMLN5659	LEATHER CARRY CASE	$67.00
PMLN5875	LEATHER CARRY CASE	$65.00
PMLN5877	LEATHER CARRY CASE	$65.00
PMLN5560	LEATHER CARRY CASE	$75.00
PMLN5407	BELT LOOP	$12.00
PMLN5409	BELT LOOP	$12.00
PMLN5408	BELT LOOP	$12.00
NTN8266	BELT CLIP FOR PORTABLE	$12.00
HLN6875	BELT CLIP FOR PORTABLE	$12.00
NTN5243	CARRY STRAP	$23.00
4200865599	LEATHER BELT	$20.00
NAF5085	ANTENNA	$45.00
PMAE4065	ANTENNA	$21.00
NAR6593	ANTENNA	$38.00
NAR6595	ANTENNA	$29.00
FAF5259A	ANTENNA	60.00
FAF5260	ANTENNA	60.00
NAR6594	ANTENNA	$75.00
PMAS4000	ANTENNA	$31.00
PMAT4001	ANTENNA	$44.00
NAG4000	GPS ANTENNA	$18.00
PMAF4002	STUBBY ANTENNA	$12.00
PMNN4403	BATTERY	$125.00
NNTN8092	BATTERY	$140.00
NNTN7080	CHARGER	$125.00
HKVN4036	LICENSE KEY	$489.00
NHN7012AS	APX 7000 Model 1 - Black Sleeve	$55.00
NHN7011A5	APX 7000 Model 3 - Black Sleeve	$60.00
NHN7058AS	APX 7000 Model 1 - Yellow Sleeve	$55.00
NHN7054AS	APX 7000 Model 3 - Yellow Sleeve	$58.00
NHN7063AS	APX 7000 Model 1 - Green Sleeve	$55.00
NHN7062AS	APX 7000 Model 3 - Green Sleeve	$58.00
NHN7060AS	APX 7000 Model 1 - Blue Sleeve	$55.00
NHN7056AS	APX 7000 Model 3 - Blue Sleeve	$58.00
NHN70S9AS	APX 7000 Model 1 - Orange Sleeve	$55.00
NHN7055AS	APX 7000 Model 3 - Orange Sleeve	$58.00
NHN7061AS	APX 7000 Model 1 - Red Sleeve	$55.00
NHN70S7AS	APX 7000 Model 3 - Red Sleeve	$58.00
NHN7030AS	APX 6000 Model 1 - Black Sleeve	$72.00
NHN7027AS	APX 6000 Model 2 - Black Sleeve	$70.00

NHN7024AS	APX 6000 Model 3 - Black Sleeve	$65.00
NHN7031AS	APX 6000 Model 1 - Yellow Sleeve	$72.00
NHN7028AS	APX 6000 Model 2 - Yellow Sleeve	$75.00
NHN7025AS	APX 6000 Model 3 - Yellow Sleeve	$65.00
NHN7032AS	APX 6000 Model 1 - Green Sleeve	$72.00
NHN7029AS	APX 6000 Model 2 - Green Sleeve	$76.00
NHN7026AS	APX 6000 Model 3 - Green Sleeve	$65.00
NHN7073AS	APX 6000 Model 1 - Blue Sleeve	$99.00
NHN7074AS	APX 6000 Model 2 - Blue Sleeve	$86.00
NHN7075AS	APX 6000 Model 3 - Blue Sleeve	$87.00
NHN7070AS	APX 6000 Model 1 - Orange Sleeve	$99.00
NHN7071AS	APX 6000 Model 2 - Orange Sleeve	$83.00
NHN7072AS	APX 6000 Model 3 - Orange Sleeve	$82.00
NHN7076AS	APX 6000 Model 1 - Red Sleeve	$99.00
NHN7077AS	APX 6000 Model 2 - Red Sleeve	$86.00
NHN7078AS	APX 6000 Model 3 - Red Sleeve	$87.00
NNTN8203	XE FIRE RSM	$335.00



ASTRO® Digital XTL 1500 Mobile
136 - 174 MHz Band
Secure and Trunked Radio Systems

Ship Card

Features

All XTL 1500 Mobiles are available with the following hardware features:

- 10 Foot Negative Ground Power Cable (3 meters) for Dash Mount
- Ignition Sense Cable
- Palm Microphone
- Internal Speaker (Standard)
- Mounting Hardware

All XTL 1500 radios are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades.

General Information

XTL 1500 Catalog Sheet

XTL 1500 VHF Ordering Guide

The XTL 1500 Mobile Line offers 1 radio hardware model:

Hardware Mode	Modes	Alphanumeric Display
		Lines/Characters
		per Line
CH	48	1/8

OPERATING MODES

XTL 1500 Radio Models are capable of operating in four different voice communication modes:

- 3600 Analog Trunking
- 3.6KB ASTRO Digital (both clear and coded voice)
- 9.6KB ASTRO Digital (both clear and coded voice)
- Digital Conventional

The mode of operation is programmed on a channel-by-channel basis. The XTL 1500 is capable of transmitting clear analog voice or clear (unencrypted) ASTRO digital voice, depending on the channel programming. XTL 1500 radio functions include ASTRO Digital signaling and digital coding.

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the XTL 1500 Mobile Radio Series. Separation of frequencies can be as wide as the allowable sub-band per radio model with no degradation of any performance specifications. **If an incorrect antenna is used, degraded performance may be experienced.**

COMMON AIR INTERFACE

Conventional channels are P25 compliant with the ASTRO Digital CAI Operation Software. ASTRO P25 Trunking Software must be ordered for P25 compliance in trunked systems.

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders whan Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on APX 7000 Dual Display Portable radios. Advanced Messaging is NOT supported on APX 7000 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for APX Mobiles Require: (Note: some control heads are not available on all main models)

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- P25 Conventional (G48)
- Packet Data Interface (W947)

OR

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking Software (G361)
- Packet Data Interface (W947)

***NOTE:** There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionelity carries a per-radio cherge on the server side of $50 (one time license fee to eccess messeging services) per radio. When edding query the fee is $125 per radio. For additional ordering guidelines of the AMS feeture which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

Ordering Requirements

The XTL 1500 Digital Mobile Radio has been set up to simplify ordering of hardware and software for customers.

- The main model number consists of: the mobile transcaiver or "brick" for the frequency band and power level, control head hardware, control head software, dash mount capability, mounting hardware, power cable, ignition sense cable, and microphone.
- The XTL 1500 radio also includes an internal speaker.

- Any additional accessories that are required can be ordered as options.
- A software *enhanced* version of each system software package can be ordered as an option if customers require any of the capacity and feature capabilities described below:

  - Enhancements to a **DIGITAL** system will include: 512 channels, ADP (G193), Data Capability (W947), 16 trunked systems, 16 trunked personalities, 20 call lists, 25 call list members, and 20 scan lists.

    OR

  - Enhancements to an **ANALOG** system include: 512 channels, 16 trunked systems, 16 trunked personalities, 20 call lists, 25 call list members, and 20 scan lists. Note: This enhancement package does NOT include ADP (G193) or Data (W947) capability.

Ordering Sequence
Order Example:

1	M28KSS9PW1AN	XTL 1500 Mobile
1A	GXXX	System Software Package
1B	GXXX	Standard Antenna
1C	Etc.	Other Options
1D	G798, G91	Control Station

- **1 Main Line Item**
  - **Order** the XTL 1500 model number.

- **1A Sub-Items**
  - **Order** the **System Software Package**
    - Select 1 system software package (Standard - G788, G789, G790, G809).
    - If additional capacity or feature capabilities are desired, order software enhanced system software package (Software Enhanced – G964, G965, G966, G967).
    - Refer to the matrices below for specific features available with each package (option).

- **1B Accessories**
  - **Order** one (1) Antennas (G296, G297, G299, G300) or No Antenna Needed (G69).

- **1C Etc.**
  - If additional speaker is required, **order** external speaker (B18).

- **1D Control Station**
  - If control station operation is required, **order** Control Station Base Mount (G798) and Power Supply with power cable (G91).
  - No external speaker should be ordered for control station operation as the mobile includes an internal speaker as standard.

Each hardware model must be ordered with 1 of the System Software Package options listed below. Please refer to the list of features and capabilities that corresponds to the system type to be ordered.

COMMON SOFTWARE FEATURES SUPPORTED BY "SmartZone® System Packages"	

	"3600 Analog Trunking"	"3.6KB ASTRO Digital"	"9.6KB ASTRO Digital"	"Digital Conventional"
	G809	G789	G788	G790
			Project 25	Project 25
RADIO WIDE FEATURES				
48 Modes / Channels	Yes	Yes	Yes	Yes
Analog or Digital Operation	No	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable *ADP supported when Software Enhancement Peckage is ordered (see corresponding matrix below).	No*	No*	No*	No*
One Touch Operation	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified in the APCO Project 25 documents.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed)	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
MDC PTT ID (Encode / Decode)	Encode	Yes	Yes	Yes
MDC Selective Radio Inhibit (Decode)	Yes	Yes	Yes	Yes
MDC Call Alert (Encode / Decode)	Yes	Yes	Yes	Yes
MDC Radio Check (Decode)	Yes	Yes	Yes	Yes
MDC Voice Selective Call (Encode / Decode)	Yes	Yes	Yes	Yes
MDC Remote Monitor	N/A	N/A	N/A	Yes
MDC Call Lists (Call Alert / Selective Call)	Yes	Yes	Yes	Yes
MDC Emergency Call (Encode / Decode)	Yes	Yes	Yes	Yes
MDC Emergency PTT ID (Encode)	Encode	Yes	Yes	Yes
MDC Emergency Alarm (Encode)	Yes	Yes	Yes	Yes
MDC Emergency w/ Voice to Follow	Future R6.8	Future R6.8	Future R6.8	Future R6.8
MDC Select Emergency	Yes	Yes	Yes	Yes
MDC Status (Encode)	Yes	Yes	Yes	Yes
MDC Message (Encode)	Yes	Yes	No	Yes
MDC Silent Emergency (Encdode)	Yes	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Interoperable Features when used in the ASTRO Digital CAI Mode				
Unaddressed Voice Call	No	Yes	Yes	Yes
Talk Group Call	No	Yes	Yes	Yes
Group Call Alert™	No	Yes	Yes	Yes
Talk Group Identification (TGID)	No	Yes	Yes	Yes
Selective Call (Individual Voice Call)	No	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	No	Yes	Yes	Yes
PTT ID (Individual Identification)	No	Yes	Yes	Yes
Call Alert Encode/Decode	No	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	No	Yes	Yes	Yes

Telephone Interconnect Unlimited (Encode / Decode)	No	Yes	Yes	Yes
Unlimited	No	Yes	Yes	Yes
Selective Radio Inhibit	No	Yes	Yes	Yes
Radio Check	No	Yes	Yes	Yes
Status/Message	No	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Smart PTT	No	Yes	Yes	Yes
SmartZone OmniLink	Yes	Yes	Yes	No
Trunking Type II Only Features				
20 Trunked Systems (Maximum)	Yes	Yes	Yes	N/A
Talkgroup Calls	Yes	Yes	Yes	N/A
PTT ID	Yes	Yes	Yes	N/A
Call Alert Encode / Decode	Yes	Yes	Yes	N/A
Dual Mode Scan	Yes	Yes	Yes	N/A
Failsoft by Talkgroup	Yes	Yes	Yes	N/A
Telephone Interconnect Unlimited (Encode / Decode)	Yes	Yes	Yes	N/A
System Wide Call (Receive Only)	Yes	Yes	Yes	N/A
Selective Radio Inhibit	Yes	Yes	Yes	N/A
Priority Monitor Scan	No	No	No	N/A
Dynamic Regrouping	Yes	Yes	Yes	N/A
Status / Message (no DEK)	Yes	Yes	Yes	N/A
Dispatcher Interrupt	No	No	No	N/A
Private / Enhanced Conversation Encode / Decode	Yes	Yes	Yes	N/A
Radio Trace	Yes	Yes	No	N/A
Reprogram Request	Yes	Yes	Yes	N/A
Voice on Control	Future	Future	Future	N/A
SmartZone Automatic Site Registration	Yes	Yes	Yes	N/A
SmartZone RSSI Operation	Yes	Yes	Yes	N/A
SmartZone Busy Override	No	No	No	N/A
SmartZone Preferred Site	Yes	Yes	Yes	N/A
SmartZone Forced Site Search	Yes	Yes	Yes	N/A
SmartZone Site Lock/Unlock	Yes	Yes	Yes	N/A
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	N/A
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	N/A

Additional features / capabilities are available by ordering 1 of the "software enhanced" System Software Options (see below). When ordering the software enhanced system software options, customers will get the features / capabilities listed below **in addition to** those specified in the above matrix. Please refer to the feature / capability column that corresponds to the system type ordered.

"ADDITIONAL" FEATURES / CAPABILITIES SUPPORTED WITH SOFTWARE ENHANCEMENT PACKAGE

	"3600 Analog Trunking"	"3.6KB ASTRO Digital"	"9.6KB ASTRO Digital"	"Digital Conventional"
	G967	**G965**	**G964**	**G966**
			Project 25	Project 25
512 Channels	Yes	Yes	Yes	Yes
20 Trunked Systems	Yes	Yes	Yes	No
50 Trunked Personalities	Yes	Yes	Yes	No
Call Lists: 3600 Trunking - 20 lists 9600 Trunking & Digital Conventional - 10 lists MDC - 50 lists	Yes	Yes	Yes	Yes

Call List Members: 3600 Trunking & 9600 Trunking - 25 call list members Conventional & MDC - 50 call list members *Digital*	Yes	Yes	Yes	Yes
20 Scan Lists	Yes	Yes	Yes	Yes
ADP (G193) *ADP is only supported on 9600 trunking or on digital conventional channels.	No	Yes*	Yes	Yes
Data (W947)	No	Yes	Yes	Yes

FCC Information

Band/Model	Power Output	Transmitter Certification (Type Acceptance)	Emissions	Applicable Rules
136 174 MHz	10 - 50 Watts	AZ492FT3806	8K10F1D, 8K10F1E, 11K0F3E, 16K0F3E, 20K0F1E, 20K0F1D	22, 74, 90

FCC Approval achieved through Class I Permissive Change to Transmitter.

- Except for itinerant and low-power incidant channels.

** Itinerant & Low-Power Incident Channels	
Channel Number	Frequency Range (MHz)

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA Ç Canada personnel refer to Section A under CANADA ONLY Information.

Models

Description	Nomenclature	APC	Price
XTL 1500 MOBILE 10-50 WATT, 136-174MHZ	M28KSS9PW1 N	726	$1,600.00

Options

System Software Options

Description	Nomenclature	APC	Price
ENH: 9600 DIGITAL BAUD	G788	775	$630.00
ENH: 3600 ASTRO DIGITAL	G789	775	$530.00
ENH: SOFTWARE P25 CONVENTIONAL	G790	775	$130.00
ENH: 3600 ANALOG BAUD	G809	775	$230.00
ADD: XTL1500 RADIO AUTHENTICATION	W391	775	$100.00

Software Enhanced System Software Options

(Do NOT select any of the above system software options IF ordering 1 of the system software options below.)

Description	Nomenclature	APC	Price
9600 ASTRO DIGITAL ENHANCE	G964	775	$830.00
ENH: 3600 ASTRO DIGITAL ENHANCE	G965	775	$730.00
ENH: P25 DIGITAL CONVL ENHANCE	G966	775	$330.00
ENH: ANALOG 3600 BAUD ENHANCED	G967	775	$430.00

System Enhancement Features

Description	Nomenclature	APC	Price
ENH: OVER THE AIR PROVISIONING Compatible with P25 Trunking only. Requires W947 (packet data) which comes with ordering an Enhanced Digital System Software option.	G996	726	$100.00
ENH: RADIO TRACE AND REMOTE MONITOR	G170	775	$75.00

Alarm

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAYS AND CABLE For either HORN or LIGHTS. NOT both	W116	500	$75.00

Antenna

Description	Nomenclature	APC	Price
ANTENNA 1/4 WAVE WHIP ROOF TOP (136-144 MHZ) Corresponding kit: HAD4006 Corresponding Motorcycle kit: RAD4002ARB	G296	585	$13.50
ANTENNA 1/4 WAVE ROFF TOP VHF (144-150.8 MHZ) Corresponding kit: HAD4007 Corresponding Motorcycle kit: RAD4003ARB	G297	585	$13.50
ANTENNA 1/4 WAVE ROOF TOP VHF (150.8-162 MHZ) Corresponding kit: HAD4008 Corresponding Motorcycle kit: RAD4004ARB	G299	585	$19.50
ANTENNA 1/4 WAVE ROOF TOP VHF (162-174 MHZ) Corresponding kit: HAD4009 Corresponding Motorcycle kit: RAD4005ARB	G300	585	$13.50
ANTENNA, VHF (136-174MHZ, 3.4 BANDWIDTH) 3DB ROOF TOP Not Compatible with Motorcycle Corresponding kit: HAD4022A.	G301	585	$58.50
ADD: 1/4 WAVE BROADBAND ANT 146-174 MHZ Not Compatible with Motorcycle Corresponding kit: HAD4017.	G629	585	$64.00
ADD: NO ANTENNA NEEDED	G89	500	$0.00

Control Station Operation

Description	Nomenclature	APC	Price
ADD: CONTROL STATION POWER SUPPLY Corresponding kit: HPN4007	G91	500	$269.00
ADD: CONTROL STATION MOUNT	G798	775	$70.00

Emergency

Description	Nomenclature	APC	Price
ADD: EXTERNAL EMERGENCY FOOTSWITCH Corresponding kit: HLN5113.	W470	500	$56.00
ADD: EXT EMERGENCY PUSHBUTTON Corresponding kit: HLN5131	W688	500	$56.00

Microphones

Description	Nomenclature	APC	Price
ALT: CONTROL STATION MICROPHONE	W382	500	$169.00
Dash Mount Required Corresponding Kit: RMN5070			
ADD: KEYPAD MIC (GCAI)	W20	514	$180.00
Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079			

Service Options (These Service options are NOT applicable for Asia Pac)

REPAIR SERVICE ADVANTAGE
Provides for extended hardware repair coverage beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$64.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 3 YR CANADA EXTND WRNTY XTL	GA00313	386	$177.00
ENH: 5 YR CANADA EXTND WRNTY XTL	GA00316	386	$240.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$246.00

REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive covarage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomanclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00

Speakers

Description	Nomenclature	APC	Price
ADD: AUXILARY SPKR SPECTRA 7.5 WATT	B18	500	$60.00
Corresponding kit: HSN4031.			

Miscellaneous

Description	Nomenclature	APC	Price
ADD: KEY LOCK MOUNT	W81	500	$33.00

Accessories

Antenna

Description	Nomenclature	APC	Price
ANTENNA, VHF (136-144MHZ) 1/4 WAVE ROOF TOP	HAD4006	554	$19.50
High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less then 1.5:1, Impedance 50 Ohmns, nominal			
ANTENNA, VHF (144-150.8 MHZ) 1/4 WAVE ROOF TOP	HAD4007	554	$19.50
High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less then 1.5:1, Impedance 50 Ohmns, nominal			
ANTENNA, VHF (150.8-162 MHZ) 1/4 WAVE ROOF TOP	HAD4008	554	$19.50

High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less then 1.5:1, Impedance 50 Ohmns, nominal ANTENNA, VHF (162-174 MHZ) 1/4 WAVE ROOF TOP	HAD4009	554	$19.50
High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohmns, nominal ANTENNA, VHF (136-174 MHZ 3.4 MHZ BANDWITH) 3DB ROOF TOP	RAD4010ARB	554	$82.00
High Band Base Loaded Antenna - Mini UHF connector, Roof Mount, RG5BA/u Cable, Rugged Duty, Frequency Range 136-174 MHz., Power: 150 Watts Max., Gain: 3 dB, nominal. VSWR: Less than 1.5:1, Impedance: 50 Ohms, nominal			

Cable (s)

Description	Nomenclature	APC	Price
POWER CABLE, 10 FT. (LOW/MID POWER) 30 & 35 WATT	HKN4191	412	$18.00

Control Station

Description	Nomenclature	APC	Price
CONTROL STATION MOUNT	HLN8925	775	$95.00
PS 14V 10A 117/240 VAC.	HPN4007C	500	$296.00

Customer Programming Software

Emergency

Description	Nomenclature	APC	Price
EMERGENCY FOOT SWITCH	HLN5113	604	$61.75

Speakers

Description	Nomenclature	APC	Price
EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	HSN4038	476	$60.50

Microphones

MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	706	$295.00
XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00

Vehicle Location Solution

Vehicle Location Solution

Vehicle location or GPS is now available on the ASTRO 25 XTL 1500 mobile radio.

The TrimFleet ™ GPS mobile units provide a versatile and economical platform for mobile positioning applications. Using state-of-the-art GPS receiver technology, the TrimFleet GPS receiver unit has been optimized for vehicle installation and operation, providing reliable vehicle position, direction, speed, time and status in any weather, anywhere in the world.

The TrimFleet receiver contains a 12-channel GPS module and an (optional) angular rate sensor module. The TrimFleet receiver connects directly to in-vehicle laptops/workstations ae well as VRM and XTL radios. The TrimFleet GPS receiver outputs positions when in GPS coverage via either of its RS-232C serial ports in National Marine Electronics Association Protocol (NMEA), Trimble ASCII Interface Protocol (TAIP) and Point to Point Protocol (PPP) formats. The TrimFleet receiver may be configured to send the position data in either protocol via the two RS-232C data ports. Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

The TrimFleet DRU Plus may be equipped with an optional internal module to provide dead reckoned position data while outside of GPS coverage. This is accomplished through the use of advanced gyroscopic technology in combination with connections to the vehicle speed sensor

and vehicle direction signal (forward or reverse.) Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

I/O PORTS

The TrimFleet DRU Plus provides two RS232C compatible communication ports that may be connected to external devices. One port provides a DE-9 female DCE connection, and the other port provides a DE-9 female DTE connection. The ports may be configured individually for baud rates between 110 and 115.2K baud. Both ports support NMEA and TAIP protocols. The default configuration for both ports is 9600 baud TAIP.

Also provided is support for PPP over RS232C on Port 1. An IP capable XTL 1500 radio may be interfaced to the port to allow wireless transmission of TAIP messages to an AVL server. The TAIP messages will be encapsulated in UDP packets and sent to a configurable destination IP address and port. TAIP messages may also be sent back to the TrimFleet DRU Plus by the AVL application to modify reporting rates and query current location or status.

Vehicle location is available only on ASTRO Conventional and Trunked IV&D Systems. Subscribers must have version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software.

Digital Conventional Ordering requirements for XTL 1500 Mobile:

- ASTRO Digital CAI Operation (G966)
- Mid Power RS232 Cable (HKN6160A)(Hooks to the J2 rectangular connector)

P25 Trunking Ordering requirements for XTL 1500 Mobile:

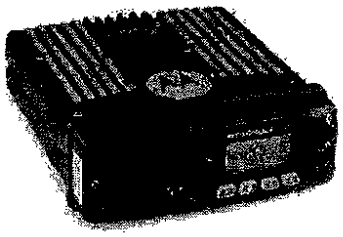
- ASTRO Project 25 Trunking 9600 Software (G964)
- Mid Power RS232 Cable (HKN6160A)(Hooks to the J2 rectangular connector)

Description	Nomenclature	APC	Price
TRIMFLEET DRU PLUS (W/DR & POWER CABLE)	DDN9439	222	$745.00

Description	Nomenclature	APC	Price
TRIMFLEET APU (W/POWER CABLE)	DDN9440	222	$620.00

Description	Nomenclature	APC	Price
TRIMFLEET GPS ANTENNA WITH CABLE	DDN9474	222	$99.00

Data Compiled 16-May-2013 using DUP and all prices in USD



ASTRO® Digital XTL 1500 Mobile
450 - 520 MHz Band
Secure and Trunked Radio Systems

Ship Card

Features

All XTL 1500 Mobiles are available with the following hardware features:

- 10 Foot Negative Ground Power Cable (3 meters) for Desh Mount
- Ignition Sense Cable
- Palm Microphone
- Internel Speaker (Standard)
- Mounting Herdware

All XTL 1500 radios ere part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades.

General Information

XTL 1500 Catelog Sheet

XTL 1500 UHF Range 2 Ordering Guide

The XTL 1500 Mobile Line offers 1 radio hardware model:

Hardware Mode	Modes	Alphanumeric Display
		Lines/Characters
		per Line
CH	48	1/8

OPERATING MODES

XTL 1500 Radio Models are capable of operating in four different voice communication modes:

- 3600 Analog Trunking
- 3.6KB ASTRO Digital (both clear and coded voice)
- 9.6KB ASTRO Digital (both clear and coded voice)
- Digital Conventional

The mode of operation is programmed on a channel-by-channel basis. The XTL 1500 is capable of transmitting clear analog voice or clear (unencrypted) ASTRO digital voice, depending on the channel programming. XTL 1500 radio functions include ASTRO Digital signaling and digital coding.

CHANNEL SPACING

There ere no maximum frequency separation conditions that must be adhered to on the XTL 1500 Mobile Radio Series. Separation of frequencies can be as wide as the allowable sub-band per radio model with no degradation of any performance specifications. If an **incorrect antenna is used, degraded performance may be experienced.**

COMMON AIR INTERFACE

Conventional channels are P25 compliant with the ASTRO Digital CAI Operation Software. ASTRO P25 Trunking Software **must** be ordered for P25 compliance in trunked systems.

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on APX 7000 Dual Display Portable radios. Advanced Messaging is NOT supported on APX 7000 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for APX Mobiles Require: (Note: some control heads are not available on all main models)

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- P25 Conventional (G48)
- Packet Data Interface (W947)

OR

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking Software (G361)
- Packet Date Interface (W947)

***NOTE:** There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

Ordering Requirements

The XTL 1500 Digital Mobile Radio has been set up to simplify ordering of hardware and software for customers.

- The main model number consists of: the mobile transceiver or "brick" for the frequency band and power level, control head hardware, control head software, dash mount capability, mounting hardware, power cable, ignition sense cable, and microphone.
- The XTL 1500 radio also includes an internal speaker.

- Any additional accessories that are required can be ordered as options.
- A software ***enhanced*** version of each system software packege can be ordered as an option if customers require any of the capacity and feature capabilities described below:

  - Enhancements to ***a DIGITAL*** system will include: 512 channels, ADP (G193), Data Capability (W947), 16 trunked systems, 16 trunked personalities, 20 call lists, 25 call list members, and 20 scan lists.

    OR

  - Enhancements to an **ANALOG** system include: 512 chennels, 16 trunked systems, 16 trunked personelities, 20 call lists, 25 call list members, and 20 scan lists. Note: This enhencement package does NOT include ADP (G193) or Data (W947) capability.

Ordering Sequence
~~Order Example:~~

1	M28SSS9PW1AN	XTL 1500 Mobile
1A	GXXX	System Software Package
1B	GXXX	Standard Antenne
1C	Etc.	*Other Options*
1D	G798, G91	Control Station

- **1 Main Line Item**
  - **Order** the XTL 1500 model number.

- **1A Sub-Items**
  - **Order** the **System Software Package**
    - Select 1 system software package (Standard - G788, G789, G790, G809).
    - If additional capacity or feature capabilities are desired, order software enhanced system software package (Software Enhanced – G964, G965, G966, G967).
    - Refer to the matrices below for specific features available with each package (option).

- **1B Accessories**

  - **Order** one (1) Antennas (G425, G428, G430, G486, G490, G493, G494) or No Antenne Needed (G89).

- **1C Etc.**

  - If additional speaker is required, **order** external speaker (B18).

- **1D Control Station**

  - If control station operation is required, **order** Control Station Base Mount (G798) and Power Supply with power cable (G91).
  - No external speaker should be ordered for control station operation as the mobile includes an internal speaker as standard.

Each hardware model must be ordered with 1 of the System Software Package options listed below. Please refer to the list of features and capabilities that corresponds to the system type to be ordered.

COMMON SOFTWARE FEATURES SUPPORTED BY

"SmartZone® System Packages"				
	"3600 Analog Trunking"	"3.6KB ASTRO Digital"	"9.6KB ASTRO Digital"	"Digital Conventional"
	G809	G789	G788	G790
			Project 25	Project 25
RADIO WIDE FEATURES				
48 Modes / Channels	Yes	Yes	Yes	Yes
Analog or Digital Operation	No	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable *ADP supported when Software Enhancement Package is ordered (see corresponding matrix below).	No*	No*	No*	No*
One Touch Operation	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified in the APCO Project 25 documents.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed)	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
MDC PTT ID (Encode / Decode)	Encode	Yes	Yes	Yes
MDC Selective Radio Inhibit (Decode)	Yes	Yes	Yes	Yes
MDC Call Alert (Encode / Decode)	Yes	Yes	Yes	Yes
MDC Radio Check (Decode)	Yes	Yes	Yes	Yes
MDC Voice Selective Call (Encode / Decode)	Yes	Yes	Yes	Yes
MDC Remote Monitor	N/A	N/A	N/A	Yes
MDC Call Lists (Call Alert / Selective Call)	Yes	Yes	Yes	Yes
MDC Emergency Call (Encode / Decode)	Yes	Yes	Yes	Yes
MDC Emergency PTT ID (Encode)	Encode	Yes	Yes	Yes
MDC Emergency Alarm (Encode)	Yes	Yes	Yes	Yes
MDC Emergency w/ Voice to Follow	Future R6.8	Future R6.8	Future R6.8	Future R6.8
MDC Select Emergency	Yes	Yes	Yes	Yes
MDC Status (Encode)	Yes	Yes	Yes	Yes
MDC Message (Encode)	Yes	Yes	No	Yes
MDC Silent Emergency (Encdode)	Yes	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Interoperable Features when used in the ASTRO Digital CAI Mode				
Unaddressed Voice Call	No	Yes	Yes	Yes
Talk Group Call	No	Yes	Yes	Yes
Group Call Alert™	No	Yes	Yes	Yes
Talk Group Identification (TGID)	No	Yes	Yes	Yes
Selective Call (Individual Voice Call)	No	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	No	Yes	Yes	Yes
PTT ID (Individual Identification)	No	Yes	Yes	Yes
Call Alert Encode/Decode	No	Yes	Yes	Yes

Emergency Alarm w/Channel Revert & Ack.	No	Yes	Yes	Yes
Telephone Interconnect Unlimited (Encode / Decode)	No	Yes	Yes	Yes
Unlimited	No	Yes	Yes	Yes
Selective Radio Inhibit	No	Yes	Yes	Yes
Radio Check	No	Yes	Yes	Yes
Status/Message	No	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Smart PTT	No	Yes	Yes	Yes
SmartZone OmniLink	Yes	Yes	Yes	No
Trunking Type II Only Features				
20 Trunked Systems (Maximum)	Yes	Yes	Yes	N/A
Talkgroup Calls	Yes	Yes	Yes	N/A
PTT ID	Yes	Yes	Yes	N/A
Call Alert Encode / Decode	Yes	Yes	Yes	N/A
Dual Mode Scan	Yes	Yes	Yes	N/A
Failsoft by Talkgroup	Yes	Yes	Yes	N/A
Telephone Interconnect Unlimited (Encode / Decode)	Yes	Yes	Yes	N/A
System Wide Call (Receive Only)	Yes	Yes	Yes	N/A
Selective Radio Inhibit	Yes	Yes	Yes	N/A
Priority Monitor Scan	No	No	No	N/A
Dynamic Regrouping	Yes	Yes	Yes	N/A
Status / Message (no DEK)	Yes	Yes	Yes	N/A
Dispatcher Interrupt	No	No	No	N/A
Private / Enhanced Conversation Encode / Decode	Yes	Yes	Yes	N/A
Radio Trace	Yes	Yes	No	N/A
Reprogram Request	Yes	Yes	Yes	N/A
Voice on Control	Future	Future	Future	N/A
SmartZone Automatic Site Registration	Yes	Yes	Yes	N/A
SmartZone RSSI Operation	Yes	Yes	Yes	N/A
SmartZone Busy Override	No	No	No	N/A
SmartZone Preferred Site	Yes	Yes	Yes	N/A
SmartZone Forced Site Search	Yes	Yes	Yes	N/A
SmartZone Site Lock/Unlock	Yes	Yes	Yes	N/A
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	N/A
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	N/A
Hear Clear	Yes	N/A	N/A	N/A

Additional features / capabilities are available by ordering 1 of the "software enhanced" System Software Options (see below). When ordering the software enhanced system software options, customers will get the features / capabilities listed below in addition to those specified in the above matrix. Please refer to the feature / capability column that corresponds to the system type ordered.

"ADDITIONAL" FEATURES / CAPABILITIES SUPPORTED WITH SOFTWARE ENHANCEMENT PACKAGE				
	"3600 Analog Trunking"	"3.6KB ASTRO Digital"	"9.6KB ASTRO Digital"	"Digital Conventional"
	G967	**G965**	**G964**	**G966**
			Project 25	Project 25
512 Channels	Yes	Yes	Yes	Yes
20 Trunked Systems	Yes	Yes	Yes	No
50 Trunked Personalities	Yes	Yes	Yes	No
Call Lists:	Yes	Yes	Yes	Yes

3600 Trunking - 20 lists Trunking & Digital Conventional - 10 lists	9600 MDC - 50 lists				
Call List Members: 3600 Trunking & 9600 Trunking - 25 call list members Conventional & MDC - 50 call list members	Digital	Yes	Yes	Yes	Yes
20 Scan Lists		Yes	Yes	Yes	Yes
ADP (G193) *ADP is only supported on 9600 trunking or on digital conventional channels.		No	Yes*	Yes	Yes
Data (W947)		No	Yes	Yes	Yes

FCC Information

Band/Model	Power Output	Transmitter Certification (Type Acceptance)	Emissions	Applicable Rules
450-520 MHz	10 - 45 Watts	AZ492FT4867	8K10F1D, 8K10F1E, 11K0F3E, 16K0F3E, 20K0F1E, 20K0F1D	22, 74, 90

FCC Approval achieved through Class I Permissive Change to Transmitter.

- Except for Itinerant and low-power incident channels.

** Itinerant & Low-Power Incident Channels	
Channel Number	Frequency Range (MHz)

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA Ç Canada personnel refer to Section A under CANADA ONLY information.

Models

Description	Nomenclature	APC	Price
XTL 1500 MOBILE 10-45 WATT, 450-520MHZ	M28SSS9PW1 N	726	$1,600.00

Options

System Software Options

Description	Nomenclature	APC	Price
ENH: 9600 DIGITAL BAUD	G788	775	$630.00
ENH: 3600 ASTRO DIGITAL	G789	775	$530.00
ENH: SOFTWARE P25 CONVENTIONAL	G790	775	$130.00
ENH: 3600 ANALOG BAUD	G809	775	$230.00
ADD: XTL1500 RADIO AUTHENTICATION	W391	775	$100.00

Software Enhanced System Software Options

(Do NOT select any of the above system software options IF ordering 1 of the system software options below.)

Description	Nomenclature	APC	Price
9600 ASTRO DIGITAL ENHANCE	G964	775	$630.00
ENH: 3600 ASTRO DIGITAL ENHANCE	G965	775	$730.00
ENH: P25 DIGITAL CONVL ENHANCE	G966	775	$330.00
ENH: ANALOG 3600 BAUD ENHANCED	G967	775	$430.00

System Enhancement Features

Description	Nomenclature	APC	Price
ENH: OVER THE AIR PROVISIONING	G996	726	$100.00
Compatible with P25 Trunking only. Requires W947 (packet data) which comes with ordering an Enhanced Digital System Software option.			
ENH: RADIO TRACE AND REMOTE MONITOR	G170	775	$75.00

Alarm

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAYS AND CABLE	W116	500	$75.00
For either HORN or LIGHTS NOT both			

Antenna

Description	Nomenclature	APC	Price
ANTENNA 1/4 WAVE WHIP 450-470 MHZ	G426	585	$25.00
Not Compatible with Motorcycle Corresponding kit: HAE4003.			
ANTENNA 3.5DB 450-470MHZ	G428	585	$50.00
Not Compatible with Motorcycle Corresponding kit: HAE4011.			
ADD: ADD: ANT 1/4 WAVE 470-512 MHZ	G490	585	$14.00
Not Compatible with Motorcycle Corresponding kit: HAE4004.			
ADD: ANTENNA 3 DB ROOF TOP 470-495	G493	585	$33.00
Not Compatible with Motorcycle Corresponding kit: HAE4012.			
ADD: ANTENNA 3 DB ROOF TOP 494-512 MHZ	G494	585	$33.00
Not Compatible with Motorcycle Corresponding kit: HAE4013.			
ADD: NO ANTENNA NEEDED	G89	500	$0.00

Control Station Operation

Description	Nomenclature	APC	Price
ADD: CONTROL STATION POWER SUPPLY	G91	500	$269.00
Corresponding kit: HPN4007			
ADD: CONTROL STATION MOUNT	G798	775	$70.00

Emergency

Description	Nomenclature	APC	Price
ADD: EXTERNAL EMERGENCY FOOTSWITCH	W470	500	$56.00
Corresponding kit: HLN5113.			
ADD: EXT EMERGENCY PUSHBUTTON	W688	500	$56.00
Corresponding kit: HLN5131			

Microphones

Description	Nomenclature	APC	Price
ALT: CONTROL STATION MICROPHONE	W382	500	$169.00
Dash Mount Required Corresponding Kit: RMN5070			
ADD: KEYPAD MIC (GCAI)	W20	514	$180.00

Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500.
Remote Monitor feature requires G170 software option.
Required for Emergency Hot Mic Operation.
Corresponding kit: HMN4079

Service Options (These Service options are NOT applicable for Asia Pac)

REPAIR SERVICE ADVANTAGE
Provides for extended hardware repair coverage beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$64.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 3 YR CANADA EXTND WRNTY XTL	GA00313	386	$177.00
ENH: 5 YR CANADA EXTND WRNTY XTL	GA00316	386	$240.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$246.00

REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping cherges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00

Speakers

Description	Nomenclature	APC	Price
ADD: AUXILARY SPKR SPECTRA 7.5 WATT	B18	500	$60.00

Corresponding kit: HSN4031.

Miscellaneous

Description	Nomenclature	APC	Price
ADD: KEY LOCK MOUNT	W81	500	$33.00

Accessories

Antenna

Description	Nomenclature	APC	Price
ANTENNA, UHF (450-470 MHZ) 1/4 WAVE ROOF MOUNT	HAE4003	554	$21.50
Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: Unity, VSWR: Less then 2:1, Impedance: 50 Ohms, nominal			
ANTENNA UHF (445-470 MHZ) 3.5DB GAIN ROOF MOUNT	HAE4011	554	$77.50
Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedance: 50 Ohms, nominal.			
ANTENNA, UHF (470-512 MHZ) 1/4 WAVE ROOF MOUNT	HAE4004	554	$20.00
Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: Unity, VSWR: Less then 2:1, Impedance: 50 Ohms, nominal			
ANTENNA, UHF (470-494 MHZ) 3.5DB GAIN ROOF TOP	HAE4012	554	$68.00
Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedance: 50 Ohms, nominal.			
ANTENNA, UHF (494-512 MHZ) 3.5DB GAIN ROOF TOP	HAE4013	554	$72.00
Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedance: 50 Ohms, nominal.			

ANTENNA UHF (445-470 MHZ) 5DB GAIN Roof Mount, SPECTRUM Base Loaded 5 dB Gain Antenna, Cable: RG58 A/U, Rugged Duty, Mini UHF connector.	RAE4014ARB	554	$110.00
ANTENNA UHF 1/4 WAVE	RAE4024ARB	554	$100.00
ANTENNA UHF (494-512 MHZ) 5DB GAIN Roof Mount, SPECTRUM Base Loaded 5 dB Gain Antenna, RG58 A/U Cable, Rugged Duty, Mini UHF connector	RAE4016ARB	554	$144.00

Cable (s)

Description	Nomenclature	APC	Price
POWER CABLE, 10 FT. (LOW/MID POWER) 30 & 35 WATT	HKN4191	412	$18.00

Control Station

Description	Nomenclature	APC	Price
CONTROL STATION MOUNT	HLN6925	775	$95.00
PS 14V 10A 117/240 VAC.	HPN4007C	500	$296.00

Customer Programming Software

Emergency

Description	Nomenclature	APC	Price
EMERGENCY FOOT SWITCH	HLN5113	604	$61.75

Speakers

Description	Nomenclature	APC	Price
EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	HSN4038	476	$60.50

Microphones

MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	706	$295.00
XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00

Vehicle Location Solution

Vehicle Location Solution

Vehicle location or GPS is now available on the ASTRO 25 XTL 1500 mobile radio.

The TrimFleet ™ GPS mobile units provide a versatile and economical platform for mobile positioning applications. Using state-of-the-art GPS receiver technology, the TrimFleet GPS receiver unit has been optimized for vehicle installation and operation, providing reliable vehicle position, direction, speed, time and status in any weather, anywhere in the world.

The TrimFleet receiver contains a 12-channel GPS module and an (optional) angular rate sensor module. The TrimFleet receiver connects directly to in-vehicle laptops/workstations as well as VRM and XTL radios. The TrimFleet GPS receiver outputs positions when

in GPS coverage via either of its RS-232C serial ports in National Marine Electronics Association Protocol (NMEA), Trimble ASCII Interface Protocol (TAIP) and Point to Point Protocol (PPP) formats. The TrimFleet receiver may be configured to send the position data in either protocol via the two RS-232C data ports. Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

The TrimFleet DRU Plus may be equipped with an optional internal module to provide dead reckoned position data while outside of GPS coverage. This is accomplished through the use of advanced gyroscopic technology in combination with connections to the vehicle speed sensor

and vehicle direction signal (forward or reverse.) Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

I/O PORTS

The TrimFleet DRU Plus provides two RS232C compatible communication ports that may be connected to external devices. One port provides a DE-9 female DCE connection, and the other port provides a DE-9 female DTE connection. The ports may be configured individually for baud rates between 110 and 115.2K baud. Both ports support NMEA and TAIP protocols. The default configuration for both ports is 9600 baud TAIP.

Also provided is support for PPP over RS232C on Port 1. An IP capable XTL 1500 radio may be interfaced to the port to allow wireless transmission of TAIP messages to an AVL server. The TAIP messages will be encapsulated in UDP packets and sent to a configurable destination IP address and port. TAIP messages may also be sent back to the TrimFleet DRU Plus by the AVL application to modify reporting rates and query current location or status.

Vehicle location is available only on ASTRO Conventional and Trunked IV&D Systems. Subscribers must have version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software.

Digital Conventional Ordering requirements for XTL 1500 Mobile:

- ASTRO Digital CAI Operation (G966)
- Mid Power RS232 Cable (HKN6160A)(Hooks to the J2 rectangular connector)

P25 Trunking Ordering requirements for XTL 1500 Mobile:

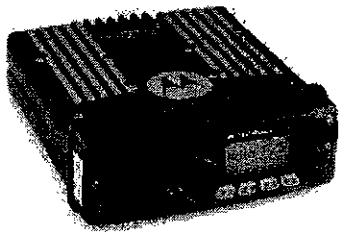
- ASTRO Project 25 Trunking 9600 Software (G964)
- Mid Power RS232 Cable (HKN6160A)(Hooks to the J2 rectangular connector)

Description	Nomenclature	APC	Price
TRIMFLEET DRU PLUS (W/DR & POWER CABLE)	DDN9439	222	$745.00

Description	Nomenclature	APC	Price
TRIMFLEET APU (W/POWER CABLE)	DDN9440	222	$620.00

Description	Nomenclature	APC	Price
TRIMFLEET GPS ANTENNA WITH CABLE	DDN9474	222	$99.00

Data Compiled 16-May-2013 using DUP and all prices in USD



ASTRO® Digital XTL 1500 Mobile
764 - 870 MHz Band
Secure and Trunked Radio Systems

Ship Card

Features

All XTL 1500 Mobiles are available with the following hardware features:

- 10 Foot Negative Ground Power Cable (3 meters) for Dash Mount
- Ignition Sense Cable
- Palm Microphone (HMN1090)
- Internal Speaker (Standard)
- Mounting Hardware

All XTL 1500 radios are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades.

General Information

XTL 1500 Catalog Sheet

XTL 1500 7/800MHz Ordering Guide

The XTL 1500 Mobile Line offers 1 radio hardware model:

Hardware Mode	Modes	Alphanumeric Display
		Lines/Characters
		per Line
CH	48	1/8

OPERATING MODES

XTL 1500 Radio Models are capable of operating in four different voice communication modes:

- 3600 Analog Trunking
- 3.6KB ASTRO Digital (both clear and coded voice)
- 9.6KB ASTRO Digital (both clear and coded voice)
- Digital Conventional

The mode of operation is programmed on a channal-by-channel basis. The XTL 1500 is capable of transmitting clear analog voice or clear (unencrypted) ASTRO digital voice, depending on the channel programming. XTL 1500 radio functions include ASTRO Digital signaling and digital coding.

CHANNEL SPACING

There are no maximum frequency saparation conditions that must be adhared to on the XTL 1500 Mobile Radio Series. Separation of frequencies can be es wide as the allowable sub-band per radio model with no degradation of any performance specifications. If an

Incorrect antenna is used, degraded performance may be experienced.

COMMON AIR INTERFACE

Conventional channels are P25 compliant with the ASTRO Digital CAI Operation Software. ASTRO P25 Trunking Software must be ordered for P25 compliance in trunked systems.

Ordering Requirements

The XTL 1500 Digital Mobile Radio has been set up to simplify ordering of hardware and software for customers.

- The main model number consists of: the mobile transceiver or "brick" for the frequency band and power level, control head hardware, control head software, dash mount capability, mounting hardware, power cable, ignition sense cable, and microphone.
- The XTL 1500 radio also includes an internal speaker.
- Any additional accessories that are required can be ordered as options.
- A software ***enhanced*** version of each system software package can be ordered as an option if customers require any of the capacity and feature capabilities described below:
    - Enhancements to a **DIGITAL** system will include: 512 channels, ADP (G193), Data Capability (W947), 16 trunked systems, 16 trunked personalities, 20 call lists, 25 call list members, and 20 scan lists.

      OR

    - Enhancements to an **ANALOG** system include: 512 channels, 16 trunked systems, 16 trunked personalities, 20 call lists, 25 call list members, and 20 scan lists. Note: This enhancement package does NOT include ADP (G193) or Data (W947) capability.

Ordering Sequence
Order Example:

1	M28URS9PW1AN	XTL 1500 Mobile
1A	GXXX	System Software Package
1B	GXXX	Standard Antenna
1C	Etc.	Other Options
1D	G798, G91	Control Station

- **1 Main Line Item**
    - **Order** the XTL 1500 model number.

- **1A Sub-Items**
    - **Order** the **System Software Package**
        - Select 1 system software package (Standard - G788, G789, G790, G809).
        - If additional capacity or feature capabilities are desired, order software enhanced system software package (Software Enhanced – G964, G965, G966, G967).
        - Refer to the matrices below for specific features available with each package (option).

- **1B Accessories**

- **Order** one (1) Antennas (G174, G175, G335, W484) or No Antenna Needed (G89).

- **1C Etc.**
  - If additional speaker is required, **order** external speaker (B18).

- **1D Control Station**
  - If control station operation is required, **order** Control Station Base Mount (G798) and Power Supply with power cable (G91).
  - No external speaker should be ordered for control station operation as the mobile includes an internal speaker as standard.

Each hardware model must be ordered with 1 of the System Software Package options listed below. Please refer to the list of features and capabilities that corresponds to the system type to be ordered.

COMMON SOFTWARE FEATURES SUPPORTED BY "SmartZone® System Packages"				
	"3600 Analog Trunking"	"3.6KB ASTRO Digital"	"9.6KB ASTRO Digital"	"Digital Conventional"
	G809	**G789**	**G788**	**G790**
			Project 25	Project 25
RADIO WIDE FEATURES				
48 Modes / Channels	Yes	Yes	Yes	Yes
Analog or Digital Operation	No	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable *ADP supported when Software Enhancement Package is ordered (see corresponding matrix below).	No*	No*	No*	No*
One Touch Operation	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional redio wide features beyond those specified in the APCO Project 25 documents.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed)	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
MDC PTT ID (Encode / Decode)	Encode	Yes	Yes	Yes
MDC Selective Radio Inhibit (Decode)	Yes	Yes	Yes	Yes
MDC Call Alert (Encode / Decode)	Yes	Yes	Yes	Yes
MDC Radio Check (Decode)	Yes	Yes	Yes	Yes
MDC Voice Selective Call (Encode / Decode)	Yes	Yes	Yes	Yes
MDC Remote Monitor	N/A	N/A	N/A	Yes
MDC Call Lists (Call Alert / Selective Call)	Yes	Yes	Yes	Yes
MDC Emergency Call (Encode / Decode)	Yes	Yes	Yes	Yes
MDC Emergency PTT ID (Encode)	Encode	Yes	Yes	Yes
MDC Emergency Alarm (Encode)	Yes	Yes	Yes	Yes
MDC Emergency w/ Voice to Follow	Yes	Yes	Yes	Yes

MDC Select Emergency	Yes	Yes	Yes	Yes
MDC Status (Encode)	Yes	Yes	Yes	Yes
MDC Message (Encode)	Yes	Yes	No	Yes
MDC Silent Emergency (Encdode)	Yes	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Interoperable Features when used in the ASTRO Digital CAI Mode				
Unaddressed Voice Call	No	Yes	Yes	Yes
Talk Group Call	No	Yes	Yes	Yes
Group Call Alert™	No	Yes	Yes	Yes
Talk Group Identification (TGID)	No	Yes	Yes	Yes
Selective Call (Individual Voice Call)	No	Yes	Yes	Yes
Selective Call Decode (Individual Voice Call)	No	Yes	Yes	Yes
PTT ID (Individual Identification)	No	Yes	Yes	Yes
Call Alert Encode/Decode	No	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	No	Yes	Yes	Yes
Telephone Interconnect Unlimited (Encode / Decode)	No	Yes	Yes	Yes
Unlimited	No	Yes	Yes	Yes
Selective Radio Inhibit	No	Yes	Yes	Yes
Radio Check	No	Yes	Yes	Yes
Status/Message	No	Yes	Yes	Yes
Adaptive Power Control	No	Yes	Yes	Yes
Smart PTT	No	Yes	Yes	Yes
SmartZone Omnilink	Yes	Yes	Yes	No
Trunking Type II Only Features				
20 Trunked Systems (Maximum)	Yes	Yes	Yes	N/A
Talkgroup Calls	Yes	Yes	Yes	N/A
PTT ID	Yes	Yes	Yes	N/A
Call Alert Encode / Decode	Yes	Yes	Yes	N/A
Dual Mode Scan	Yes	Yes	Yes	N/A
Failsoft by Talkgroup	Yes	Yes	Yes	N/A
Telephone Interconnect Unlimited (Encode / Decode)	Yes	Yes	Yes	N/A
System Wide Call (Receive Only)	Yes	Yes	Yes	N/A
Selective Radio Inhibit	Yes	Yes	Yes	N/A
Priority Monitor Scan	No	No	No	N/A
Dynamic Regrouping	Yes	Yes	Yes	N/A
Status / Message (No DEK)	Yes	Yes	Yes	N/A
Dispatcher Interrupt	No	No	No	N/A
Private / Enhanced Conversation Encode / Decode	Yes	Yes	Yes	N/A
Radio Trace	Yes	Yes	No	N/A
Reprogram Request	Yes	Yes	Yes	N/A
Voice on Control	Future	Future	Future	N/A
SmartZone Automatic Site Registration	Yes	Yes	Yes	N/A
SmartZone RSSI Operation	Yes	Yes	Yes	N/A
SmartZone Busy Override	No	No	No	N/A
SmartZone Preferred Site	Yes	Yes	Yes	N/A
SmartZone Forced Site Search	Yes	Yes	Yes	N/A
SmartZone Site Lock/Unlock	Yes	Yes	Yes	N/A
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	N/A
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	N/A

Additional features / capabilities are available by ordering 1 of the "software enhanced" System Software Options (see below). When ordering the software enhanced system software options, customers will get the features / capabilities listed below **in addition to**

those specified in the above matrix. Please refer to the feature / capability column that corresponds to the system type ordered.

"ADDITIONAL" FEATURES / CAPABILITIES SUPPORTED WITH SOFTWARE ENHANCEMENT PACKAGE				
	"3600 Analog Trunking"	"3.6KB ASTRO Digital"	"9.6KB ASTRO Digital"	"Digital Conventional"
	G967	G965	G964	G966
			Project 25	Project 25
512 Channels	Yes	Yes	Yes	Yes
20 Trunked Systems	Yes	Yes	Yes	No
50 Trunked Personalities	Yes	Yes	Yes	No
Call Lists: 3600 Trunking - 20 lists 9600 Trunking & Digital Conventional - 10 lists MDC - 50 lists	Yes	Yes	Yes	Yes
Call List Members: 3600 Trunking & 9600 Trunking - 25 call list members Digital Conventional & MDC - 50 call list members	Yes	Yes	Yes	Yes
20 Scan Lists	Yes	Yes	Yes	Yes
ADP (G193) *ADP is only supported on 9600 trunking or on digital conventional channels.	No	Yes*	Yes	Yes
Data (W947)	No	Yes	Yes	Yes

SELF-QUIETING SPURS

12MHz is Control Head's OMAP processor core clock frequency that allows the processor to operate correctly. Unfortunataly a low lavel emission of this frequency is being picked up by the radio's receiver.

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replaca ASTRO Text Messaging Service (TMS). As a completa end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient end achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) end vehicles equipped with MDT's. With ASTRO 25 Advenced Messaging Solution we ere extending that capability to responders when Outside the Vehicla.

ASTRO Advanced Messaging Solution will be available on APX 7000 Dual Display Portable radios. Advanced Messaging is NOT supported on APX 7000 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for APX Mobiles Require: (Note: some control heads are not available on all main models)

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- P25 Conventional (G48)
- Packet Data Interface (W947)

OR

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking Software (G361)
- Packet Data Interface (W947)

NOTE: *There is no specific option to order for the Advanced Messeging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For edditional ordering guidalines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

Frequency (MHz)	Source
863.9875 MHz	multiple of 12 MHz

FCC Information

Band/Model	Power Output	Transmitter Certification (Type Acceptance)	Emissions	Applicable Rules
700 (764 - 806 MHz)* 800 (806 - 869 MHz) 700 (Itinerant channels) **	10 - 35 Watts 10 - 35 Watts 2 Watts	AZ492FT5823	8K10F1D, 8K10F1E, 11K0F3E, 16K0F3E, 20K0F1E, 20K0F1D	22, 74, 90

FCC Approval echieved through Class I Permissive Change to Transmitter.

- Except for Itinerant and low-power incident channels.

** Itinerant & Low-Power Incident Channels	
Channel Number	Frequency Range (MHz)
1 - 12 949 - 960 961 - 972 1909 - 1920	764 - 764.075 775.925 - 776 794 - 794.075 805.925 - 806

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA Ç Canada personnel refer to Section A under CANADA ONLY Information.

Models

Description	Nomenclature	APC	Price
XTL 1500 MOBILE 35 WATT, 764-870MHZ	M28URS9PW1 N	775	$1,600.00

Options

System Software Options

Description	Nomenclature	APC	Price

ENH: 9600 DIGITAL BAUD	G788	775	$630.00
ENH: 3600 ASTRO DIGITAL	G789	775	$530.00
ENH: SOFTWARE P25 CONVENTIONAL	G790	775	$130.00
ENH: 3600 ANALOG BAUD	G809	775	$230.00
ADD: XTL1500 RADIO AUTHENTICATION	W391	775	$100.00

Software Enhanced System Software Options

(Do NOT select any of the above system software options IF ordering 1 of the system software options below.)

Description	Nomenclature	APC	Price
9600 ASTRO DIGITAL ENHANCE	G964	775	$830.00
ENH: 3600 ASTRO DIGITAL ENHANCE	G965	775	$730.00
ENH: P25 DIGITAL CONVL ENHANCE	G966	775	$330.00
ENH: ANALOG 3600 BAUD ENHANCED	G967	775	$430.00

System Enhancement Features

Description	Nomenclature	APC	Price
ENH: OVER THE AIR PROVISIONING	G996	726	$100.00
Compatible with P25 Trunking only. Requires W947 (packet data) which comes with ordering en Enhanced Digital System Software option.			
ENH: RADIO TRACE AND REMOTE MONITOR	G170	775	$75.00

Alarm

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAYS AND CABLE	W116	500	$75.00
For either HORN or LIGHTS. NOT both			

Antenna

Description	Nomenclature	APC	Price
ADD: ANTENNA 3DB LOW-PROFILE 764-870MHZ	G174	500	$43.00
Corresponding kit: HAF4013 Corresponding Motorcycle kit: HAF4018			
ADD: ANTENNA 3DB ELEVATED FEED 764-870MHZ	G175	500	$75.00
NOT Compatible with Motorcycle. Corresponding kit: HAF4014.			
ADD: ANTENNA 1/4 WAVE 764-870MHZ	G335	500	$14.00
Corresponding kit: HAF4016 Corresponding Motorcycle kit: HAF4015 **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.**			
ADD: NO ANTENNA NEEDED	G89	500	$0.00
ALT: ANTENNA 3DB GAIN 764-870MMZ	W484	500	$38.00
Not compatible with Motorcycle. Corresponding kit: HAF4017.			

Control Station Operation

Description	Nomenclature	APC	Price
ADD: CONTROL STATION POWER SUPPLY	G91	500	$269.00
Corresponding kit: HPN4007			
ADD: CONTROL STATION MOUNT	G798	775	$70.00

Emergency

Description	Nomenclature	APC	Price
ADD: EXTERNAL EMERGENCY FOOTSWITCH	W470	500	$56.00
Corresponding kit: HLN5113.			
ADD: EXT EMERGENCY PUSHBUTTON	W688	500	$56.00

Corresponding kit: HLN5131

Microphones

Description	Nomenclature	APC	Price
ALT: CONTROL STATION MICROPHONE Dash Mount Required Corresponding Kit: RMN5070	W382	500	$169.00
ADD: HANDSET/HANGUP GCAI Coiled Cable with Toggle Switch Accessory Kit: HLN1457A	G874	514	$285.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079	W20	514	$180.00

Service Options (These Service options are NOT applicable for Asia Pac)

REPAIR SERVICE ADVANTAGE
Provides for extended hardware repair coverage beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$64.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$246.00
ENH: 3 YR CANADA EXTND WRNTY XTL	GA00313	386	$177.00
ENH: 5 YR CANADA EXTND WRNTY XTL	GA00316	386	$240.00

REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00

Speakers

Description	Nomenclature	APC	Price
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$60.00

Miscellaneous

Description	Nomenclature	APC	Price
ADD: KEY LOCK MOUNT	W81	500	$33.00

Accessories

Antenna

Description	Nomenclature	APC	Price
ANTENNA (762-870 MHZ) 3DB LOW-PROFILE	HAF4013	500	$43.00

ANTENNA (762-870 MHZ) 3DB ELEVATED FEED	HAF4014	500	$75.00
ANTENNA (762-870 MHZ) 1/4 WAVE	HAF4016	500	$23.00
ANTENNA (762-870 MHZ) 3DB GAIN COLLINEAR	HAF4017	500	$38.00

Cable (s)

Description	Nomenclature	APC	Price
POWER CABLE, 10 FT. (LOW/MID POWER) 30 & 35 WATT	HKN4191	412	$18.00

Control Station

Description	Nomenclature	APC	Price
CONTROL STATION MOUNT	HLN6925	775	$95.00
PS 14V 10A 117/240 VAC.	HPN4007C	500	$296.00

Customer Programming Software

Emergency

Description	Nomenclature	APC	Price
EMERGENCY FOOT SWITCH	HLN5113	604	$61.75

Speakers

Description	Nomenclature	APC	Price
EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	HSN4038	476	$60.50

Microphones

MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	706	$295.00
XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00

Vehicle Location Solution

Vehicle Location Solution

Vehicle location or GPS is now available on the ASTRO 25 XTL 1500 mobile radio.

The TrimFleet ™ GPS mobile units provide a versatile and economical platform for mobile positioning applications. Using state-of-the-art GPS receiver technology, the TrimFleet GPS receiver unit has been optimized for vehicle installation and operation, providing reliable vehicle position, direction, speed, time and status in any weather, anywhere in the world.

The TrimFleet receiver contains a 12-channel GPS module and an (optional) angular rate sensor module. The TrimFleet receiver connects directly to in-vehicle laptops/workstations as well as VRM end XTL radios. The TrimFleet GPS receiver outputs positions when in GPS coverage via either of its RS-232C serial ports in National Marine Electronics Association Protocol (NMEA), Trimble ASCII Interface Protocol (TAIP) and Point to Point Protocol (PPP) formats. The TrimFleet receiver mey be configured to send the position data in either protocol via the two RS-232C deta ports. Once installed in a vehicle and driven for a short distance, the 12-channel GPS

module used in the TrimFleet receiver will automatically self-calibrate.

The TrimFleet DRU Plus may be equipped with an optional internal module to provide dead reckoned position data while outside of GPS coverage. This is accomplished through the use of advanced gyroscopic technology in combination with connections to the vehicle speed sensor

and vehicle direction signal (forward or reverse.) Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

I/O PORTS

The TrimFleet DRU Plus provides two RS232C compatible communication ports that may be connected to external devices. One port provides a DE-9 female DCE connection, and the other port provides a DE-9 female DTE connection. The ports may be configured individually for baud rates between 110 and 115.2K baud. Both ports support NMEA and TAIP protocols. The default configuration for both ports is 9600 baud TAIP.

Also provided is support for PPP over RS232C on Port 1. An IP capable XTL 1500 radio may be interfaced to the port to allow wireless transmission of TAIP messages to an AVL server. The TAIP messages will be encapsulated in UDP packets and sent to a configurable destination IP address and port. TAIP messages may also be sent back to the TrimFleet DRU Plus by the AVL application to modify reporting rates and query current location or status.

Vehicle location is available only on ASTRO Conventional and Trunked IV&D Systems. Subscribers must have version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software.

Digital Conventional Ordering requirements for XTL 1500 Mobile:

- ASTRO Digital CAI Operation (G966)
- Mid Power RS232 Cable (HKN6160A)(Hooks to the J2 rectangular connector)

P25 Trunking Ordering requirements for XTL 1500 Mobile:

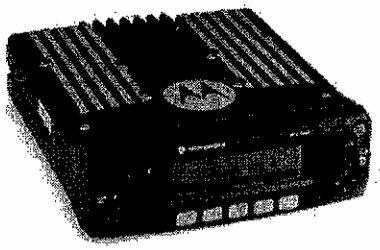
- ASTRO Project 25 Trunking 9600 Software (G964)
- Mid Power RS232 Cable (HKN6160A)(Hooks to the J2 rectangular connector)

Description	Nomenclature	APC	Price
TRIMFLEET DRU PLUS (W/DR & POWER CABLE)	DDN9439	222	$745.00

Description	Nomenclature	APC	Price
TRIMFLEET APU (W/POWER CABLE)	DDN9440	222	$620.00

Description	Nomenclature	APC	Price
TRIMFLEET GPS ANTENNA WITH CABLE	DDN9474	222	$99.00

Data Compiled 16-May-2013 using DUP and all prices in USD



XTL 2500 Mobile
896-941 MHz Band

Secure and Trunked Radio Systems

Ship Card

General Information

The XTL 2500 Mobile Line offers 1 radio hardware model:

Hardware Mode	Modes	Alphanumeric Display
		Lines/Characters
		per Line
CH	1000	4/14

OPERATING MODES

XTL 2500 Radio Models are capable of operating in the following voice communication mode:

- normal analog (clear voice)

The mode of operation is programmed on a channel-by-channel basis.

Each hardware model must be ordered with one of the following System Enhancement Software Package options.

- G48 - Conventional Software Package
- G51 - 3600 Analog SmartZone Trunking

COMMON SOFTWARE FEATURES SUPPORTED BY	
G51 "SmartZone®"	
	"Analog Operation"(G241)
RADIO WIDE FEATURES	
Maximum Modes	
XTL 2500 Control Head	1000
Analog Operation	Yes
Digital Operation	No
12.5 KHz Programmable Channels	
ADP Encryption	No
Encryption Capable	No
One Touch Operation	Yes
Radio Wide Transmit Inhibit	Yes
Time Out Timer	Yes
FLASHport	Yes

ANALOG CONVENTIONAL FEATURES	
Conventional Features are additional radio wide features beyond those specified in the APCO Project 25 documents.	
CSQ/PL/DPL	Yes
Dual Priority Channel Scan	Yes
Repeater/Talkaround Operation	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes
Smart PTT	Yes
Monitor	Yes
DTMF (Telephone Tone Generation w/ Microphone)	Yes
MPL	Yes
MDC PTT ID	Yes
MDC Selective Radio Inhibit (Decode Only)	Yes
MDC Call Alert (Encode/Decode)	Yes
MDC Radio Check (Decode Only)	Yes
MDC Voice Selective Call (Encode/Decode)	Yes
MDC Remote Monitor (Decode Only)	Yes
MDC Call Lists (Call Alert/Select Call)	Yes
MDC Emergency	Yes
MDC Silent Emergency (Encode)	Yes
Trunking Type II Only Features	
Maximum Number of Trunked Systems-20	
Talkgroup Calls	Yes
PTT ID	Yes
Call Alert Encode/Decode	Yes
Dual Mode Scan	Yes
Failsoft by Talkgroup	Yes
Telephone Interconnect Encode/Decode	Yes
System Wide Call (Receive Only)	Yes
Selective Radio Inhibit	Yes
Priority Monitor Scan	Yes
Dynamic Regrouping	Yes
Status/Message	Yes
Dispatcher Interrupt	No
Private/Enhanced Conversation Encode/Decode	Yes
Radio Trace	Yes
Reprogram Request	Yes

Each hardware model must be ordered with 1 of the System Enhancement Software Package options, Conventional or SmartZone.

SOFTWARE FEATURES SUPPORTED BY	
G51 "SmartZone®"	
	"Analog Operation" (G241)
Trunking Type II Only Features	

Voice on Control	Future
SmartZone Automatic Site Registration	Yes
SmartZone RSSI Operation	Yes
SmartZone Busy Override	No
SmartZone Preferred Site	Yes
SmartZone Forced Site Search	Yes
SmartZone Site Lock/Unlock	Yes
SmartZone Adjacent Control Channel OSW	Yes
Emergency Alarm Call Receive Indication	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the XTL 1500 Mobile Radio Series. Separation of frequencies can be as wide as the allowable sub-band per radio model with no degradation of any performance specifications. **If an incorrect antenna is used, degraded performance may be experienced.**

COMMON AIR INTERFACE

Conventional channels are P25 compliant with the ASTRO Digital CAI Operation Software (G806). ASTRO P25 Trunking Software (G361) must be added for P25 compliance in trunked systems.

PROJECT 25 ENCRYPTION

When ordering any of the Encryption Algorithm:

- **MUST** order the Encryption UCM Hardware (G159)
- ADP Privacy not supported by OTAR. ADP is digital P25 conventional / P25 trunking only.
- The DES-OFB and AES-OFB Encryption offered is compliant with Project 25 standards and does not support analog encryption operation.
  - REQUIRES the ASTRO Digital CAI (G806) to operate the DES-OFB or AES-OFB Encryption
- If ordering a non-OFB (XL version) Encryption:
  - The non-OFB encryption (XL versions) can be operated in either analog or CAI digital mode but will not be Project 25 compliant.
- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.
  - Encryption UCM Hardware (G159) module may be ordered without an Encryption Algorithm for later upgrade in the field.

FIELD INSTALLED PROJECT 25 ENCRYPTION

The DES-OFB and AES-OFB Encryption offered is compliant with Project 25 standards. Operation of DES-OFB and/or AES-OFB encryption requires the ASTRO Digital CAI (G806). Radios can be upgraded via FLASHport to CAI operation.

- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

FIPS 140-2 COMPLIANCE

Encryption Modules equipped with AES are FIPS 140-2 compliant. ADP Privacy is not FIPS compliant. Further information regarding FIPS 140-2 certification may be found using the following links:

FIPS 140-2 Crypto Module Validation Program (CMVP)

NIST Cryptographic Module Validation Lists

Self-Quieting Spurs Frequency (MHz)

UHF R1 384MHz and 435.2MHz

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on APX 7000 Dual Display Portable radios. Advanced Messaging is NOT supported on APX 7000 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for APX Mobiles Require: (Note: some control heads are not available on all main models)

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- P25 Conventional (G48)
- Packet Data Interface (W947)

OR

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking Software (G361)
- Packet Data Interface (W947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

FCC Information

Band/Model	Power Output	Transmitter Certification (Type Acceptance)	Emissions	Applicable Rules
896-940 MHz	10 - 30 Watts	AZ492FT5847	11K0F3E, 8K10F1E, 8K10F1D	90

- *Except for Itinerant and low-power incident channels.*

** Itinerant & Low-Power Incident Channels	

Channel Number	Frequency Range (MHz)
TBD	TBD

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

Ç Canada personnel refer to Section A under CANADA ONLY information.

Guideline

This price page consists of the following sections:

A. Required Main Models and Options for standard operation (Steps 1-9)

B. Control Station

C. Optional Features

D. Aftermarket Accessories

Section A: Required Main Model and Options

For standard Radio Operation **Steps 1 - 9** **must be** selected.

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

1: Main Model ***(Must Select)***

Description	Nomenclature	APC	Price
896-941MHZ 10-30W	M21WRS9PW1 N	514	$1,497.00

2: Operation Mode ***(Must Select One)***

Description	Nomenclature	APC	Price
ENH: SOFTWARE ASTRO READY ANALOG NOT COMPATIBLE with Encryption Algorithm W969, W793, W797, G298, G851, or G843 when combined with a Trunking Software Option. DES-OFB is not operational in Analog Operation.	G241	500	$0.00
ENH: XTL SOFTWARE ASTRO DIGITAL CAI OPERATION	G606	514	$515.00

3: System Enhancement Software ***(Must Select One)***

Description	Nomenclature	APC	Price
ENH: CONVENTIONAL OPERATION	G48	514	$275.00
ENH: SOFTWARE SMARTZONE/SINGLETONE	G51	514	$975.00

3b: Optional Syetem Enhancement Software ***(Not Required)***

ADD: P25 TRUNKING SOFTWARE When ordering this option G51 & G806 MUST be ordered. G173 is included at "NO CHARGE".	G361	856	$300.00

4: Control Head Hardware ***(Must Select One)***

Description	Nomenclature	APC	Price
ADD: XTL2500 CONTROL HEAD	G442	514	$292.00
ADD: NO CONTROL HEAD NEEDED Requires remote mounting option (G67 or G655)	G88	500	$0.00

5: Control Head Software ***(Must Always Select G444)***

Description	Nomenclature	APC	Price
ADD: ADD: CONTROL HEAD SOFTWARE MUST ALWAYS SELECT THIS OPTION	G444	514	$0.00

6: Mounting *(Must Select One)*

****If a remote mount cable other than 5 meters (17ft) is desired for the G67, please reference the "Remote Mount Cables" section below in Section C: Optional Features****

Description	Nomenclature	APC	Price
ADD: DASH MOUNT Required for Control Station Operation	G66	500	$125.00
ADD: THUMB SCREW REMOTE MOUNT	G67	514	$297.00

7: Antenna *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: NO ANTENNA NEEDED	G69	500	$0.00
ADD: ANT 900MHZ (890-960MHZ) 3DB LOW ROOF TOP 14?	B925	722	$43.00
ADD: ANT 900MHZ (890-960MHZ) 3DB LOW ROOF TOP 22?	B926	623	$75.00

8: Microphones *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED Select this option when ordering W3 Handheld Control Head (G82/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.	G90	500	$0.00
ADD: PALM MICROPHONE Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090	W22	500	$72.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079 Itemn=w362,4#]	W20	514	$180.00
ADD: HANDSET/HANGUP GCAI Coiled Cable with Toggle Switch Accessory Kit: HLN1457A	G674	514	$265.00
ADD: CONTROL STATION DESK MICROPHONE Dash Mount Required Corresponding Kit: RMN5070	W382	500	$169.00
ADD: MODEL III KEYPAD TELEPHONE HANDSET Corresponding kit: HMN4097A	GA00221	514	$295.00

9: Speakers *(Must Select One)*

****G142 NO SPEAKER Required for Control Station****

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$60.00
ADD: INCREASED AUDIO POWER 13W Corresponding kit: HSN4032. NOT COMPATIBLE with W665 Control Station and Motorcycle Configuration.	W432	500	$71.50

Section B: Control Station

CONTROL STATION OPERATION

1. First, you must review your selection of the following options from "Section 1: Required Options".

   - Step 1 *(Note: Main Model)*
   - Step 2 *(Note: All listed options are compliant)*

- Step 3 *(Note: All listed options are compliant)*
- Step 4 *(Note: XTL 2500 Control Head **OR** "No Control Head Needed" are compatible with Control Station Application- Must only select one).*
- Step 5 *(Note: Must Select G444. The XTL 2500 Control Head Software is compatible with Control Station Application).*
- Step 6 *(Note: Must Select G66. Control Station operation is only offered in Dash mount configuration)*
- Step 7 *(Note: All listed options are compliant)*
- Step 8 *(Note: Select desired microphone option and if no microphone is needed, G90 must be selected).*
- Step 9 *(Note: Must Select G142 - No Speaker Needed)*

II. You Must Select ONE of the Following "Specific Control Station Options":

SPECIFIC CONTROL STATION OPTIONS

Control Station Operation and Power Supply ***(Must Select BOTH)***

Description	Nomenclature	APC	Price
ADD: CONTROL STATION POWER SUPPLY Corresponding kit: HPN4007	G91	500	$269.00
ADD: CONTROL STATION OPERATION For DASH MOUNT radios ONLY (G66)!! Not compatible with W3, or W9 control head options. G665 includes a base tray and a speaker, therefore G142 has to be ordered to eliminate extra Speaker. Requires a Power Supply (G91 can be ordered as a Power Supply). Requires one of the Microphone Options: G90, W22 or W382. Corresponding kit: HLN6042	W665	500	$70.00

III. Features listed in "Section C: Optional Features" are optional, if applicable. Please read the option's description to determine compatibility.

Section C: Optional Features

The following features are **optional** and will provide additional capabilities, if required.

System Enhancement Options

Description	Nomenclature	APC	Price
ENH: ENHANCED DIGITAL ID DISPLAY 8 numeric charecter unit to unit display. NOTE: This option is required to display Radio ID or Radio Alias on the display for analog and digital conventional and trunking configurations.	G114	500	$75.00
ENH: RADIO TRACE AND REMOTE MONITOR Note: G170 option for Radio Trace/Remote Monitor is not compatible with W3 Control Head and G474 (Multi-Radio). For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.	G170	500	$75.00
ADD: CONVENTIONAL VOTING SCAN ASTRO This feature allows for voting of the Conventional Channels ONLY.	G387	500	$200.00
ADD: TRUNKED ONE TOUCH BUTTON	G683	500	$150.00
ENH: OVER THE AIR PROGRAMMING Compatible with P25 Trunking only. Requires W947 Data option. To do in field POP25 programming must use Advanced System Key (DVN4046A)	G996	518	$100.00
ADD: XTL2500 RADIO AUTHENTICATION	W391	514	$100.00

Encryption Hardware and Software

Description	Nomenclature	APC	Price
ADD: ENCRYPTION UCM REQUIRED for ANY encryption combination of Hardware Based Algorithms. Not Compatible with G193. CUSTOMERS USING THE FOLLOWING FREQUENCIES MUST ADD FREE OPTION "QA00351AA" (ENH: UCM SP TRIGGER) due to a known Self Quiting issue for radios with the standard UCM. UHF SELF-QUIETING SPURS: UHF RANGE 1 FREQUENCIES: 383.975 MHz 393.2125 MHz 395.975 MHz 432 MHz 456 MHz UHF RANGE 2 FREQUENCIES:	G159	500	$150.00

458 MHz
479.975 MHz
480 MHz

ADD: KEY RETENTION 30 SECONDS	G336	500	$50.00
G159 REQUIRED			
ADD: MULTIPLE KEY ENCRYPTION OPERATION	W969	500	$330.00
REQUIRED when using more than one encryption algorithm or encryption key.			
ENH: CONVENTIONAL TACTICAL REKEY WITH MULTIKEY	H04	514	$350.00
Must Order IV&D(Q947)			

Encryption Algorithms

Description	Nomenclature	APC	Price
ADD: ADP ENCRYPTION	G113	526	$349.00
REQUIRES G159. INCLUDES W969 Multikey. ORDER G194 if need ADP with DES/DES-XL-DES-OFB. NOT AVAILABLE with 3600 Trunking and Analog Conventional software Packages. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G808 in the Digital Conventional mode ONLY.			

Description	Nomenclature	APC	Price
ADD: ADP SOFTWARE DSP BASED CRYPTO	G193	500	$10.00
REQUIRES: G806 Digital Operation DOES NOT REQUIRE: G159 UCM or G77/G78 Encryption Warranty. Use standard warranty options if needed. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G808 in the Digital Conventional mode ONLY. .Includes 8 non-indexing encryption keys..			
Description	**Nomenclature**	**APC**	**Price**
AES ENCRYPTION-UCM	G643	412	$625.00
AES operates in digital mode only. NOT compatible with G241 ENH: SOFTWARE ASTRO READY ANALOG			
Description	**Nomenclature**	**APC**	**Price**
ADD: DES, DES-XL, DES-OFB ENCRYPTION - UCM	G625	412	$749.00
The Multikey (W969) or OTAR (G296) are only required when more than 1 key or 1 algorithm is programmed.			
Description	**Nomenclature**	**APC**	**Price**
ADD: DVI-XL ENCRYPTION	W793	500	$520.00
G159 is REQUIRED when ORDERING			
Description	**Nomenclature**	**APC**	**Price**
ADD: DVP-XL ENCRYPTION	W797	500	$487.00
G159 is REQUIRED when ORDERING			

Remote Mount Cables

(The 5 meter (17 FT) Cable Ships Standard)

Description	Nomenclature	APC	Price
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT)	G582	514	$65.00
For Duel/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a duel, tri, or quad control radio Corresponding kit: HKN8164			
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT)	G607	514	$45.00
Corresponding kit: HKN8166A			
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT)	G609	514	$35.00
Corresponding kit: HKN8167			
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT)	G610	514	$25.00
Corresponding kit: HKN8168			
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT)	G679	514	$55.00
Corresponding kit: HKN8165			
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT)	G618	514	$10.00
Corresponding kit: HKN8170			

DEK

Description	Nomenclature	APC	Price
ADD: STATUS MESSAGE 8 MESSAGES	W355	500	$475.00
NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration. CORRESPONDING KIT: H1638A			
ADD: DDE STATUS MESSAGES 16	W374	500	$650.00
NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration. CORRESPONDING KIT: H1639A			

Direct Mode Entry

Description	Nomenclature	APC	Price
ADD: 8 MODE DIRECT ENTRY ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1835A	W599	500	$180.00
ADD: 16 MODE DIRECT ENTRY ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1836A	W614	500	$360.00
ADD: 24 MODE DIRECT ENTRY NOT COMPATIBLE with W269 Siren/PA. 9600 Systems offer ONLY "Status" and not "Message". ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1837A	W615	500	$540.00

WHELEN SIREN (MOTOROLA COMPATIBLE)

NOTE: THE NEW SIREN IS COMPATIBLE WITH APX AND XTL MOBILES WITH "O" SERIES OR M5 CONTROL HEADS ONLY. THIS SIREN IS NOT COMPATIBLE WITH ANY "W" SERIES CONTROL HEADS

THE SIREN BASE MODEL TT2592, CABLE TT05707 AND THE SIREN MOUNTING HARDWARE TT0507 MUST ALWAYS BE ORDERED (THIS SIREN IS ORDERED AS A SEPARATE LINE ITEM, TT2592 IS THE MODEL)

DEK OPTIONS ARE AVAILABLE AS OPTIONS TO THE SUBSCRIBER AS SHOWN BELOW

Deecription	Nomenclature	APC	Price
WHELEN/MOTOROLA SIREN	TT2592	656	$395.00
SIREN HARDWARE INSTALL KIT	TT05707AA	656	$20.00
SIREN TO RADIO CABLE	TT05708AA	656	$65.00
SIREN TO DEK CABLE - O3 CONTROL HEAD ONLY	TT05709AA	656	$78.00

SIREN DEK OPTIONS

ADD: DEK FOR WHELEN SIREN W/ O3 CH ONLY	GA00812	656	$105.00
ADD: DEK FOR WHELEN SIREN	GA00814	656	$105.00

Auxiliary Switches

Deecription	Nomenclature	APC	Price
ADD: AUXILIARY SWITCH PANEL Corresponding kit: HLN1196. G87 REQUIRED. NOT compatible with W3 control head or motorcycle.	W591	500	$165.00

Alarm

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAYS AND CABLE For either HORN or LIGHTS. NOT both	W116	500	$75.00

Emergency

Deecription	Nomenclature	APC	Price
ADD: PTT FOOTSWITCH Requires W672 Visor Mic. Kit Number: GLN7278B	G235	514	$51.00
ADD: EXT EMERGENCY PUSHBUTTON Corresponding kit: HLN5131	W688	500	$58.00

Frequency and Squelch Codes

Description	Nomenclature	APC	Price
ENH: FACTORY PROGRAMMING	W844	500	$0.00

Packet Data Interface / Data Cables

Description	Nomenclature	APC	Price
ADD: RS232 DATA INTFC CABLE-DASH 8 FT RS232 DATA CABLE	G303	500	$50.00

Corresponding kit: HKN6160A.			
RS232 DATA INTFC CABLE-TRUNK 20 FT RS232 DATA CABLE Corresponding kit: HKN6161A.	G304	500	$50.00
ADD: RS232 & IV&D PACKET DATA INTERFACE This option is ONLY Operational on Digital Trunking and Digital Conventional systemsIt INCLUDES the DLM Application. This option does not include Cables. G309 or G304 should be ordered separately.	W947	500	$200.00
USB DATA INTFC CABLE-DASH 6 FT USB W/IGNITION SENSE Corresponding kit: HKN6163B.	G308	500	$50.00

Service (These Service options are NOT applicable for Asia Pac)

REPAIR SERVICE ADVANTAGE
Provides for extended hardware repair coverage beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$84.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$162.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$246.00
ENH: 3 YR CANADA EXTND WRNTY XTL	GA00313	386	$177.00
ENH: 5 YR CANADA EXTND WRNTY XTL	GA00316	386	$240.00

REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00

Test Results

Description	Nomenclature	APC	Price
ADD: PRINTED TEST RESULTS	G799	500	$0.00

Miscellaneous

Description	Nomenclature	APC	Price
ADD: KEY LOCK MOUNT	W81	500	$33.00

Section D: Aftermarket Accessories

Algorithm Kits

Description	Nomenclature	APC	Price
XTL5000 AES256, ADP	NNTN8328A	565	$997.00
XTL5000 DES-XL, DES-OFB, ADP	NNTN8327A	565	$996.00
XTL5000 DES-XL, DES-OFB, AES258, AD	NNTN8326A	585	$1,499.00
XTL5000 AES256	NNTN8331A	456	$795.00
XTL5000 DVP-XL	NNTN8323A	565	$715.00
XTL5000 DES-XL, DES-OFB	NNTN8335A	565	$640.00

Antennas

Description	Nomenclature	APC	Price
ANTENNA, 900MHZ (890-960MHZ) 1/4 WAVE ROOF TOP, 14' CABLE Roof Mount, RG58 A/U cable, Mini UHF connector, Power: 100 Watts, Max., Gain: 3 dB, VSWR: Less than 1.5:1, Impedance: 50 Ohms, nominal	RRA4935	554	$30.00
ANTENNA, 900MHZ (890-980MHZ) 3DB ROOF TOP, 22' CABLE	RAF4003ARM	554	$39.50

Cables

AUDIO CABLE ADAPTER	HKN6158	500	$49.00
ADAPTER CABLE DATA	HKN6159	500	$49.00

Cables (Remote Mount)

CABLE, REMOTE MOUNT, 75 FT	HKN6166	514	$80.00
CABLE, REMOTE MOUNT, 115 FT	HKN6165	514	$105.00
CABLE,REMOTE MOUNT,131 FT	HKN6164	514	$122.00

Control Station

Description	Nomenclature	APC	Price
MOBILE DESK TRAY	HLN6042	617	$77.00
PS 14V 10A 117/240 VAC.	HPN4007C	500	$296.00

Customer Programming Software

Data

CABLE KIT 20' DATA RS232 Date Interface Cable - REMOTE	HKN6161	476	$50.00

Manuals

Description	Nomenclature	APC	Price
XTL 2500 M5 MANUAL	HLN1460D	514	$12.00

Microphones

HANDSET/HANGUP (HANGUP CUP)	HLN1457	706	$265.00
MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	706	$295.00
XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00
AS. SPECTRA & XTL5000 DESKTOP MIC	RMN5070A	706	$172.00

Speakers

Description	Nomenclature	APC	Price
EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	HSN4038	476	$60.50

Bull Horns for Sirens and Public Address

Description	Nomenclature	APC	Price
SPEAKER SIREN, ROUND W/CHROME & BLACK	TDN6251	706	$329.00
SPEAKER RECTANGULAR WITH CHROME FINISH	TDN6252	706	$265.00
SPEAKER UNDERHOOD WITH GRAY FINISH	TDN6253	706	$220.00
SPEAKER ROUND WITH GRAY FINISH	TDN6254	706	$246.00

Miscelleneous

Description	Nomenclature	APC	Price
WILDCARD	HLN1196	412	$165.00
AUXILIARY SWITCH PANEL (W591-W9)	HLN1342	617	$165.00

Data Compiled 16-May-2013 using DUP and all prices in USD

ASTRO® Digital XTL 2500 Dual Control Head Mobile

DUAL CONTROL HEAD ONLY

UHFR1 380-470 (10-40, 100 Watts)
UHF R2 450-520 (10-45 Watts)
VHF - 136 -174 (10-50, 100 Watts)
Secure and Trunked Radio Systems

Ship Card

This Page is for XTL 2500 Dual Control Options Only. For Single Control Head Radio Configurations, Options, or Accessories Please Refer to the Standard XTL 2500 Price Page

ASTRO Digital XTL 2500 700/800 MHz

ASTRO Digital XTL 2500 UHF R1 Mid-Power

ASTRO Digital XTL 2500 UHF R2 Mid-Power

ASTRO Digital XTL 2500 VHF Mid-Power

ASTRO Digital XTL 2500 UHF R1 High-Power

ASTRO Digital XTL 2500 VHF High-Power

ASTRO XTL 2500 900MHz

General Information

What is an XTL 2500 Dual Control Head Configuration?

The XTL 2500 mobile radio and the control head can be configured in a dual control head configuration to support up to 2 control heads on a single transceiver. This allows control of a single XTL 2500 transceiver from up to 2 different control head locations.

What is the difference between an XTL 2500 Dual Control Head Configuration (W4/W5/W7/W9), a MCS Dual Control Configuration, and an Multiple Control Head Configuration?

Multi CH Config	W4/W5/W7/W9 Dual Control	MCS Dual Control (Canceled)
Uses XTL 2500 M5 Control Heads	Uses Legacy ASTRO Spectra Control Heads W4/W5/W7/W9	Uses Legacy MCS Model 2 and 3 Control Heads Not Compatible with XTL 2500 mobiles
Supports 2 Control Head Configurations	Supports 2 Control Head Configurations Only	Supports 2 Control Head Configurations Only
CPS Programmable for "One Active" Control Head OR "All Active"	Supports "One Active" Control Head	Supports "All Active" Control Head

Control Head Mode		
Supports INTERCOM Mode at all Control Heads	Does not support INTERCOM Mode	Does not support INTERCOM Mode
Uses Same Control Head Hardware that is interchangeable for all Control Heads	Uses Specific Hardware Models for "Front" and "Rear" Control Heads that are NOT Interchangeable	Uses Specific Hardware Models for "Front" and "Rear" Control Heads that are NOT Interchangeable

Guideline

Example Configurations: Dual Control

This price page consists of the following sections:

A. Required Main Models and Options for standard operation (Steps 1-11)

B. Optional Features

C. Optional DEK / Footswitch / Pushbutton Features

D. Aftermarket Accessories

E. Retrofit Mounting Kits

Section A: Required Main Model and Options

For standard Radio Operation (including Motorcycle) **Steps 1 - 11 must be** selected.

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

1: Main Model ***(Must Select One)***

******Low/Mid Power******

Description	Nomenclature	APC	Price
XTL 2500 764-870MHZ, 10-35W	M21URM9PW1 N	514	$1,497.00
XTL 2500 UHF R1 380-470MHZ, 10-40 W	M21QSM9PW1 N	518	$1,497.00
XTL 2500 VHF 136-174 MHZ, 10-50 W	M21KSM9PW1 N	518	$1,497.00
XTL2500 UHF R2 450-520 MHZ, 10-40 WATT	M21SSM9PW1 N	518	$1,497.00
898-941MHZ 10-30W	M21WRS9PW1 N	514	$1,497.00

******High Power******

Description	Nomenclature	APC	Price
UHF R1 380-470 MHZ 100 WATT	M21QTM9PW1 N	518	$1,997.00
VHF 136-174 MHZ 100 WATT	M21KTM9PW1 N	518	$1,997.00

2: Operation Mode ***(Must Select One)***

Description	Nomenclature	APC	Price
ENH: SOFTWARE ASTRO READY ANALOG	G241	500	$0.00
NOT COMPATIBLE with Encryption Algorithm W969, W793, W797, G298, G851, or G843 when combined with a Trunking Software Option. DES-OFB is not operational in Analog Operation.			
ENH: SOFTWARE ASTRO DIGITAL CAI OPERATION	G808	500	$515.00

3: System Enhancement Software *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: CONVENTIONAL OPERATION	G48	514	$275.00
ENH: SOFTWARE SMARTZONE/SINGLETONE	G51	514	$975.00

4: Control Head Hardware *(Must Always Select G442)*

******Multi Control Head Always Requires the Control Head Hardware******

Description	Nomenclature	APC	Price
ADD: XTL2500 CONTROL HEAD	G442	514	$292.00

5: Control Head Software *(Must Always Select G444)*

******Multi Control Head Always Requires the Control Head Software******

Description	Nomenclature	APC	Price
ADD: ADD: CONTROL HEAD SOFTWARE	G444	514	$0.00
MUST ALWAYS SELECT THIS OPTION			

6: Multiple Control Head Hardware *(Must Only Select One)*

******Dual Control Head XTL 2500 Radios Always Require the GA00092. This option QTY should ALWAYS equal the main line item Qty.******

Description	Nomenclature	APC	Price
ADD: DUAL-CONTROL HARDWARE	GA00092	514	$570.00

7: Mounting *(Must Select G67 Remote Mount)*

******Multi Control Head Always Requires Remote Mount******

Mid Power

Description	Nomenclature	APC	Price
ADD: REMOTE MOUNT	G67	500	$297.00
Required for Dual Control and High Power Radios			

High Power

Description	Nomenclature	APC	Price
ADD: QUICK REL REMOTE MOUNT W/KEYLOCK	G655	585	$346.00
High Power Only			
ADD: THUMB SCREW REMOTE MOUNT	G67	514	$297.00

8: Remote Mount Cables

******THERE IS NO STANDARD 17' CABLE OFFERED FOR A MULTI CONTROL HEAD CONFIGURATION. YOU MUST ALWAYS ORDER ONE CABLE PER CONTROL HEAD. ALSO, THEREFORE, IF GA00092 DUAL CONTROL RADIO IS DESIRED THEN THE TOTAL QTY OF SPEAKER OPTIONS SHOULD BE 2X (DOUBLE) THE MAIN LINE ITEM QTY.******

****THE TOTAL CABLE LENGTH MAY NOT BE GREATER THAN 131 FT (40 METERS) ****

Description	Nomenclature	APC	Price
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00

9: Antenna *(Must Select One)*

Dual Control Head Configurations require only ONE antenna option

No Antenna Needed For All Bands

Description	Nomenclature	APC	Price
ADD: NO ANTENNA NEEDED	G89	500	$0.00

7/800

Description	Nomenclature	APC	Price
ADD: ANTENNA 3DB LOW-PROFILE 764-870MHZ Corresponding kit: HAF4013 Corresponding Motorcycle kit: HAF4016	G174	500	$43.00
ADD: ANTENNA 3DB ELEVATED FEED 764-870MHZ NOT Compatible with Motorcycle. Corresponding kit: HAF4014.	G175	500	$75.00
ADD: ANTENNA 1/4 WAVE 764-870MHZ Corresponding kit: HAF4016 Corresponding Motorcycle kit: HAF4015 **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.**	G335	500	$14.00
ALT: ANTENNA 3DB GAIN 764-870MMZ Not compatible with Motorcycle. Corresponding kit: HAF4017.	W484	500	$38.00

UHF R1/R2

Description	Nomenclature	APC	Price
ANTENNA 1/4 WAVE WHIP 380-433 MHZ Not Compatible with Motorcycle Corresponding kit: HAE6012. **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.**	G425	585	$25.00
ANTENNA 1/4 WAVE WHIP 450-470 MHZ Not Compatible with Motorcycle Corresponding kit: HAE4003.	G426	585	$25.00
ANTENNA 3.5DB 380-433 MHZ Not Compatible with Motorcycle Corresponding kit: HAE6010.	G427	585	$55.00
ANTENNA 3.5DB 450-470MHZ Not Compatible with Motorcycle Corresponding kit: HAE4011.	G428	585	$50.00
ANTENNA 5.0 DB 380-433 MHZ	G429	585	$62.00

Not Compatible with Motorcycle
Corresponding kit: HAE6011.

ANTENNA 5.0 DB 450-470 MHZ	G430	585	$58.00
Not Compatible with Motorcycle Corresponding kit: RAE4014ARB.			
ANTENNA WIDEBAND 380-470 MHZ	G431	585	$58.00
Not Compatible with Motorcycle Corresponding kit: HAE6013.			
ADD: ANTENNA 5DB GAIN 494-512 MHZ	G486	585	$58.00
Not Compatible with Motorcycle Corresponding kit: RAE4016ARB.			
ADD: ADD: ANT 1/4 WAVE 470-512 MHZ	G490	585	$14.00
Not Compatible with Motorcycle Corresponding kit: HAE4004.			
~~ADD: ANTENNA 3 DB ROOF TOP 470-495~~	~~G493~~	~~585~~	~~$33.00~~
Not Compatible with Motorcycle Corresponding kit: HAE4012.			
ADD: ANTENNA 3 DB ROOF TOP 494-512 MHZ	G494	585	$33.00
Not Compatible with Motorcycle Corresponding kit: HAE4013.			
ADD: 2DB ANT WIDEBAND 450-520 MHZ	G511	585	$70.00
Corresponding kit:HAE6015 Corresponding Motorcycle kit:HAE6015			

VHF

Description	Nomenclature	APC	Price
ANTENNA 1/4 WAVE WHIP ROOF TOP (136-144 MHZ)	G296	585	$13.50
Corresponding kit: HAD4006 Corresponding Motorcycle kit: RAD4002ARB			
ANTENNA 1/4 WAVE ROFF TOP VHF (144-150.8 MHZ)	G297	585	$13.50
Corresponding kit: HAD4007 Corresponding Motorcycle kit: RAD4003ARB			
ANTENNA 1/4 WAVE ROOF TOP VHF (150.8-162 MHZ)	G299	585	$19.50
Corresponding kit: HAD4008 Corresponding Motorcycle kit: RAD4004ARB			
ANTENNA 1/4 WAVE ROOF TOP VHF (162-174 MHZ)	G300	585	$13.50
Corresponding kit: HAD4009 Corresponding Motorcycle kit: RAD4005ARB			
ANTENNA, VHF (136-174MHZ, 3.4 BANDWIDTH) 3DB ROOF TOP	G301	585	$58.50
Not Compatible with Motorcycle Corresponding kit: HAD4022A.			
ADD: 1/4 WAVE BROADBAND ANT 146-174 MHZ	G629	585	$64.00
Not Compatible with Motorcycle Corresponding kit: HAD4017.			

10: Microphones *(Must Select One)*

******Total # of microphones must match the total # of control heads being ordered. The G90 "No Mic Needed" option counts as a mic option******

******Therefore, if s GA00092 Dual Control radio is desired, then the total Qty of mic options should be 2x (double) the main line item Qty. ******

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED	G90	500	$0.00
Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G767. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ADD: PALM MICROPHONE	W22	500	$72.00
Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090			
ADD: KEYPAD MIC (GCAI)	W20	514	$180.00

Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option.
Required for Emergency Hot Mic Operation.
Corresponding kit: HMN4079

ADD: MODEL III KEYPAD TELEPHONE HANDSET	GA00221	514	$295.00

Corresponding kit: HMN4097A

11: Speakers *(Must Select One)*

******Total # of speakers must match the total # of control heads being ordered. The G142 "No Speaker Needed" option counts as a speaker option******

******Therefore, if a GA00092 Dual Control radio is desired, then the total Qty of speaker options should be 2x (double) the main line item Qty. ******

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT	B18	500	$60.00
Corresponding kit: HSN4031.			
ADD: INCREASED AUDIO POWER 13W	W432	500	$71.50
Corresponding kit: HSN4032. NOT COMPATIBLE with W665 Control Station and Motorcycle Configuration.			

Section B: Optional Features

The following options are **optional** and will provide additional capabilities, if required. All options below **ARE** compatible with XTL 2500 Dual Control Head configurations.

System Enhancement Options

Description	Nomenclature	APC	Price
ENH: ENHANCED DIGITAL ID DISPLAY	G114	500	$75.00
8 numeric character unit to unit display. NOTE: This option is required to display Radio ID or Radio Alias on the display for analog and digital conventional and trunking configurations.			
ENH: RADIO TRACE AND REMOTE MONITOR	G170	500	$75.00
Note: G170 option for Radio Trace/Remote Monitor is not compatible with W3 Control Head and G474 (Multi-Radio). For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ENH: SMARTZONE OMNILINK	G173	500	$200.00
Automatic Zoning Across Zones, Zone Registration, Trespass Protection, Over the Air Site Alias, 32 Preferred Sites, FastStart and AllStart Call Setup.			
ENH: ASTRO PROJECT 25 TRUNKING SOFTWARE	G361	500	$300.00
When ordering this option G51 & G806 MUST be ordered. G173 is included at "NO CHARGE".			
ADD: CONVENTIONAL VOTING SCAN ASTRO	G387	500	$200.00
This feature allows for voting of the Conventional Channels ONLY.			
ADD: TRUNKED ONE TOUCH BUTTON	G683	500	$150.00
ENH: OVER THE AIR PROGRAMMING	G996	518	$100.00
Compatible with P25 Trunking only. Requires W947 Data option. To do in field POP25 programming must use Advanced System Key (DVN4046A)			

Encryption Hardware and Software

Description	Nomenclature	APC	Price
ADD: ENCRYPTION UCM	G159	500	$150.00
REQUIRED for ANY encryption combination of Hardware Based Algorithms. Not Compatible with G193. CUSTOMERS USING THE FOLLOWING FREQUENCIES MUST ADD FREE OPTION "QA00351AA" (ENH: UCM SP TRIGGER) due to a known Self Quiting Issue for radios with the standard UCM. UHF SELF-QUIETING SPURS:			

UHF RANGE 1 FREQUENCIES:
380.975 MHz
393.2125 MHz
395.975 MHz
432 MHz
456 MHz

UHF RANGE 2 FREQUENCIES:
456 MHz
479.975 MHz
480 MHz

ADD: KEY RETENTION 30 SECONDS	G336	500	$50.00
G159 REQUIRED			
ADD: MULTIPLE KEY ENCRYPTION OPERATION	W969	500	$330.00
REQUIRED when using more than one encryption algorithm or encryption key.			
ENH: CONVENTIONAL TACTICAL REKEY WITH MULTIKEY	H04	514	$350.00
Must Order IV&D(Q947)			

Encryption Algorithms

Description	Nomenclature	APC	Price
ADD: ADP ENCRYPTION	G113	526	$349.00
REQUIRES G159. INCLUDES W969 Multikey. ORDER G194 if need ADP with DES/DES-XL-DES-OFB. NOT AVAILABLE with 3600 Trunking and Analog Conventional software Packages. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G808 in the Digital Conventional mode ONLY.			
Description	**Nomenclature**	**APC**	**Price**
ADD: ADP SOFTWARE DSP BASED CRYPTO	G193	500	$10.00
REQUIRES: G808 Digital Operation DOES NOT REQUIRE: G159 UCM or G77/G78 Encryption Warranty. Use standard warranty options if needed. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G808 in the Digital Conventional mode ONLY. .Includes 6 non-indexing encryption keys..			
Description	**Nomenclature**	**APC**	**Price**
AES ENCRYPTION-UCM	G843	412	$625.00
AES operates in digital mode only. NOT compatible with G241 ENH: SOFTWARE ASTRO READY ANALOG			
Description	**Nomenclature**	**APC**	**Price**
ADD: DES, DES-XL, DES-OFB ENCRYPTION - UCM	G625	412	$749.00
The Multikey (W969) or OTAR (G298) are only required when more than 1 key or 1 algorithm is programmed.			
Description	**Nomenclature**	**APC**	**Price**
ADD: DVI-XL ENCRYPTION	W793	500	$520.00
G159 is REQUIRED when ORDERING			
Description	**Nomenclature**	**APC**	**Price**
ADD: DVP-XL ENCRYPTION	W797	500	$487.00
G159 is REQUIRED when ORDERING			

Packet Data Interface/Data Cables

Description	Nomenclature	APC	Price
ADD: RS232 & IV&D PACKET DATA INTERFACE	W947	500	$200.00
This option is ONLY Operational on Digital Trunking and Digital Conventional systems!! INCLUDES the DLM Application. This option does not include Cables. G303 or G304 should be ordered separately.			
ADD: RS232 DATA INTFC CABLE-DASH	G303	500	$50.00
6 FT RS232 DATA CABLE Corresponding kit: HKN8180A.			
RS232 DATA INTFC CABLE-TRUNK	G304	500	$50.00
20 FT RS232 DATA CABLE Corresponding kit: HKN6181A.			
USB DATA INTFC CABLE-DASH	G308	500	$50.00
6 FT USB W/IGNITION SENSE			

Corresponding kit: HKN6163B.			
USB DATA INTFC CABLE-TRUNK	G309	500	$50.00
16.5 FT USB W/IGNITION SENSE Corresponding kit: HKN6172B.			

Frequency and Squelch Codes

Description	Nomenclature	APC	Price
ENH: FACTORY PROGRAMMING	W844	500	$0.00

Test Results

Description	Nomenclature	APC	Price
ADD: PRINTED TEST RESULTS	G799	500	$0.00

Amplifier ***(***UHF and VHF Mid and High Power Radios Only***)***

Description	Nomenclature	APC	Price
ADD: RF PRE-AMPLIFIER	W12	585	$66.00

Mounting Lock

Description	Nomenclature	APC	Price
ADD: KEY LOCK MOUNT	W81	500	$33.00

Service (All service options are NOT applicable to Asia Pac)

REPAIR SERVICE ADVANTAGE
Provides for extended hardware repair coverage beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$64.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 3 YR CANADA EXTND WRNTY XTL	GA00313	386	$177.00
ENH: 5 YR CANADA EXTND WRNTY XTL	GA00316	388	$240.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$246.00

REPAIR SERVICE ADVANTAGE (ENCRYPTED)
Provides for extended hardware repair coverage, including encryption, beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G77	185	$72.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G78	185	$137.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	GA00232	185	$205.00
ENH: 3 YR CANADA ENCR EXT WRNTY XTL	GA00314	386	$181.00
ENH: 5 YR CANADA ENCR EXT WRNTY XTL	GA00317	386	$244.00

REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola

portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00
ENH: 3 YEAR ENCRYPTED RSA (COMPREHENSIVE)	GA00255AA	185	$302.00

Section C: Optional DEK / Footswitch / Pushbutton Features

Auxiliary Switches DEK

Only One Auxiliary Switch DEK option can be supported per radio. Therefore, if the W591 is desired on a duel configuration, then the Qty will ALWAYS be equal to the main line item Qty.

Description	Nomenclature	APC	Price
ADD: AUXILIARY SWITCH PANEL	W591	500	$165.00

Corresponding kit: HLN1196.
G57 REQUIRED. NOT compatible with W3 control head or motorcycle.

Alarm

Only One Alarm Relay Cable option can be supported per radio. Therefore, if the W116 is desired on a dual configuration, then the Qty will ALWAYS be equal to the main line item Qty.

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAYS AND CABLE	W116	500	$75.00

For either HORN or LIGHTS. NOT both

Emergency Footswitch / Pushbutton

The Emergency Footswitch/Pushbutton configuration must be equal at each control head. Therefore, if the W470 is desired on a dual control configuration, then the Qty of W470 must be equal to 2x (double) the main line Qty.

Description	Nomenclature	APC	Price
ADD: EXTERNAL EMERGENCY FOOTSWITCH	W470	500	$56.00

Corresponding kit: HLN5113.

ADD: EXT EMERGENCY PUSHBUTTON	W688	500	$56.00

Corresponding kit: HLN5131

Section D: Aftermarket Accessories

Please refer to the standard XTL 2500 Price Page for complete list of Aftermarket Accessories

ASTRO Digital XTL 2500 700/800 MHz

ASTRO Digital XTL 2500 UHF R1 Mid-Power

ASTRO Digital XTL 2500 UHF R2 Mid-Power

ASTRO Digital XTL 2500 VHF Mid-Power

ASTRO Digital XTL 2500 UHF R1 High-Power

ASTRO Digital XTL 2500 VHF High-Power

Section E: Dual Control Head / Remote Control Head Replacement Retrofit Kit

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION.

Dual Control Head / Remote Control Head Replacement Retrofit Kit

The XTL 2500 M5 Dual Control Head Retrofit (also Remote Control Head Replacement) provides / requires the following:

- QTY 1: **REMOTE** mount control head assembly that includes a control head + flex cable + control head interface board rear housing (CHIB)
- Qty 1: Remote Control Head Power cable (HKN6188)
- Qty 1: Remote Control Head Mounting trunion and hardware
- Qty 1: Manual CD and dust cover kit
- OPTION: Must select a microphone option
- OPTION: Must select a speaker option
- OPTION: Must select a remote cable option

*** IF YOU ARE ADDING A CONTROL HEAD TO CONVERT A SINGLE CONTROL REMOTE MOUNT RADIO TO A DUAL CONTROL, THEN YOU MUST MAKE SURE THE RADIO HAD VERSION 6.9 SOFTWARE OR GREATER.

THE ALLIED SALES MODEL BELOW DOES NOT INCLUDE A FLASH FIRMWARE REFRESH. PLEASE SEE THE SUBSCRIBER FLASHPORT SOFTWARE UPGRADE PRICE PAGE ***

Description	Nomenclature	APC	Price
M5 REMOTE CTRL HD/CHIB REPLACEMENT / ADDITION	H1827	514	$570.00

Microphones

(Must Select One and Only One)

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED	G90	500	$0.00
Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ADD: PALM MICROPHONE	W22	500	$72.00
Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090			
ADD: KEYPAD MIC (GCAI)	W20	514	$180.00
Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option.			

Required for Emergency Hot Mic Operation.
Corresponding kit: HMN4079

Speakers ***(Must Select One)***

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$60.00
ADD: INCREASED AUDIO POWER 13W Corresponding kit: HSN4032. NOT COMPATIBLE with W665 Control Station and Motorcycle Configuretion.	W432	500	$71.50

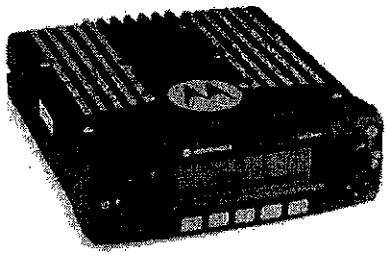
Remote Mount Cables

***** For Dual configurations, the total cable length may NOT be greater that 132 ft (40 meters) *****

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00

Data Compiled 16-May-2013 using DUP and all prices in USD



ASTRO® Digital XTL 2500 Mobile UHF 380-470 MHz Band

Secure and Trunked Radio Systems

Ship Card

General Information

The XTL 2500 Mobile Line offers 1 radio hardware model:

Hardware Mode	Modes	Alphanumeric Display Lines/Characters per Line
CH	1000	4/14

OPERATING MODES

XTL 2500 Radio Models are capable of operating in three different voice communication modes:

- normal analog (clear voice)
- 3.6kb ASTRO Digital (both clear and coded voice)
- 9.6KB ASTRO Digital (both clear and coded voice)

The mode of operation is programmed on a channel-by-channel basis. The XTL 2500 is capable of transmitting clear analog voice or clear (unencrypted) ASTRO digital voice, depending on the channel programming. XTL 2500 radio functions include ASTRO Digital signaling and digital coding.

Please note that XTL radios do NOT support FRED.

Each hardware model must be ordered with 1 of the System Enhancement Software Package options.
The matrix below indicates standard Trunking features for SmartZone (G51) System Packages. SmartZone features listed in the lower matrix are available in the (G51) package only. Radio Wide Features and Standard Conventional Features are listed above. System Enhancement Options can be added to the packages shown below. Refer to the System Enhancement Options for compatibility.

COMMON SOFTWARE FEATURES SUPPORTED BY G51 "SmartZone®"	"Analog Operation"(G241)	"ASTRO Digital"(G806)	"ASTRO Digital" (G51/G806/G361)
		Non-Project 25	Project 25
		(3600 Baud)	(9600 Baud)
RADIO WIDE FEATURES			
Maximum Modes			
XTL 2500 Control Head	1000	1000	1000
Analog and Digital Operation	-	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes
ADP Encryption	No	Yes	Yes
Encryption Capable	Yes	Yes	Yes
One Touch Operation	Yes	Yes	Yes

Radio Wide Transmit Inhibit	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES			
Conventional Features are additional radio wide features beyond those specified in the APCO Project 25 documents.			
CSQ/PL/DPL	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes
Monitor	Yes	Yes	Yes
~~DTMF Tone Generation~~	~~Future~~	~~Future~~	~~Future~~
MPL	Future	N/A	N/A
MDC PTT ID	Yes	Yes	Yes
MDC Selective Radio Inhibit (Decode Only)	Yes	Yes	Yes
MDC Call Alert (Encode/Decode)	Yes	Yes	Yes
MDC Radio Check (Decode Only)	Yes	Yes	Yes
MDC Voice Selective Call (Encode/Decode)	Yes	Yes	Yes
MDC Remote Monitor (Decode Only)	Yes	Yes	Yes
MDC Call Lists (Call Alert/Select Call)	Yes	Yes	Yes
MDC Emergency	Yes	Yes	Yes
MDC Silent Emergency (Encode)	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES			
These features are APCO Project 25 Interoperable Features when used in the ASTRO Digital CAI Mode (G806)			
Unaddressed Voice Call	-	Yes	Yes
Talk Group Call	-	Yes	Yes
Group Call Alert™	-	Yes	Yes
Talk Group Identification (TGID)	-	Yes	Yes
Selective Call (Individual Voice Call)	-	Yes	Yes
Selective Call Decode (Individual Voice Call)	-	Yes	Yes
PTT ID (Individual Identification)	-	Yes	Yes
Call Alert Encode/Decode	-	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	-	Yes	Yes
Telephone Interconnect	-	Yes	Yes
Unlimited	-	Yes	Yes
Selective Radio Inhibit	-	Yes	Yes
Radio Check	-	Yes	Yes
Status/Message	-	Yes	Yes
Trunking Type II Only Features			
Maximum Number of Trunked Systems-20			
Talkgroup Calls	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes
Dual Mode Scan	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes

Dynamic Regrouping	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only
Dispatcher Interrupt	No	No	No
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes
Radio Trace	Yes	Yes	No
Reprogram Request	Yes	Yes	Yes

Each hardware model must be ordered with 1 of the System Enhancement Software Package options, Conventional or SmartZone.

SOFTWARE FEATURES SUPPORTED BY G51 "SmartZone®"			
	"Analog Operation" (G241)	"ASTRO Digital" (G806)	"ASTRO Digital" (G51/G806/G361)
		Non-Project 25	Project 25
		(3600 Baud)	(9600 Baud)
Trunking Type II Only Features			
Voice on Control	Future	Future	Yes
SmartZone Automatic Site Registration	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes
SmartZone Busy Override	No	No	No
SmartZone Preferred Site	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the XTL 2500 Mobile Radio Series. Separation of frequencies can be as wide as the allowable sub-band

per radio model with no degradation of any performance specifications. **If an incorrect antenna is used, degraded performance may be experienced.**

COMMON AIR INTERFACE

Conventional channels are P25 compliant with the ASTRO Digital CAI Operation Software (G806). ASTRO P25 Trunking Software (G361) **must** be added for P25 compliance in trunked systems.

PROJECT 25 ENCRYPTION

When ordering any of the Encryption Algorithm:

- **MUST** order the Encryption UCM Hardware (G159)
- ADP Privacy not supported by OTAR. ADP is digital P25 conventional / P25 trunking only.
- The DES-OFB and AES-OFB Encryption offered is compliant with Project 25 standards and does not support analog encryption operation.
    - REQUIRES the ASTRO Digital CAI (G606) to operate the DES-OFB or AES-OFB Encryption
- If ordering a non-OFB (XL version) Encryption:

- The non-OFB encryption (XL versions) can be operated in either analog or CAI digital mode but will not be Project 25 compliant.

- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

- Encryption UCM Hardware (G159) module may be ordered without an Encryption Algorithm for later upgrade in the field.

FIELD INSTALLED PROJECT 25 ENCRYPTION

The DES-OFB and AES-OFB Encryption offered is compliant with Project 25 standards. Operation of DES-OFB and/or AES-OFB encryption requires the ASTRO Digital CAI (G806). Radios can be upgraded via FLASHport to CAI operation.

- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

FIPS 140-2 COMPLIANCE

Encryption Modules equipped with AES are FIPS 140-2 compliant. ADP Privacy is not FIPS compliant. Further information regarding FIPS 140-2 certification may be found using the following links:

FIPS 140-2 Crypto Module Validation Program (CMVP)

NIST Cryptographic Module Validation Lists

Self-Quieting Spurs Frequency (MHz)

UHF R1 384MHz and 435.2MHz

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it laverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offaring multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experianced the benafits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on APX 7000 Dual Display Portable radios. Advanced Messaging is NOT supported on APX 7000 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for APX Mobiles Require: (Note: some control heads are not available on all main models)

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heeds Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- P25 Conventional (G48)
- Packet Data Interface (W947)

OR

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking Software (G361)

- Packet Data Interface (W847)

NOTE: There is no specific option to order for the Advenced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messeging functionelity carries a per-radio charge on the server side of $50 (one time license fee to access messeging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

FCC Information

Band/Model	Power Output	Transmitter Certification (Type Acceptance)	Emissions	Applicable Rules
380-470 MHz	10 - 40 Watts	AZ492FT4862	8K10F1D, 8K10F1E, 11K0F3E, 16K0F3E, 20K0F1E, 20K0F1D	22, 74, 90

- Except for Itinerant and low-power incident channels.

** Itinerant & Low-Power Incident Channels	
Channel Number	Frequency Range (MHz)

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

Ç Canada personnel refer to Section A under CANADA ONLY information.

Guideline

This price page consists of the following sections:

A. Required Main Models and Options for standard operation (Steps 1-9)

B. Control Station

C. Optional Features

D. Aftermarket Accessories

Section A: Required Main Model and Options

For standard Radio Operation **Steps 1 - 9 must be** selected.

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

1: Main Model ***(Must Select)***

Description	Nomenclature	APC	Price
XTL 2500 UHF R1 380-470MHZ, 10-40 W	M21QSM9PW1 N	518	$1,497.00

2: Operation Mode *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: SOFTWARE ASTRO READY ANALOG	G241	500	$0.00
NOT COMPATIBLE with Encryption Algorithm W969, W793, W797, G296, G651, or G843 when combined with a Trunking Software Option. DES-OFB is not operational in Analog Operation.			
ENH: XTL SOFTWARE ASTRO DIGITAL CAI OPERATION	G806	514	$515.00

3: System Enhancement Software *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: CONVENTIONAL OPERATION	G48	514	$275.00
ENH: SOFTWARE SMARTZONE/SINGLETONE	G51	514	$975.00

3b: Optional System Enhancement Software *(Not Required)*

Description	Nomenclature	APC	Price
ENH: SMARTZONE OMNILNK MULTZONE SYSTEM SW	G173	656	$200.00
Automatic Zoning Across Zones, Zone Registration, Trespass Protection, Over the Air Site Alias, 32 Preferred Sites, FastStart and AllStart Call Setup.			
ADD: P25 TRUNKING SOFTWARE	G361	656	$300.00
When ordering this option G51 & G806 MUST be ordered. G173 is included at "NO CHARGE".			

4: Control Head Hardware *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: XTL2500 CONTROL HEAD	G442	514	$292.00
ADD: NO CONTROL HEAD NEEDED	G88	500	$0.00
Requires remote mounting option (G67 or G655)			

5: Control Head Software *(Must Always Select G444)*

Description	Nomenclature	APC	Price
ADD: ADD: CONTROL HEAD SOFTWARE	G444	514	$0.00
MUST ALWAYS SELECT THIS OPTION			

6: Mounting *(Must Select One)*

If a remote mount cable other than 5 meters (17ft) is desired for the G67, please reference the "Remote Mount Cables" section below in Section C: Optional Features

Description	Nomenclature	APC	Price
ADD: DASH MOUNT	G66	500	$125.00
Required for Control Station Operation			
ADD: REMOTE MOUNT	G67	500	$297.00
Required for Dual Control and High Power Radios			

7: Antenna *(Must Select One)*

Description	Nomenclature	APC	Price
ANTENNA 1/4 WAVE WHIP 380-433 MHZ	G425	585	$25.00
Not Compatible with Motorcycle Corresponding kit: HAE6012. **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.**			
ANTENNA 1/4 WAVE WHIP 450-470 MHZ	G426	585	$25.00
Not Compatible with Motorcycle Corresponding kit: HAE4003.			
ANTENNA 3.5DB 380-433 MHZ	G427	585	$55.00
Not Compatible with Motorcycle Corresponding kit: HAE6010.			
ANTENNA 3.5DB 450-470MHZ	G428	585	$50.00
Not Compatible with Motorcycle Corresponding kit: HAE4011.			

ANTENNA 5.0 DB 380-433 MHZ Not Compatible with Motorcycle Corresponding kit: HAE8011.	G429	585	$62.00
ANTENNA 5.0 DB 450-470 MHZ Not Compatible with Motorcycle Corresponding kit: RAE4014ARB.	G430	585	$58.00
ANTENNA WIDEBAND 380-470 MHZ Not Compatible with Motorcycle Corresponding kit: HAE8013.	G431	585	$58.00
ADD: NO ANTENNA NEEDED	G89	500	$0.00

8: Microphones ***(Must Select One)***

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.	G90	500	$0.00
ADD: PALM MICROPHONE Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090	W22	500	$72.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079	W20	514	$180.00
ADD: HANDSET/HANGUP GCAI Coiled Cable with Toggle Switch Accessory Kit: HLN1457A	G874	514	$285.00
ADD: CONTROL STATION DESK MICROPHONE Desh Mount Required Corresponding Kit: RMN5070	W362	500	$169.00
ADD: MODEL III KEYPAD TELEPHONE HANDSET Corresponding kit: HMN4097A	GA00221	514	$295.00

9: Speakers ***(Must Select One)***

****G142 NO SPEAKER Required for Control Station****

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$60.00
ADD: INCREASED AUDIO POWER 13W Corresponding kit: HSN4032. NOT COMPATIBLE with W685 Control Station and Motorcycle Configuration.	W432	500	$71.50

Section B: Control Station

CONTROL STATION OPERATION

I. First, you must review your selection of the following options from "Section 1: Required Options".

- Step 1 *(Note: Main Model)*
- Step 2 *(Note: All listed options are compliant)*
- Step 3 *(Note: All listed options are compliant)*
- Step 4 *(Nota: Must select G442. XTL 2500 Control Head is compatible with Control Station Application).*
- Step 5 *(Note: Must Select G444. The XTL 2500 Control Head Software is compatible with Control Station Application).*
- Step 6 *(Note: Must Select G66. Control Station operation is only offered in Dash mount configuretion).*
- Step 7 *(Note: All listed options are compliant).*
- Step 8 *(Note: Select desired microphone option and if no microphone is needed, G90 must be selected).*
- Step 9 *(Note: Must Select G142 - No Speaker Needed).*

II. You Must Select ONE of the Following "Specific Control Station Options":

SPECIFIC CONTROL STATION OPTIONS

Control Station Operation and Power Supply *(Must Select BOTH)*

Description	Nomenclature	APC	Price
ADD: CONTROL STATION POWER SUPPLY	G91	500	$269.00
Corresponding kit: HPN4007			
ADD: CONTROL STATION OPERATION	W665	500	$70.00
For DASH MOUNT radios ONLY (G66)!! Not compatible with W3, or W9 control head options. G665 includes a base tray and a speaker; therefore G142 has to be ordered to eliminate extra Speaker. Requires a Power Supply (G91 can be ordered as a Power Supply). Requires one of the Microphone Options: G90, W22 or W382. Corresponding kit: HLN6042			

III. Features listed in "Section C: Optional Features" are optional, if applicable. Please read the option's description to determine compatibility.

Section C: Optional Features

The following features are optional and will provide additional capabilities, if required.

System Enhancement Options

Description	Nomenclature	APC	Price
ENH: ENHANCED DIGITAL ID DISPLAY	G114	500	$75.00
8 numeric character unit to unit display. NOTE: This option is required to display Radio ID or Radio Alias on the display for analog and digital conventional and trunking configurations.			
ENH: RADIO TRACE AND REMOTE MONITOR	G170	500	$75.00
Note: G170 option for Radio Trace/Remote Monitor is not compatible with W3 Control Head and G474 (Multi-Radio). For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ADD: CONVENTIONAL VOTING SCAN ASTRO	G387	500	$200.00
This feature allows for voting of the Conventional Channels ONLY.			
ADD: TRUNKED ONE TOUCH BUTTON	G683	500	$150.00
ENH: OVER THE AIR PROGRAMMING	G996	518	$100.00
Compatible with P25 Trunking only. Requires W947 Date option. To do in field POP25 programming must use Advanced System Key (DVN4046A)			
ADD: XTL2500 RADIO AUTHENTICATION	W391	514	$100.00

Encryption Hardware and Software

Description	Nomenclature	APC	Price
ADD: ENCRYPTION UCM	G159	500	$150.00
REQUIRED for ANY encryption combination of Hardware Based Algorithms. Not Compatible with G193. CUSTOMERS USING THE FOLLOWING FREQUENCIES MUST ADD FREE OPTION "QA00351AA" (ENH: UCM SP TRIGGER) due to a known Self Quiting Issue for radios with the standard UCM. UHF SELF-QUIETING SPURS: UHF RANGE 1 FREQUENCIES: 383.975 MHz 393.2125 MHz 395.975 MHz 432 MHz 456 MHz UHF RANGE 2 FREQUENCIES: 456 MHz 479.975 MHz 460 MHz			
ADD: KEY RETENTION 30 SECONDS	G336	500	$50.00
G159 REQUIRED			
ADD: MULTIPLE KEY ENCRYPTION OPERATION	W969	500	$330.00

REQUIRED when using more than one encryption algorithm or encryption key.

ENH: CONVENTIONAL TACTICAL REKEY WITH MULTIKEY	H04	514	$350.00

Must Order IV&D(Q947)

Encryption Algorithms

Description	Nomenclature	APC	Price
ADD: ADP ENCRYPTION	G113	526	$349.00

REQUIRES G159. INCLUDES W969 Multikey. ORDER G194 if need ADP with OES/OES-XL-DES-OFB. NOT AVAILABLE with 3600 Trunking and Analog Conventional software Packages. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G806 in the Digital Conventional mode ONLY.

Description	Nomenclature	APC	Price
ADD: ADP SOFTWARE DSP BASED CRYPTO	G193	500	$10.00

REQUIRES: G806 Digital Operation
DOES NOT REQUIRE: G159 UCM or G77/G78 Encryption Warranty. Use standard warranty options if needed
COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G806 in the Digital Conventional mode ONLY. .Includes 8 non-indexing encryption keys..

Description	Nomenclature	APC	Price
AES ENCRYPTION-UCM	G843	412	$625.00

AES operates in digital mode only.
NOT compatible with G241 ENH: SOFTWARE ASTRO READY ANALOG

Description	Nomenclature	APC	Price
ADD: DES, DES-XL, DES-OFB ENCRYPTION - UCM	G625	412	$749.00

The Multikey (W969) or OTAR (G298) are only required when more than 1 key or 1 algorithm is programmed.

Description	Nomenclature	APC	Price
ADD: DVI-XL ENCRYPTION	W793	500	$520.00

G159 is REQUIRED when ORDERING

Description	Nomenclature	APC	Price
ADD: DVP-XL ENCRYPTION	W797	500	$487.00

G159 is REQUIRED when ORDERING

Remote Mount Cables

******The 5 meter (17 FT) Cable Ships Standard******

Description	Nomenclature	APC	Price
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT)	G582	514	$65.00

For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 maters). Therefore, this cable should not be used with a dual, tri, or quad control radio
Corresponding kit: HKN6164

ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT)	G607	514	$45.00

Corresponding kit: HKN6168A

ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT)	G609	514	$35.00

Corresponding kit: HKN6167

ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT)	G610	514	$25.00

Corresponding kit: HKN6166

ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT)	G879	514	$55.00

Corresponding kit: HKN6165

ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT)	G618	514	$10.00

Corresponding kit: HKN6170

DEK

Description	Nomenclature	APC	Price
ADD: STATUS MESSAGE 8 MESSAGES	W355	500	$475.00

NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration.
CORRESPONDING KIT: H1638A

ADD: DDE STATUS MESSAGES 16	W374	500	$650.00

NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration.
CORRESPONDING KIT: H1639A

Direct Mode Entry

Description	Nomenclature	APC	Price
ADD: 8 MODE DIRECT ENTRY ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1835A	W599	500	$180.00
ADD: 16 MODE DIRECT ENTRY ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1838A	W614	500	$360.00
ADD: 24 MODE DIRECT ENTRY NOT COMPATIBLE with W269 Siren/PA. 9600 Systems offer ONLY "Status" and not "Message". ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1637A	W615	500	$540.00

WHELEN SIREN (MOTOROLA COMPATIBLE)

NOTE: THE NEW SIREN IS COMPATIBLE WITH APX AND XTL MOBILES WITH "O" SERIES OR M5 CONTROL HEADS ONLY. THIS SIREN IS NOT COMPATIBLE WITH ANY "W" SERIES CONTROL HEADS

THE SIREN BASE MODEL TT2592, CABLE TT05707 AND THE SIREN MOUNTING HARDWARE TT0507 MUST ALWAYS BE ORDERED (THIS SIREN IS ORDERED AS A SEPARATE LINE ITEM, TT2592 IS THE MODEL)

DEK OPTIONS ARE AVAILABLE AS OPTIONS TO THE SUBSCRIBER AS SHOWN BELOW

Description	Nomenclature	APC	Price
WHELEN/MOTOROLA SIREN	TT2592	656	$395.00
SIREN HARDWARE INSTALL KIT	TT05707AA	656	$20.00
SIREN TO RADIO CABLE	TT05708AA	656	$65.00
SIREN TO DEK CABLE - O3 CONTROL HEAD ONLY	TT05709AA	656	$78.00

SIREN DEK OPTIONS

ADD: DEK FOR WHELEN SIREN W/ O3 CH ONLY	GA00812	656	$105.00
ADD: DEK FOR WHELEN SIREN	GA00814	656	$105.00

Auxiliary Switches

Description	Nomenclature	APC	Price
ADD: AUXILIARY SWITCH PANEL Corresponding kit: HLN1196. G67 REQUIRED. NOT compatible with W3 control head or motorcycle.	W591	500	$165.00

Alarm

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAYS AND CABLE For either HORN or LIGHTS. NOT both	W116	500	$75.00

Emergency

Description	Nomenclature	APC	Price
ADD: PTT FOOTSWITCH Requires W672 Visor Mic. Kit Number: GLN7278B	G235	514	$51.00
ADD: EXT EMERGENCY PUSHBUTTON Corresponding kit: HLN5131	W688	500	$56.00

Frequency and Squelch Codes

Description	Nomenclature	APC	Price
ENH: FACTORY PROGRAMMING	W844	500	$0.00

Packet Data Interface / Data Cables

Description	Nomenclature	APC	Price
ADD: RS232 DATA INTFC CABLE-DASH	G303	500	$50.00

6 FT RS232 DATA CABLE Corresponding kit: HKN6160A.			
RS232 DATA INTFC CABLE-TRUNK	G304	500	$50.00
20 FT RS232 DATA CABLE Corresponding kit: HKN6161A.			
ADD: RS232 & IV&D PACKET DATA INTERFACE	W947	500	$200.00
This option is ONLY Operational on Digital Trunking and Digital Convantional systems!! INCLUDES the DLM Application. This option does not include Cables. G303 or G304 should be ordered seperetely.			
USB DATA INTFC CABLE-DASH	G308	500	$50.00
6 FT USB W/IGNITION SENSE Corresponding kit: HKN6163B.			

RF Modem

******Supported for 9600 Trunking only******

Description	Nomenclature	APC	Price
ENH: ENABLE RF MODEM	G319	500	$0.00
The XTL mobiles do not support Site Lens or Systsm Watch. Therefore, the APX RF Modem function does not support the legacy System Watch or Site Lens applications. The APX RF Modem supports Conventional or 9600 Trunking only. Enabling the RF Modem in conventionel mode allows provisioned APX portablss to pasa accountability data through the porteble option Q445.			

Servica (Thase Service options are NOT applicable for Asia Pac)

REPAIR SERVICE ADVANTAGE

Provides for extended hardware repair coverage beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$64.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$246.00
ENH: 3 YR CANADA EXTND WRNTY XTL	GA00313	386	$177.00
ENH: 5 YR CANADA EXTND WRNTY XTL	GA00316	386	$240.00

REPAIR SERVICE ADVANTAGE (ENCRYPTED)

Provides for extended hardware repair coverage, including encryption, beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option..

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G77	185	$72.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G78	185	$137.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	GA00232	185	$205.00
ENH: 3 YR CANADA ENCR EXT WRNTY XTL	GA00314	386	$181.00
ENH: 5 YR CANADA ENCR EXT WRNTY XTL	GA00317	386	$244.00

REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)

Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be mada only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00
ENH: 3 YEAR ENCRYPTED RSA (COMPREHENSIVE)	GA00255AA	185	$302.00

Test Results

Description	Nomenclature	APC	Price
ADD: PRINTED TEST RESULTS	G799	500	$0.00

Amplifier

UHF and VHF Mid and High Power Radios Only

Description	Nomenclature	APC	Price
ADD: RF PRE-AMPLIFIER	W12	585	$66.00

Miscellaneous

Description	Nomenclature	APC	Price
ADD: KEY LOCK MOUNT	W81	500	$33.00

Section D: Aftermarket Accessories

Algorithm Kits

Description	Nomenclature	APC	Price
XTL5000 AES256, ADP	NNTN8328A	585	$997.00
XTL5000 DES-XL, DES-OFB, ADP	NNTN8327A	585	$998.00
XTL5000 DES-XL, DES-OFB, AES256, AD	NNTN8326A	585	$1,499.00
XTL5000 AES256	NNTN8331A	456	$795.00
XTL5000 DVP-XL	NNTN8323A	585	$715.00
XTL5000 DES-XL, DES-OFB	NNTN8335A	585	$840.00

Antennas

Description	Nomenclature	APC	Price
ANTENNA, UHF (450-470 MHZ) 1/4 WAVE ROOF MOUNT	HAE4003	554	$21.50
Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: Unity, VSWR: Less than 2:1, Impedance: 50 Ohms, nominal			
ANTENNA UHF (445-470 MHZ) 3.5DB GAIN ROOF MOUNT	HAE4011	554	$77.50
Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedance: 50 Ohms, nominal.			
ANTENNA UHF (380-433 MHZ) 3.5DB GAIN	HAE6010	476	$63.00
ANTENNA UHF (445-470 MHZ) 5DB GAIN	RAE4014ARB	554	$110.00
Roof Mount, SPECTRUM Base Loaded 5 dB Gain Antenna, Cable: RG58 A/U, Rugged Duty, Mini UHF connector.			
ANTENNA 1/4 WAVE WHIP 380-433 MHZ	HAE6012	585	$23.00
ANTENNA UHF (380-433 MHZ) 5DB GAIN	HAE6011	585	$63.00
ANTENNA WIDEBAND 2.0DB GAIN 380-470 MHZ	HAE6013	585	$55.00

Cable (s)

AUDIO CABLE ADAPTER	HKN8158	500	$49.00
ADAPTER CABLE DATA	HKN6159	500	$49.00

Cables (Remote Mount)

CABLE, REMOTE MOUNT, 75 FT	HKN6166	514	$80.00
CABLE, REMOTE MOUNT, 115 FT	HKN6165	514	$105.00
CABLE,REMOTE MOUNT,131 FT	HKN6164	514	$122.00

Control Station

Description	Nomenclature	APC	Price
MOBILE DESK TRAY	HLN6042	617	$77.00
PS 14V 10A 117/240 VAC.	HPN4007C	500	$296.00

Customer Programming Service

Data

CABLE KIT 20' DATA RS232 Data Interface Cable - REMOTE	HKN6161	476	$50.00

Manuals

Description	Nomenclature	APC	Price
XTL 2500 M5 MANUAL	HLN1460D	514	$12.00

Microphones

HANDSET/HANGUP (HANGUP CUP)	HLN1457	706	$285.00
MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	706	$295.00
XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00
AS. SPECTRA & XTL5000 DESKTOP MIC	RMN5070A	706	$172.00

Speakers

Description	Nomenclature	APC	Price
EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	HSN4038	476	$60.50
MCS EXT SPKR 13W	HSN4032B	500	$71.50

Bull Horns for Sirens and Public Address

Description	Nomenclature	APC	Price
SPEAKER SIREN, ROUND W/CHROME & BLACK	TDN6251	706	$329.00
SPEAKER RECTANGULAR WITH CHROME FINISH	TDN6252	706	$265.00
SPEAKER UNDERHOOD WITH GRAY FINISH	TDN6253	706	$220.00
SPEAKER ROUND WITH GRAY FINISH	TDN6254	706	$248.00

Miscellaneous

Description	Nomenclature	APC	Price
WILDCARD	HLN1196	412	$165.00
AUXILIARY SWITCH PANEL (W591-W9)	HLN1342	617	$165.00

Section E: Vehicle Location Solution

Vehicle Location Solution

Vehicle location or GPS is now available on the ASTRO 25 XTL 2500 mobile radio.

The TrimFleet ™ GPS mobile units provide a versatile and economical platform for mobils positioning applications. Using state-of-the-art GPS receiver technology, the TrimFleet GPS receiver unit has been optimized for vehicle installation and operation, providing reliable

vehicle position, direction, speed, time and status in any weather, anywhere in the world.

The TrimFleet receiver contains a 12-channel GPS module and an (optional) angular rate sensor module. The TrimFleet receiver connects directly to in-vehicle laptops/workstations as well as VRM and XTL radios. The TrimFleet GPS receiver outputs positions when in GPS coverage via either of its RS-232C serial ports in National Marine Electronics Association Protocol (NMEA), Trimble ASCII Interface Protocol (TAIP) and Point to Point Protocol (PPP) formats. The TrimFleet receiver may be configured to send the position data in either protocol via the two RS-232C data ports. Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

The TrimFleet DRU Plus may be equipped with an optional internal module to provide dead reckoned position data while outside of GPS coverage. This is accomplished through the use of advanced gyroscopic technology in combination with connections to the vehicle speed sensor and vehicle direction signal (forward or reverse.) Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

I/O PORTS

The TrimFleet DRU Plus provides two RS232C compatible communication ports that may be connected to external devices. One port provides a DE-9 female DCE connection, and the other port provides a DE-9 female DTE connection. The ports may be configured individually for baud rates between 110 and 115.2K baud. Both ports support NMEA and TAIP protocols. The default configuration for both ports is 9600 beud TAIP.

Also provided is support for PPP over RS232C on Port 1. An IP capable XTL 2500 radio may be interfaced to the port to allow wireless transmission of TAIP messages to an AVL server. The TAIP messages will be encapsulated in UDP packets and sent to a configurable destination IP address and port. TAIP messages may also be sent back to the TrimFleet DRU Plus by the AVL application to modify reporting rates and query current location or status.

Vehicle location is available only on ASTRO Conventional and Trunked IV&D Systems. Subscribers must have version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software.

Digital Conventional Ordering requirements for XTL 2500 Mobile:

- Requires Control Head (G442)
- ASTRO Digital CAI Operation (G806)
- Conventional Operation (G48)
- Packet Data Interface (W947)

- Mid Power RS232 Cable (G303 Dash / G304 Remote) *(Hooks to the J2 rectangular and DB9 connector)*

- High Power RS232 Cable (HKN6122) *(Hooks to the DB25 connector and the DB9 connector)*

P25 Trunking Ordering requirements for XTL 2500 Mobile:

- Requires Control Head (G442)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking 9600 Software (G361)
- Packet Data Interface (W947)

- Mid Power RS232 Cable (G303 Dash / G304 Remote) *(Hooks to the J2 rectangular and DB9 connector)*

- High Power RS232 Cable (HKN6122) *(Hooks to the DB25 connector and the DB9 connector)*

Description	Nomenclature	APC	Price
TRIMFLEET DRU PLUS (W/DR & POWER CABLE)	DDN9439	222	$745.00

Description	Nomenclature	APC	Price
TRIMFLEET APU (W/POWER CABLE)	DDN9440	222	$620.00

Description	Nomenclature	APC	Price
TRIMFLEET GPS ANTENNA WITH CABLE	DDN9474	222	$99.00

Section F: Retrofit Mounting Kits

PLEASE READ ALL ALLIED MODEL AND OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION.

Retrofit Mounting Kits

Remote to Dash

Converts an existing remote mounted XTL 2500 mobile radio to a dash mounted radio. Applicable to Low/Mid power models.

Description	Nomenclature	APC	Price
REMOTE TO DASH RETROFIT KIT FOR O5 OR XTL2500 Contains dash mount headbridge hardware. Does not include transciever trunion. Does not include a control head.	H1817	514	$75.00

Dash to Remote

Converts an existing dash mounted XTL 2500 mobile radio to a remote mounted radio. Applicable to Low/Mid power models.

If you are retrofitting XTL 2500 radios that shipped AFTER 7/1/06, order H1818.

If you are retrofitting XTL 2500 radios that shipped BEFORE 7/1/06, order H1825.

Description	Nomenclature	APC	Price
O5/M5 DASH TO O5/M5 REMOTE RETROFIT KIT Contains rear housing for remote O5, O5 control head remote mounting hardware, remote O5 power cable, remote transciever faceplete. Remote cable available as option. Does not include transciever trunion. Does note include O5 control head.	H1818	514	$325.00

Remote Mount Cables

(Cable option is NOT required. If cable option is ordered, select ONLY one option.)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT) ***For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control redio*** Corresponding kit: HKN6164	G582	514	$65.00

Section G: Remote Control Head Replacement / Dual Control Head Retrofit Kit

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION.

Remote Control Head Replacement AND Dual Control Head Retrofit Kit

The XTL 2500 M5 Remote Control Head Replacement AND Dual Control Head Retrofit provides / requires the following:

- QTY 1: **REMOTE** mount control head assembly that includes a control head + flex cable + control head interface board rear housing (CHIB)
- Qty 1: Remote Control Head Power ceble (HKN6188)
- Qty 1: Remote Control Head Mounting trunion and hardware
- Qty 1: Manual CD and dust cover kit
- OPTION: Must select a microphone option
- OPTION: Must select a speaker option
- OPTION: Must select a remote cable option

*** IF YOU ARE ADDING A CONTROL HEAD TO CONVERT A SINGLE CONTROL REMOTE MOUNT RADIO TO A DUAL CONTROL, THEN YOU MUST MAKE SURE THE RADIO HAD VERSION 6.9 SOFTWARE OR GREATER.

THE ALLIED SALES MODEL BELOW DOES NOT INCLUDE A FLASH FIRMWARE REFRESH. PLEASE SEE THE SUBSCRIBER FLASHPORT SOFTWARE UPGRADE PRICE PAGE ***

Description	Nomenclature	APC	Price
M5 REMOTE CTRL HD/CHIB REPLACEMENT / ADDITION	H1827	514	$570.00

Microphones

(Must Select One and Only One)

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED	G90	500	$0.00
Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ADD: PALM MICROPHONE	W22	500	$72.00
Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1080			
ADD: KEYPAD MIC (GCAI)	W20	514	$180.00
Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079			

Speakers ***(Must Select One)***

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT	B18	500	$60.00
Corresponding kit: HSN4031.			
ADD: INCREASED AUDIO POWER 13W	W432	500	$71.50
Corresponding kit: HSN4032. NOT COMPATIBLE with W6B5 Control Station and Motorcycle Configuration.			

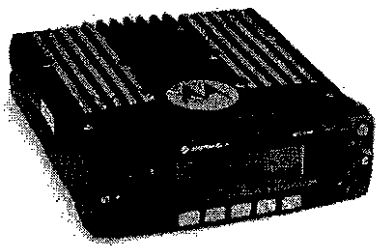
Remote Mount Cables

***** For Dual configurations, the total cable length may NOT be greater that 131 ft (40 meters) *****

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6166	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT) ***For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio*** Corresponding kit: HKN6164	G582	514	$65.00

Data Compiled 16-May-2013 using DUP and all prices in USD



ASTRO® Digital XTL 2500 Mobile
UHF R2 450-520 MHz Band

Secure and Trunked Radio Systems

Ship Card

General Information

The XTL 2500 Mobile Line offers 1 radio hardware model:

Hardware Mode	Modes	Alphanumeric Display
		Lines/Characters
		per Line
CH	1000	4/14

OPERATING MODES
XTL 2500 Radio Models are capable of operating in three different voice communication modes:

- normal analog (clear voice)
- 3.6kb ASTRO Digital (both clear and coded voice)
- 9.6KB ASTRO Digital (both clear and coded voice)

The mode of operation is programmed on a channel-by-channel basis. The XTL 2500 is capable of transmitting clear analog voice or clear (unencrypted) ASTRO digital voice, depending on tha channel programming. XTL 2500 radio functions include ASTRO Digital signaling and digital coding.

Please note that XTL radios do NOT support FRED.

Each hardware model must be ordered with 1 of the System Enhancement Software Package options.
The matrix below indicates standard Trunking features for SmartZone (G51) System Packages. SmartZone features listed in the lower matrix are available in the (G51) package only. Radio Wide Features and Standard Conventional Features are listed above. System Enhancement Options can be added to the packages shown below. Refer to the System Enhancement Options for compatibility.

COMMON SOFTWARE FEATURES SUPPORTED BY G51 "SmartZone®"			
	"Analog Operation"(G241)	"ASTRO Digital"(G806)	"ASTRO Digital" (G51/G806/G361)
		Non-Project 25	Project 25
		(3600 Baud)	(9600 Baud)
RADIO WIDE FEATURES			
Maximum Modes			
XTL 2500 Control Head	1000	1000	1000
Analog and Digital Operation	-	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes
ADP Encryption	No	Yes	Yes
Encryption Capable	Yes	Yes	Yes

One Touch Operation	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES			
Conventional Features are additional radio wide features beyond those specified in the APCO Project 25 documents.			
CSQ/PL/DPL	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes
Monitor	Yes	Yes	Yes
DTMF Tone Generation	Future	Future	Future
MPL	Future	N/A	N/A
MDC PTT ID	Yes	Yes	Yes
MDC Selective Radio Inhibit (Decode Only)	Yes	Yes	Yes
MDC Call Alert (Encode/Decode)	Yes	Yes	Yes
MDC Radio Check (Decode Only)	Yes	Yes	Yes
MDC Voice Selective Call (Encode/Decode)	Yes	Yes	Yes
MDC Remote Monitor (Decode Only)	Yes	Yes	Yes
MDC Call Lists (Call Alert/Select Call)	Yes	Yes	Yes
MDC Emergency	Yes	Yes	Yes
MDC Silent Emergency (Encode)	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES			
These features are APCO Project 25 Interoperable Features when used in the ASTRO Digital CAI Mode (G806)			
Unaddressed Voice Call	-	Yes	Yes
Talk Group Call	-	Yes	Yes
Group Call Alert™	-	Yes	Yes
Talk Group Identification (TGID)	-	Yes	Yes
Selective Call (Individual Voice Call)	-	Yes	Yes
Selective Call Decode (Individual Voice Call)	-	Yes	Yes
PTT ID (Individual Identification)	-	Yes	Yes
Call Alert Encode/Decode	-	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	-	Yes	Yes
Telephone Interconnect	-	Yes	Yes
Unlimited	-	Yes	Yes
Selective Radio Inhibit	-	Yes	Yes
Radio Check	-	Yes	Yes
Status/Message	-	Yes	Yes
Trunking Type II Only Features			
Maximum Number of Trunked Systems-20			
Talkgroup Calls	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes
Dual Mode Scan	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes

Status/Message	Yes	Yes	Status Only
Dispatcher Interrupt	No	No	No
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes
Radio Trace	Yes	Yes	No
Reprogram Request	Yes	Yes	Yes

Each hardware model must be ordered with 1 of the System Enhancement Software Package options, Conventional or SmartZone.

SOFTWARE FEATURES SUPPORTED BY G51 "SmartZone®"			
	"Analog Operation" (G241)	"ASTRO Digital" (G806)	"ASTRO Digital" (G51/G806/G361)
		Non-Project 25	Project 25
		(3600 Baud)	(9600 Baud)
Trunking Type II Only Features			
Voice on Control	Future	Future	Yes
SmartZone Automatic Site Registration	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes
SmartZone Busy Override	No	No	No
SmartZone Preferred Site	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the XTL 2500 Mobile Radio Series. Separation of frequencies can be as wide as the allowable sub-band

per radio model with no degradation of any performance specifications. **If an incorrect antenna is used, degraded performance may be experienced.**

COMMON AIR INTERFACE

Conventional channels are P25 compliant with the ASTRO Digital CAI Operation Software (G806). ASTRO P25 Trunking Software (G361) **must** be added for P25 compliance in trunked systems.

PROJECT 25 ENCRYPTION

When ordering any of the Encryption Algorithm:

- **MUST** order the Encryption UCM Hardware (G159)
- ADP Privacy not supported by OTAR. ADP is digital P25 conventional / P25 trunking only.
- The DES-OFB and AES-OFB Encryption offered is compliant with Project 25 standards and does not support analog encryption operation.
  - REQUIRES the ASTRO Digital CAI (G806) to operate the DES-OFB or AES-OFB Encryption
- If ordering a non-OFB (XL version) Encryption:
  - The non-OFB encryption (XL versions) can be operated in either analog or CAI digital mode but will not be Project 25 compliant.
- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.
  - Encryption UCM Hardware (G159) module may be ordered without an Encryption Algorithm for later upgrade in the field.

FIELD INSTALLED PROJECT 25 ENCRYPTION

The DES-OFB and AES-OFB Encryption offered is compliant with Project 25 atandards. Operation of DES-OFB and/or AES-OFB encryption requires the ASTRO Digital CAI (G806). Radios can be upgraded via FLASHport to CAI operation.

- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

FIPS 140-2 COMPLIANCE

Encryption Modules equipped with AES are FIPS 140-2 compliant. ADP Privacy is not FIPS compliant. Further information regarding FIPS 140-2 certification may be found using the following links:

FIPS 140-2 Crypto Module Validation Program (CMVP)

NIST Cryptographic Module Validation Lists

Self-Quieting Spurs Frequency (MHz)

UHF R2 486.4 MHz

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-and solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extanding that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on APX 7000 Dual Display Portable radios. Advanced Messaging is NOT supported on APX 7000 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for APX Mobiles Require: (Note: some control heads are not available on all main models)

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- P25 Conventional (G48)
- Packet Data Interface (W947)

OR

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking Software (G361)
- Packet Data Interface (W947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

FCC Information

Band/Model	Power Output	Transmitter Certification (Type Acceptance)	Emissions	Applicable Rules
450-520 MHz	10 - 45 Watts	AZ492FT4867	8K10F1D, 8K10F1E, 11K0F3E, 16K0F3E, 20K0F1E, 20K0F1D	22, 74, 90

o **Except for itinerant and low-power incident channels.**

** Itinerant & Low-Power Incident Channels	
Channel Number	Frequency Range (MHz)

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

Ç Canada personnel refer to Section A under CANADA ONLY information.

Guideline

This price page consists of the following sections:

A. Required Main Models and Options for standard operation (Steps 1-9)

B. Control Station

C. Optional Features

D. Aftermarket Accessories

Section A: Required Main Model and Options

For standard Radio Operation **Steps 1 - 9** **must be** selected.

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

1: Main Model ***(Must Select)***

Description	Nomenclature	APC	Price
XTL2500 UHF R2 450-520 MHZ, 10-40 WATT	M21SSM9PW1 N	518	$1,497.00

2: Operation Mode ***(Must Select One)***

Description	Nomenclature	APC	Price
ENH: SOFTWARE ASTRO READY ANALOG	G241	500	$0.00
NOT COMPATIBLE with Encryption Algorithm W969, W793, W797, G298, G851, or G843 when combined with a Trunking Software Option. DES-OFB is not operational in Analog Operation.			
ENH: XTL SOFTWARE ASTRO DIGITAL CAI OPERATION	G808	514	$515.00

3: System Enhancement Software ***(Must Select One)***

Description	Nomenclature	APC	Price
ENH: CONVENTIONAL OPERATION	G48	514	$275.00

ENH: SOFTWARE SMARTZONE/SINGLETONE	G51	514	$975.00

3b: Optional System Enhancement Software *(Not Required)*

Description	Nomenclature	APC	Price
ENH: SMARTZONE OMNILNK MULTZONE SYSTEM SW	G173	656	$200.00
Automatic Zoning Across Zones, Zone Registration, Trespass Protection, Over the Air Site Alias, 32 Preferred Sites, FastStart and AllStart Call Setup.			
ADD: P25 TRUNKING SOFTWARE	G361	656	$300.00
When ordering this option G51 & G806 MUST be ordered. G173 is included at "NO CHARGE".			

4: Control Head Hardware *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: XTL2500 CONTROL HEAD	G442	514	$292.00
ADD: NO CONTROL HEAD NEEDED	G88	500	$0.00
Requires remote mounting option (G67 or G655)			

5: Control Head Software *(Must Always Select G444)*

Description	Nomenclature	APC	Price
ADD: ADD: CONTROL HEAD SOFTWARE	G444	514	$0.00
MUST ALWAYS SELECT THIS OPTION			

6: Mounting *(Must Select One)*

****If a remote mount cable other than 5 meters (17ft) is desired for the G67, please reference the "Remote Mount Cables" section below in Section C: Optional Features****

Description	Nomenclature	APC	Price
ADD: DASH MOUNT	G66	500	$125.00
Required for Control Station Operation			
ADD: REMOTE MOUNT	G67	500	$297.00
Required for Dual Control and High Power Radios			

7: Antenna *(Must Select One)*

Description	Nomenclature	APC	Price
ANTENNA 1/4 WAVE WHIP 450-470 MHZ	G426	585	$25.00
Not Compatible with Motorcycle Corresponding kit: HAE4003.			
ANTENNA 3.5DB 450-470MHZ	G428	585	$50.00
Not Compatible with Motorcycle Corresponding kit: HAE4011.			
ANTENNA 5.0 DB 450-470 MHZ	G430	585	$58.00
Not Compatible with Motorcycle Corresponding kit: RAE4014ARB.			
ADD: ANTENNA 5DB GAIN 494-512 MHZ	G486	585	$58.00
Not Compatible with Motorcycle Corresponding kit: RAE4016ARB.			
ADD: ADD: ANT 1/4 WAVE 470-512 MHZ	G490	585	$14.00
Not Compatible with Motorcycle Corresponding kit: HAE4004.			
ADD: ANTENNA 3 DB ROOF TOP 470-495	G493	585	$33.00
Not Compatible with Motorcycle Corresponding kit: HAE4012.			
ADD: ANTENNA 3 DB ROOF TOP 494-512 MHZ	G494	585	$33.00
Not Compatible with Motorcycle Corresponding kit: HAE4013.			
ADD: NO ANTENNA NEEDED	G89	500	$0.00

8: Microphones *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED	G90	500	$0.00
Select this option when ordering W3 Handheld Control Head (G82/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G767. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			

ADD: PALM MICROPHONE Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090	W22	500	$72.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079	W20	514	$180.00
ADD: HANDSET/HANGUP GCAI Coiled Cable with Toggle Switch Accessory Kit: HLN1457A	G874	514	$285.00
ADD: CONTROL STATION DESK MICROPHONE Dash Mount Required Corresponding Kit: RMN5070	W382	500	$169.00
ADD: MODEL III KEYPAD TELEPHONE HANDSET Corresponding kit: HMN4097A	GA00221	514	$295.00

9: Speakers ***(Must Select One)***

******G142 NO SPEAKER Required for Control Station******

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$60.00
ADD: INCREASED AUDIO POWER 13W Corresponding kit: HSN4032. NOT COMPATIBLE with W665 Control Station and Motorcycle Configuration.	W432	500	$71.50

Section B: Control Station

CONTROL STATION OPERATION

I. First, you must review your selection of the following options from "Section 1: Required Options".

- Step 1 *(Note: Main Model)*
- Step 2 *(Note: All listed options are compliant)*
- Step 3 *(Note: All listed options are compliant)*
- Step 4 *(Note: Must select G442. XTL 2500 Control Head is competible with Control Station Applicetion).*
- Step.5 *(Note: Must Select G444. The XTL 2500 Control Head Software is compatible with Control Station Application).*
- Step 6 *(Note: Must Select G66. Control Station operation is only offered in Dash mount configuration).*
- Step 7 *(Note: All listed options are compliant).*
- Step 8 *(Note: Select desired microphone option and if no microphone is needed, G90 must be selected).*
- Step 9 *(Note: Must Select G142 - No Speaker Needed).*

II. You Must Select ONE of the Following "Specific Control Station Options":

SPECIFIC CONTROL STATION OPTIONS

Control Station Operation and Power Supply ***(Must Select BOTH)***

Description	Nomenclature	APC	Price
ADD: CONTROL STATION POWER SUPPLY Corresponding kit: HPN4007	G91	500	$269.00
ADD: CONTROL STATION OPERATION For DASH MOUNT radios ONLY (G66)!! Not compatible with W3, or W9 control head options. G665 includes a base tray and a speaker; therefore G142	W665	500	$70.00

has to be ordered to eliminate extra Speaker. Requires a Power Supply (G91 can be ordered as a Power Supply).
Requires one of the Microphone Options: G90, W22 or W382.
Corresponding kit: HLN8042

III. Features listed in "Section C: Optional Features" are optional, if applicable. Please read the option's description to determine compatibility.

Section C: Optional Features

The following features are **optional** and will provide additional capabilities, if required.

System Enhancement Optiona

Description	Nomenclature	APC	Price
ENH: ENHANCED DIGITAL ID DISPLAY	G114	500	$75.00
8 numeric character unit to unit display. NOTE: This option is required to display Radio ID or Radio Alias on the display for analog and digital conventional and trunking configurations.			
ENH: RADIO TRACE AND REMOTE MONITOR	G170	500	$75.00
Note: G170 option for Radio Trece/Remote Monitor is not compatible with W3 Control Head and G474 (Multi-Radio). For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ADD: CONVENTIONAL VOTING SCAN ASTRO	G387	500	$200.00
This feature allows for voting of the Conventional Channels ONLY.			
ADD: TRUNKED ONE TOUCH BUTTON	G683	500	$150.00
ENH: OVER THE AIR PROGRAMMING	G996	518	$100.00
Compatible with P25 Trunking only. Requires W947 Date option. To do in field POP25 programming must use Advanced System Key (DVN4048A)			
ADD: XTL2500 RADIO AUTHENTICATION	W391	514	$100.00

Encryption Hardware and Software

Description	Nomenclature	APC	Price
ADD: ENCRYPTION UCM	G159	500	$150.00
REQUIRED for ANY encryption combination of Hardware Based Algorithms. Not Compatible with G193. CUSTOMERS USING THE FOLLOWING FREQUENCIES MUST ADD FREE OPTION "QA00351AA" (ENH: UCM SP TRIGGER) due to a known Self Quiting issue for radios with the standard UCM. UHF SELF-QUIETING SPURS: UHF RANGE 1 FREQUENCIES: 383.975 MHz 393.2125 MHz 395.975 MHz 432 MHz 456 MHz UHF RANGE 2 FREQUENCIES: 456 MHz 479.975 MHz 480 MHz			
ADD: KEY RETENTION 30 SECONDS	G336	500	$50.00
G159 REQUIRED			
ADD: MULTIPLE KEY ENCRYPTION OPERATION	W969	500	$330.00
REQUIRED when using more than one encryption algorithm or encryption key.			
ENH: CONVENTIONAL TACTICAL REKEY WITH MULTIKEY	H04	514	$350.00
Must Order IV&D(Q947)			

Encryption Algorithms

Description	Nomenclature	APC	Price
ADD: ADP ENCRYPTION	G113	526	$349.00
REQUIRES G159. INCLUDES W969 Multikey. ORDER G194 if need ADP with DES/DES-XL-DES-OFB. NOT AVAILABLE with 3600 Trunking and Analog Conventional software Packages. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G806 in the Digital Conventional mode ONLY.			
Description	**Nomenclature**	**APC**	**Price**
ADD: ADP SOFTWARE DSP BASED CRYPTO	G193	500	$10.00
REQUIRES: G606 Digital Operation			

DOES NOT REQUIRE: G159 UCM or G77/G78 Encryption Warranty. Use standard warranty options if needed.
COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G806 in the Digital Conventional mode ONLY. .Includes 8 non-indexing encryption keys..

Description	Nomenclature	APC	Price
AES ENCRYPTION-UCM	G843	412	$625.00

AES operates in digital mode only.
NOT compatible with G241 ENH: SOFTWARE ASTRO READY ANALOG

Description	Nomenclature	APC	Price
ADD: DES, DES-XL, DES-OFB ENCRYPTION - UCM	G625	412	$749.00

The Multikey (W969) or OTAR (G298) are only required when more than 1 key or 1 algorithm is programmed.

Description	Nomenclature	APC	Price
ADD: DVI-XL ENCRYPTION	W793	500	$520.00

G159 is REQUIRED when ORDERING

Description	Nomenclature	APC	Price
ADD: DVP-XL ENCRYPTION	W797	500	$487.00

G159 is REQUIRED when ORDERING

Remote Mount Cables

(The 5 meter (17 FT) Cable Ships Standard)

Description	Nomenclature	APC	Price
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT)	G582	514	$65.00

For Duel/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a duel, tri, or quad control radio
Corresponding kit: HKN6164

ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT)	G607	514	$45.00

Corresponding kit: HKN6168A

ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT)	G609	514	$35.00

Corresponding kit: HKN6167

ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT)	G610	514	$25.00

Corresponding kit: HKN6168

ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT)	G879	514	$55.00

Corresponding kit: HKN6165

ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT)	G818	514	$10.00

Corresponding kit: HKN6170

DEK

Description	Nomenclature	APC	Price
ADD: STATUS MESSAGE 8 MESSAGES	W355	500	$475.00

NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration.
CORRESPONDING KIT: H1838A

ADD: DDE STATUS MESSAGES 16	W374	500	$650.00

NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration.
CORRESPONDING KIT: H1839A

Direct Mode Entry

Description	Nomenclature	APC	Price
ADD: 8 MODE DIRECT ENTRY	W599	500	$180.00

ONLY compatible with Remote Mount configuration.
CORRESPONDING KIT: H1835A

ADD: 16 MODE DIRECT ENTRY	W614	500	$360.00

ONLY compatible with Remote Mount configuration.
CORRESPONDING KIT: H1836A

ADD: 24 MODE DIRECT ENTRY	W615	500	$540.00

NOT COMPATIBLE with W269 Siren/PA. 9600 Systems offer ONLY "Status" and not "Message". ONLY compatible with Remote Mount configuration.
CORRESPONDING KIT: H1837A

WHELEN SIREN (MOTOROLA COMPATIBLE)

NOTE: THE NEW SIREN IS COMPATIBLE WITH APX AND XTL MOBILES WITH "O" SERIES OR M5 CONTROL HEADS ONLY. THIS SIREN IS NOT COMPATIBLE WITH ANY "W" SERIES CONTROL HEADS

THE SIREN BASE MODEL TT2592, CABLE TT05707 AND THE SIREN MOUNTING HARDWARE TT0507 MUST ALWAYS BE ORDERED (THIS SIREN IS ORDERED AS A SEPARATE LINE ITEM, TT2592 IS THE MODEL)

DEK OPTIONS ARE AVAILABLE AS OPTIONS TO THE SUBSCRIBER AS SHOWN BELOW

Description	Nomenclature	APC	Price
WHELEN/MOTOROLA SIREN	TT2592	656	$395.00
SIREN HARDWARE INSTALL KIT	TT05707AA	656	$20.00
SIREN TO RADIO CABLE	TT05708AA	656	$65.00
SIREN TO DEK CABLE - O3 CONTROL HEAD ONLY	TT05709AA	656	$78.00

SIREN DEK OPTIONS

ADD: DEK FOR WHELEN SIREN W/ O3 CH ONLY	GA00812	656	$105.00
ADD: DEK FOR WHELEN SIREN	GA00814	656	$105.00

Auxiliary Switches

Description	Nomenclature	APC	Price
ADD: AUXILIARY SWITCH PANEL	W591	500	$165.00
Corresponding kit: HLN1196. G67 REQUIRED. NOT compatible with W3 control head or motorcycle.			

Alarm

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAYS AND CABLE	W116	500	$75.00
For either HORN or LIGHTS. NOT both			

Emergency

Description	Nomenclature	APC	Price
ADD: PTT FOOTSWITCH	G235	514	$51.00
Requires W872 Visor Mic. Kit Number: GLN7278B			
ADD: EXT EMERGENCY PUSHBUTTON	W888	500	$56.00
Corresponding kit: HLN5131			

Frequency and Squelch Codes

Description	Nomenclature	APC	Price
ENH: FACTORY PROGRAMMING	W844	500	$0.00

Packet Data Interface / Data Cables

Description	Nomenclature	APC	Price
ADD: RS232 DATA INTFC CABLE-DASH	G303	500	$50.00
6 FT RS232 DATA CABLE Corresponding kit: HKN6160A.			
RS232 DATA INTFC CABLE-TRUNK	G304	500	$50.00
20 FT RS232 DATA CABLE Corresponding kit: HKN6161A.			
ADD: RS232 & IV&D PACKET DATA INTERFACE	W947	500	$200.00
This option is ONLY Operational on Digital Trunking and Digital Conventional systems!! INCLUDES the DLM Application. This option does not include Cables. G303 or G304 should be ordered seperately.			
USB DATA INTFC CABLE-DASH	G308	500	$50.00
6 FT USB W/IGNITION SENSE Corresponding kit: HKN6163B.			

RF Modem

(Supported for 9600 Trunking only)

Description	Nomenclature	APC	Price
ENH: ENABLE RF MODEM	G319	500	$0.00
The XTL mobiles do not support Site Lens or System Watch. Therefore, the APX RF Modem function does not support the legacy System Watch or Site Lens applications. The APX RF Modem supports Conventional or 9600 Trunking only. Enabling the RF Modem in conventional mode allows provisioned APX portables to pass accountability data through the portable option Q445.			

Service (These Service options are NOT applicable for Asia Pac)

REPAIR SERVICE ADVANTAGE

Provides for extended hardware repair coverage beginning after the standard warrenty period. Repairs will be made only at the designated Motorola repsir depot. Locsl services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$64.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$246.00
ENH: 3 YR CANADA EXTND WRNTY XTL	GA00313	386	$177.00
ENH: 5 YR CANADA EXTND WRNTY XTL	GA00316	386	$240.00

REPAIR SERVICE ADVANTAGE (ENCRYPTED)

Provides for extended hardware repair coverage, including encryption, beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola dealgnated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G77	185	$72.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G78	185	$137.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	GA00232	185	$205.00
ENH: 3 YR CANADA ENCR EXT WRNTY XTL	GA00314	386	$181.00
ENH: 5 YR CANADA ENCR EXT WRNTY XTL	GA00317	386	$244.00

REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)

Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Deecription	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00
ENH: 3 YEAR ENCRYPTED RSA (COMPREHENSIVE)	GA00255AA	185	$302.00

Test Results

Description	Nomenclature	APC	Price
ADD: PRINTED TEST RESULTS	G799	500	$0.00

Amplifier

*****UHF and VHF Mid and High Power Radios Only******

Description	Nomenclature	APC	Price
ADD: RF PRE-AMPLIFIER	W12	585	$66.00

Miecellaneoue

Description	Nomenclature	APC	Price
ADD: KEY LOCK MOUNT	W81	500	$33.00

Section D: Aftermarket Accessories

Algorithm Kits

XTL5000 AES256, ADP	NNTN8328A	585	$997.00
XTL5000 DES-XL, DES-OFB, ADP	NNTN8327A	585	$998.00

XTL5000 DES-XL, DES-OFB, AES256, AD	NNTN8326A	585	$1,499.00
XTL5000 AES256	NNTN8331A	456	$795.00

Antennas

Description	Nomenclature	APC	Price
ANTENNA, UHF (450-470 MHZ) 1/4 WAVE ROOF MOUNT Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: Unity, VSWR: Less than 2:1, Impedance: 50 Ohms, nominal	HAE4003	554	$21.50
ANTENNA UHF (445-470 MHZ) 3.5DB GAIN ROOF MOUNT Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedance: 50 Ohms, nominal.	HAE4011	554	$77.50
ANTENNA, UHF (470-512 MHZ) 1/4 WAVE ROOF MOUNT Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: Unity, VSWR: Less than 2:1, Impedance: 50 Ohms, nominal	HAE4004	554	$20.00
ANTENNA, UHF (470-494 MHZ) 3.5DB GAIN ROOF TOP Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedance: 50 Ohms, nominal.	HAE4012	554	$68.00
ANTENNA, UHF (494-512 MHZ) 3.5DB GAIN ROOF TOP Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedance: 50 Ohms, nominal.	HAE4013	554	$72.00
ANTENNA UHF (445-470 MHZ) 5DB GAIN Roof Mount, SPECTRUM Base Loadad 5 dB Gain Antenna, Cable: RG58 A/U, Rugged Duty, Mini UHF connector.	RAE4014ARB	554	$110.00
ANTENNA UHF (494-512 MHZ) 5DB GAIN Roof Mount, SPECTRUM Base Loaded 5 dB Gain Antenna, RG58 A/U Cable, Rugged Duty, Mini UHF connector	RAE4016ARB	554	$144.00

Cable (s)

AUDIO CABLE ADAPTER	HKN6158	500	$49.00
ADAPTER CABLE DATA	HKN6159	500	$49.00

Cables (Remote Mount)

CABLE, REMOTE MOUNT, 75 FT	HKN6166	514	$80.00
CABLE, REMOTE MOUNT, 115 FT	HKN6165	514	$105.00
CABLE,REMOTE MOUNT,131 FT	HKN6164	514	$122.00

Control Station

Description	Nomenclature	APC	Price
MOBILE DESK TRAY	HLN6042	617	$77.00
PS 14V 10A 117/240 VAC.	HPN4007C	500	$296.00

Customer Programming Software

Data

CABLE KIT 20' DATA RS232 Data Interface Cable - REMOTE	HKN8161	476	$50.00

Menuals

Description	Nomenclature	APC	Price
XTL 2500 M5 MANUAL	HLN1460D	514	$12.00

Microphones

HANDSET/HANGUP (HANGUP CUP)	HLN1457	706	$285.00
MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	706	$295.00
XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00
AS. SPECTRA & XTL5000 DESKTOP MIC	RMN5070A	706	$172.00

Speakers

Description	Nomenclature	APC	Price
EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	HSN4038	476	$60.50
MCS EXT SPKR 13W	HSN4032B	500	$71.50

Bull Horns for Sirens and Public Address

Description	Nomenclature	APC	Price
SPEAKER SIREN, ROUND W/CHROME & BLACK	TDN6251	706	$329.00
SPEAKER RECTANGULAR WITH CHROME FINISH	TDN6252	706	$265.00
SPEAKER UNDERHOOD WITH GRAY FINISH	TDN8253	706	$220.00
SPEAKER ROUND WITH GRAY FINISH	TDN6254	706	$248.00

Miscellaneous

Description	Nomenclature	APC	Price
WILDCARD	HLN1196	412	$165.00
AUXILIARY SWITCH PANEL (W591-W9)	HLN1342	617	$165.00

Section E: Vehicle Location Solution

Vehicle Location Solution

Vehicle location or GPS is now available on the ASTRO 25 XTL 2500 mobile radio.

The TrimFleet ™ GPS mobile units provide e versatile and economical platform for mobile positioning applications. Using state-of-the-art GPS receiver technology, the TrimFleet GPS receiver unit hes been optimized for vehicle installation and operation, providing reliable vehicle position, direction, speed, time and status in any weather, anywhere in the world.

The TrimFleet receiver contains a 12-channel GPS module and an (optionel) angular rate sensor module. The TrimFleet receiver connects directly to in-vehicle leptops/workstations es well es VRM and XTL redios. The TrimFleet GPS receiver outputs positions when in GPS coverage via either of its RS-232C serial ports in National Marine Electronics Association Protocol (NMEA), Trimble ASCII Interface Protocol (TAIP) and Point to Point Protocol (PPP) formats. The TrimFleet receiver may be configured to send the position data in either protocol via the two RS-232C data ports. Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

The TrimFleet DRU Plus may be equipped with an optional internal module to provide dead reckoned position data while outside of GPS coverage. This is accomplished through the use of advanced gyroscopic technology in combinetion with connections to the vehicle speed sensor and vehicle diraction signal (forward or reverse.) Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automaticelly self-calibrate.

I/O PORTS

The TrimFleet DRU Plus provides two RS232C compatible communication ports thet may be connected to external devices. One port provides a DE-9 female DCE connection, and the other port provides a DE-9 female DTE connection. The ports may be configured individually for baud rates between 110 and 115.2K baud. Both ports support NMEA and TAIP protocols. The default configuration for both ports is 9600 baud TAIP.

Also provided is support for PPP over RS232C on Port 1. An IP capable XTL 2500 radio may be interfaced to the port to allow wireless transmission of TAIP messages to an AVL server. The TAIP messages will be encapsulated in UDP packets and sent to a configurable destination IP address and port. TAIP messages may also be sent back to the TrimFleet DRU Plus by the AVL application to modify raporting rates and query current location or status.

Vehicle location is available only on ASTRO Conventional and Trunked IV&D Systems. Subscribers must have version R08.00.00 or later of both Customer Programming Software (CPS) and Radio software.

Digital Conventional Ordering requirements for XTL 2500 Mobile:

- Requires Control Head (G442)
- ASTRO Digital CAI Operation (G806)
- Conventional Operation (G48)
- Packet Data Interface (W947)
- Mid Power RS232 Cable (G303 Dash / G304 Remote) *(Hooks to the J2 rectangular and DB9 connector)*
- High Power RS232 Cable (HKN6122) *(Hooks to the DB25 connector and the DB9 connector)*

P25 Trunking Ordering requirements for XTL 2500 Mobile:

- Requires Control Head (G442)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking 9800 Software (G361)
- Packet Data Interface (W947)
- Mid Power RS232 Cable (G303 Dash / G304 Remote) *(Hooks to the J2 rectangular end DB9 connector)*
- High Power RS232 Cable (HKN6122) *(Hooks to the DB25 connector and the DB9 connector)*

Description	Nomenclature	APC	Price
TRIMFLEET DRU PLUS (W/DR & POWER CABLE)	DDN9439	222	$745.00

Description	Nomenclature	APC	Price
TRIMFLEET APU (W/POWER CABLE)	DDN9440	222	$620.00

Description	Nomenclature	APC	Price
TRIMFLEET GPS ANTENNA WITH CABLE	DDN9474	222	$99.00

Section F: Retrofit Mounting Kits

PLEASE READ ALL ALLIED MODEL AND OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION.

Retrofit Mounting Kits

Remote to Dash

Converts an existing remote mounted XTL 2500 mobile radio to a dash mounted radio. Applicable to Low/Mid power models.

Description	Nomenclature	APC	Price
REMOTE TO DASH RETROFIT KIT FOR O5 OR XTL2500	H1817	514	$75.00

Contains dash mount headbridge hardware. Does not include transciever trunion. Does not include a control head.

Dash to Remote

Converts an existing dash mounted XTL 2500 mobile radio to a remote mounted radio. Applicable to Low/Mid power models.

If you are retrofitting XTL 2500 radios that shipped AFTER 7/1/06, order H1818.

If you are retrofitting XTL 2500 radios that shipped BEFORE 7/1/06, order H1825.

Description	Nomenclature	APC	Price
O5/M5 DASH TO O5/M5 REMOTE RETROFIT KIT Contains rear housing for remote O5, O5 control head remote mounting hardware, remote O5 power cable, remote transclever faceplate. Remote cable available as option. Does not include transciever trunion. Does note include O5 control head.	H1818	514	$325.00

Remote Mount Cables

(Cable option is NOT required. If cable option is ordered, select ONLY one option.)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT) ***For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio*** Corresponding kit: HKN6164	G582	514	$65.00

Section G: Remote Control Head Replacement / Dual Control Head Retrofit Kit

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION.

Remote Control Head Replacement AND Dual Control Head Retrofit Kit

The XTL 2500 M5 Remote Control Head Replacement AND Dual Control Head Retrofit provides / requires the following:

- QTY 1: **REMOTE** mount control head assembly that includes a control head + flex cable + control head interface board rear housing (CHIB)
- Qty 1: Remote Control Head Power cable (HKN6188)
- Qty 1: Remote Control Head Mounting trunion and hardware
- Qty 1: Manual CD and dust cover kit
- OPTION: Must select a microphone option

- OPTION: Must select a speaker option

- OPTION: Must select e remote cable option

*** IF YOU ARE ADDING A CONTROL HEAD TO CONVERT A SINGLE CONTROL REMOTE MOUNT RADIO TO A DUAL CONTROL, THEN YOU MUST MAKE SURE THE RADIO HAD VERSION 6.9 SOFTWARE OR GREATER.

THE ALLIED SALES MODEL BELOW DOES NOT INCLUDE A FLASH FIRMWARE REFRESH. PLEASE SEE THE SUBSCRIBER FLASHPORT SOFTWARE UPGRADE PRICE PAGE ***

Description	Nomenclature	APC	Price
M5 REMOTE CTRL HD/CHIB REPLACEMENT / ADDITION	H1827	514	$570.00

Microphones

(Must Select One and Only One)

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.	G90	500	$0.00
ADD: PALM MICROPHONE Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090	W22	500	$72.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079	W20	514	$180.00

Speakers ***(Must Select One)***

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$60.00
ADD: INCREASED AUDIO POWER 13W Corresponding kit: HSN4032. NOT COMPATIBLE with W665 Control Station and Motorcycle Configuration.	W432	500	$71.50

Remote Mount Cables

***** For Dual configurations, the total cable length may NOT be greater that 131 ft (40 metere) *****

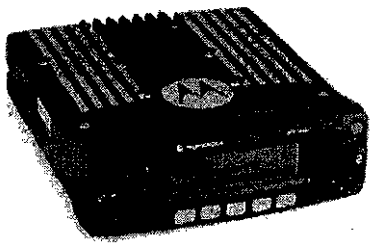
(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00

ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT)	G582	514	$65.00

For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, thie cable should not be used with a dual, tri, or qued control radio
Corresponding kit: HKN6164

Data Compiled 16-May-2013 using DUP and all prices in USD



ASTRO® Digital XTL 2500 Mobile
UHF 380-470 MHz Band

Secure and Trunked Radio Systems

Ship Card

General Information

The XTL 2500 Mobile Line offers 1 radio hardware model:

Hardware Mode	Modes	Alphanumeric Display
		Lines/Characters
		per Line
CH	1000	4/14

OPERATING MODES

XTL 2500 Radio Models are capable of operating in three different voice communication modes:

- normal analog (clear voice)
- 3.6kb ASTRO Digital (both clear and coded voice)
- 9.6KB ASTRO Digital (both clear and coded voice)

The mode of operation is programmed on a channel-by-channel basis. The XTL 2500 is capable of transmitting clear analog voice or clear (unencrypted) ASTRO digital voice, depending on the channel programming. XTL 2500 radio functions include ASTRO Digital signaling and digital coding.

Please note that XTL radios do NOT support FRED.

Each hardware model must be ordered with 1 of the System Enhancement Software Package options.
The matrix below indicates standard Trunking features for SmartZone (G51) System Packages. SmartZone features listed in the lower matrix are available in the (G51) package only. Radio Wide Features and Standard Conventional Features are listed above. System Enhancement Options can be added to the packages shown below. Refer to the System Enhancement Options for compatibility.

COMMON SOFTWARE FEATURES SUPPORTED BY G51 "SmartZone®"			
	"Analog Operation"(G241)	"ASTRO Digital"(G806)	"ASTRO Digital" (G51/G806/G361)
		Non-Project 25	Project 25
		(3600 Baud)	(9600 Baud)
RADIO WIDE FEATURES			
Maximum Modes			
XTL 2500 Control Head	1000	1000	1000
Analog and Digital Operation	-	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes
ADP Encryption	No	Yes	Yes
Encryption Capable	Yes	Yes	Yes
One Touch Operation	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes

FLASHport	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES			
Conventional Features are additional radio wide features beyond those specified in the APCO Project 25 documents.			
CSQ/PL/DPL	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes
Monitor	Yes	Yes	Yes
DTMF Tone Generation	Future	Future	Future
MPL	Future	N/A	N/A
MDC PTT ID	Yes	Yes	Yes
MDC Selective Radio Inhibit (Decode Only)	Yes	Yes	Yes
MDC Call Alert (Encode/Decode)	Yes	Yes	Yes
MDC Radio Check (Decode Only)	Yes	Yes	Yes
MDC Voice Selective Call (Encode/Decode)	Yes	Yes	Yes
MDC Remote Monitor (Decode Only)	Yes	Yes	Yes
MDC Call Lists (Call Alert/Select Call)	Yes	Yes	Yes
MDC Emergency	Yes	Yes	Yes
MDC Silent Emergency (Encode)	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES			
These features are APCO Project 25 Interoperable Features when used in the ASTRO Digital CAI Mode (G806)			
Unaddressed Voice Call	-	Yes	Yes
Talk Group Call	-	Yes	Yes
Group Call Alert™	-	Yes	Yes
Talk Group Identification (TGID)	-	Yes	Yes
Selective Call (Individual Voice Call)	-	Yes	Yes
Selective Call Decode (Individual Voice Call)	-	Yes	Yes
PTT ID (Individual Identification)	-	Yes	Yes
Call Alert Encode/Decode	-	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	-	Yes	Yes
Telephone Interconnect	-	Yes	Yes
Unlimited	-	Yes	Yes
Selective Radio Inhibit	-	Yes	Yes
Radio Check	-	Yes	Yes
Status/Message	-	Yes	Yes
Trunking Type II Only Features			
Maximum Number of Trunked Systems-20			
Talkgroup Calls	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes
Dual Mode Scan	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only
Dispatcher Interrupt	No	No	No
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes

Radio Trace	Yes	Yes	No
Reprogram Request	Yes	Yes	Yes

Each hardware model must be ordered with 1 of the System Enhancement Software Package options, Conventional or SmartZone.

SOFTWARE FEATURES SUPPORTED BY G51 "SmartZone®"			
	"Analog Operation" (G241)	"ASTRO Digital" (G806)	"ASTRO Digital" (G51/G806/G361)
		Non-Project 25	Project 25
		(3600 Baud)	(9600 Baud)
Trunking Type II Only Features			
Voice on Control	Future	Future	Yes
SmartZone Automatic Site Registration	Yes	Yes	Yes
~~SmartZone RSSI Operation~~	~~Yes~~	~~Yes~~	~~Yes~~
SmartZone Busy Override	No	No	No
SmartZone Preferred Site	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the XTL 2500 Mobile Radio Series. Separation of frequencies can be as wide as the allowable sub-band

par radio model with no degradation of any performance specifications. **If an incorrect antenna is used, degraded performance may be experienced.**

COMMON AIR INTERFACE

Conventional channels are P25 compliant with the ASTRO Digital CAI Operation Software (G806). ASTRO P25 Trunking Software (G361) **must** be added for P25 compliance in trunked systems.

PROJECT 25 ENCRYPTION

When ordering any of the Encryption Algorithm:

- **MUST** order the Encryption UCM Hardware (G159)
- ADP Privacy not supported by OTAR. ADP is digital P25 conventional / P25 trunking only.
- The DES-OFB and AES-OFB Encryption offered is compliant with Project 25 standards and does not support analog encryption operation.
    - REQUIRES the ASTRO Digital CAI (G806) to operate the DES-OFB or AES-OFB Encryption
- If ordering a non-OFB (XL version) Encryption:
    - The non-OFB encryption (XL versions) can be operated in either analog or CAI digital mode but will not be Project 25 compliant.
- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.
    - Encryption UCM Hardware (G159) module may be ordered without an Encryption Algorithm for later upgrade in the field.

FIELD INSTALLED PROJECT 25 ENCRYPTION

The DES-OFB and AES-OFB Encryption offered is compliant with Project 25 standards. Operation of DES-OFB and/or AES-OFB encryption requires the ASTRO Digital CAI (G806). Radios can be upgraded via FLASHport to CAI operation.

- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

FIPS 140-2 COMPLIANCE

Encryption Modules equipped with AES are FIPS 140-2 compliant. ADP Privacy is not FIPS compliant. Further information regarding FIPS 140-2 certification may be found using the following links:

FIPS 140-2 Crypto Module Validation Program (CMVP)

NIST Cryptographic Module Validation Lists

Self-Quieting Spurs Frequency (MHz)

UHF R1 384 MHz and 435.2 MHz

ASTRO Text Messaging Service

ASTRO Text Messaging Service is now available on ASTRO 25 XTS 5000, XTS 2500 Portable radios and ASTRO 25 XTL 5000, XTL 2500 Mobile radios. Text Messaging Service (TMS) allows subscriber users to send and receive text messages to other subscribers or dispatch operators. Users can select messages and addresses from a predefined list or enter freeform text messages and addresses via the keypad. Text Messaging Service is available on ASTRO Trunked IV&D Systems and Subscribers. Subscribers must have version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software.

For full Text Messaging functionality, including freeform text messaging and addressing, must Control Head with Keypad Microphone. Control Head without the Keypad Microphone supports Limited Text Messaging functionality such as selecting predefined messages or addresses from a list programmed in the radio.

Ordering requirements for XTL 2500 Mobile:

- Full functionality including free form messaging requires the Keypad Microphone (W20)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking 9600 Software (G361)
- Packet Data Interface (W947)

NOTE: There is no specific option to order for the Text Messaging Service on the subscribers as the functionality is included in the Packet Data option.

FCC Information

Band/Model	Power Output	Transmitter Certification (Type Acceptance)	Emissions	Applicable Rules
380-470 MHz	25 - 110 Watts	AZ492FT4870	8K10F1D, 8K10F1E, 11K0F3E, 16K0F3E, 20K0F1E, 20K0F1D	22, 74, 90

- Except for Itinerant and low-power incident channels.

** Itinerant & Low-Power Incident Channels	
Channel Number	Frequency Range (MHz)

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

Ç Canada personnel refer to Section A under CANADA ONLY Information.

Guideline

This price page consists of the following sections:

A. Required Main Models and Options for standard operation (Steps 1-9)

B. Optional Features

C. Aftermarket Accessories

Section A: Required Main Model and Options

For standard Radio Operation **Steps 1 - 9 must be** selected.

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

1: Main Model *(Must Select)*

Description	Nomenclature	APC	Price
UHF R1 380-470 MHZ 100 WATT	M21QTM9PW1 N	518	$1,997.00

2: Operation Mode *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: SOFTWARE ASTRO READY ANALOG NOT COMPATIBLE with Encryption Algorithm W669, W793, W797, G296, G851, or G843 when combined with a Trunking Software Option. DES-OFB is not operational in Analog Operation.	G241	500	$0.00
ENH: XTL SOFTWARE ASTRO DIGITAL CAI OPERATION	G806	514	$515.00

3: System Enhancement Software *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: CONVENTIONAL OPERATION	G48	514	$275.00
ENH: SOFTWARE SMARTZONE/SINGLETONE	G51	514	$975.00

3b: Optional System Enhancement Software *(Not Required)*

Description	Nomenclature	APC	Price
ENH: SMARTZONE OMNILNK MULTZONE SYSTEM SW Automatic Zoning Across Zones, Zone Registration, Trespass Protection, Over the Air Site Alias, 32 Preferred Sites, FastStart and AllStart Call Setup.	G173	656	$200.00
ADD: P25 TRUNKING SOFTWARE When ordering this option G51 & G806 MUST be ordered. G173 is included at "NO CHARGE".	G361	656	$300.00

4: Control Head Hardware *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: XTL2500 CONTROL HEAD	G442	514	$292.00
ADD: NO CONTROL HEAD NEEDED Requires remote mounting option (G67 or G855)	G88	500	$0.00

5: Control Head Software *(Must Always Select G444)*

Description	Nomenclature	APC	Price
ADD: ADD: CONTROL HEAD SOFTWARE MUST ALWAYS SELECT THIS OPTION	G444	514	$0.00

6: Mounting *(Must Select One)*

If a remote mount cable other than 5 meters (17ft) is desired for the G67 or G855, please reference the "Remote Mount Cables" section below in Section C: Optional Features"

Description	Nomenclature	APC	Price
ADD: THUMB SCREW REMOTE MOUNT	G67	514	$297.00
ADD: QUICK HP REMOTE MT	G855	518	$346.00

7: Antenna *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: NO ANTENNA NEEDED	G89	500	$0.00
ANTENNA 1/4 WAVE WHIP 380-433 MHZ Not Compatible with Motorcycle Corresponding kit: HAE6012. **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.**	G425	585	$25.00
ANTENNA 1/4 WAVE WHIP 450-470 MHZ Not Compatible with Motorcycle Corresponding kit: HAE4003.	G428	585	$25.00
ANTENNA 3.5DB 380-433 MHZ Not Compatible with Motorcycle Corresponding kit: HAE6010.	G427	585	$55.00
ANTENNA 3.5DB 450-470MHZ Not Compatible with Motorcycle Corresponding kit: HAE4011.	G428	585	$50.00
ANTENNA 5.0 DB 380-433 MHZ Not Compatible with Motorcycle Corresponding kit: HAE6011.	G429	585	$62.00
ANTENNA 5.0 DB 450-470 MHZ Not Compatible with Motorcycle Corresponding kit: RAE4014ARB.	G430	585	$58.00
ANTENNA WIDEBAND 380-470 MHZ Not Compatible with Motorcycle Corresponding kit: HAE6013.	G431	585	$58.00

8: Microphones *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.	G90	500	$0.00
ADD: PALM MICROPHONE Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090	W22	500	$72.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079 item=w382,4#]	W20	514	$180.00
ADD: HANDSET/HANGUP GCAI Coiled Cable with Toggle Switch Accessory Kit: HLN1457A	G874	514	$285.00
ADD: MODEL III KEYPAD TELEPHONE HANDSET Corresponding kit: HMN4097A	GA00221	514	$295.00

9: Speakers *(Must Select One)*

****G142 NO SPEAKER Required for Control Station****

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$60.00
ADD: INCREASED AUDIO POWER 13W Corresponding kit: HSN4032. NOT COMPATIBLE with W865 Control Station and Motorcycle Configuration.	W432	500	$71.50

Section B: Optional Features

The following features are **optional** and will provide additional capabilities, if required.

System Enhancement Options

Description	Nomenclature	APC	Price
ENH: ENHANCED DIGITAL ID DISPLAY	G114	500	$75.00
8 numeric character unit to unit display. NOTE: This option is required to display Radio ID or Radio Alias on the display for analog and digital conventional and trunking configurations.			
ENH: RADIO TRACE AND REMOTE MONITOR	G170	500	$75.00
Note: G170 option for Radio Trace/Remote Monitor is not compatible with W3 Control Head and G474 (Multi-Radio). For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ADD: CONVENTIONAL VOTING SCAN ASTRO	G387	500	$200.00
This feature allows for voting of the Conventional Channels ONLY.			
ADD: TRUNKED ONE TOUCH BUTTON	G663	500	$150.00
ENH: OVER THE AIR PROGRAMMING	G996	518	$100.00
Compatible with P25 Trunking only. Requires W947 Data option. To do in field P25 programming must use Advanced System Key (DVN4048A)			
ADD: XTL2500 RADIO AUTHENTICATION	W391	514	$100.00

Encryption Hardware and Software

Description	Nomenclature	APC	Price
ADD: ENCRYPTION UCM	G159	500	$150.00
REQUIRED for ANY encryption combination of Hardware Based Algorithms. Not Compatible with G193. CUSTOMERS USING THE FOLLOWING FREQUENCIES MUST ADD FREE OPTION "QA00351AA" (ENH: UCM SP TRIGGER) due to a known Self Quiting Issue for radios with the standard UCM. UHF SELF-QUIETING SPURS: UHF RANGE 1 FREQUENCIES: 383.975 MHz 393.2125 MHz 395.975 MHz 432 MHz 456 MHz UHF RANGE 2 FREQUENCIES: 456 MHz 479.975 MHz 480 MHz			
ADD: KEY RETENTION 30 SECONDS	G336	500	$50.00
G159 REQUIRED			
ADD: MULTIPLE KEY ENCRYPTION OPERATION	W969	500	$330.00
REQUIRED when using more than one encryption algorithm or encryption key.			
ENH: CONVENTIONAL TACTICAL REKEY WITH MULTIKEY	H04	514	$350.00
Must Order IV&D(Q947)			

Encryption Algorithms

Description	Nomenclature	APC	Price
ADD: ADP ENCRYPTION	G113	526	$349.00
REQUIRES G159. INCLUDES W969 Multikey. ORDER G194 if need ADP with DES/DES-XL-DES-OFB. NOT AVAILABLE with 3600 Trunking and Analog Conventional software Packages. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G806 in the Digital Conventional mode ONLY.			
Description	**Nomenclature**	**APC**	**Price**
ADD: ADP SOFTWARE DSP BASED CRYPTO	G193	500	$10.00
REQUIRES: G806 Digital Operation DOES NOT REQUIRE: G159 UCM or G77/G78 Encryption Warranty. Use standard warranty options if needed. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G806 in the Digital Conventional mode ONLY. .Includes 8 non-indexing encryption keys..			
Description	**Nomenclature**	**APC**	**Price**
AES ENCRYPTION-UCM	G843	412	$625.00
AES operates in digital mods only. NOT compatible with G241 ENH: SOFTWARE ASTRO READY ANALOG			
Description	**Nomenclature**	**APC**	**Price**
ADD: DES, DES-XL, DES-OFB ENCRYPTION - UCM	G625	412	$749.00
The Multikey (W969) or QTAR (G298) are only required when more than 1 key or 1 algorithm is programmed.			
Description	**Nomenclature**	**APC**	**Price**
ADD: DVI-XL ENCRYPTION	W793	500	$520.00
G159 is REQUIRED when ORDERING			

Description	Nomenclature	APC	Price
ADD: DVP-XL ENCRYPTION G159 is REQUIRED when ORDERING	W797	500	$487.00

Remote Mount Cables

******The 5 meter (17 FT) Cable Ships Standard******

Description	Nomenclature	APC	Price
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT) ***For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a duel, tri, or quad control radio*** Corresponding kit: HKN8164	G582	514	$65.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN8166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN8167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN8168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN8165	G879	514	$55.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN8170	G618	514	$10.00

DEK

Description	Nomenclature	APC	Price
ADD: STATUS MESSAGE 8 MESSAGES NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration. CORRESPONDING KIT: H1838A	W355	500	$475.00
ADD: DDE STATUS MESSAGES 16 NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration. CORRESPONDING KIT: H1839A	W374	500	$650.00

Direct Mode Entry

Description	Nomenclature	APC	Price
ADD: 8 MODE DIRECT ENTRY ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1835A	W599	500	$180.00
ADD: 16 MODE DIRECT ENTRY ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1836A	W614	500	$360.00
ADD: 24 MODE DIRECT ENTRY NOT COMPATIBLE with W269 Siren/PA. 9600 Systems offer ONLY "Status" and not "Massage". ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1837A	W615	500	$540.00

WHELEN SIREN (MOTOROLA COMPATIBLE)

NOTE: THE NEW SIREN IS COMPATIBLE WITH APX AND XTL MOBILES WITH "O" SERIES OR M5 CONTROL HEADS ONLY. THIS SIREN IS NOT COMPATIBLE WITH ANY "W" SERIES CONTROL HEADS

THE SIREN BASE MODEL TT2592, CABLE TT05707 AND THE SIREN MOUNTING HARDWARE TT0507 MUST ALWAYS BE ORDERED (THIS SIREN IS ORDERED AS A SEPARATE LINE ITEM, TT2592 IS THE MODEL)

DEK OPTIONS ARE AVAILABLE AS OPTIONS TO THE SUBSCRIBER AS SHOWN BELOW

Description	Nomenclature	APC	Price
WHELEN/MOTOROLA SIREN	TT2592	656	$395.00
SIREN HARDWARE INSTALL KIT	TT05707AA	656	$20.00
SIREN TO RADIO CABLE	TT05708AA	656	$65.00
SIREN TO DEK CABLE - O3 CONTROL HEAD ONLY	TT05709AA	658	$78.00

SIREN DEK OPTIONS

ADD: DEK FOR WHELEN SIREN W/ O3 CH ONLY	GA00812	656	$105.00
ADD: DEK FOR WHELEN SIREN	GA00814	656	$105.00

Auxiliary Switches

Description	Nomenclature	APC	Price
ADD: AUXILIARY SWITCH PANEL	W591	500	$165.00
Corresponding kit: HLN1196. G67 REQUIRED. NOT compatible with W3 control head or motorcycle.			

Alarm

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAYS AND CABLE	W116	500	$75.00
For either HORN or LIGHTS. NOT both			

Emergency

Description	Nomenclature	APC	Price
ADD: PTT FOOTSWITCH	G235	514	$51.00
Requires W872 Visor Mic. Kit Number: GLN7278B			
ADD: EXT EMERGENCY PUSHBUTTON	W688	500	$56.00
Corresponding kit: HLN5131			

Frequency and Squelch Codes

Description	Nomenclature	APC	Price
ENH: FACTORY PROGRAMMING	W844	500	$0.00

Packet Data Interface / Data Cables

Description	Nomenclature	APC	Price
ADD: RS232 DATA INTFC CABLE-DASH	G303	500	$50.00
6 FT RS232 DATA CABLE Corresponding kit: HKN6160A.			
RS232 DATA INTFC CABLE-TRUNK	G304	500	$50.00
20 FT RS232 DATA CABLE Corresponding kit: HKN6161A.			
ADD: RS232 & IV&D PACKET DATA INTERFACE	W847	500	$200.00
This option is ONLY Operational on Digital Trunking and Digital Conventional systems!! INCLUDES the DLM Application. This option does not include Cables. G303 or G304 should be ordered separately.			
USB DATA INTFC CABLE-DASH	G308	500	$50.00
6 FT USB W/IGNITION SENSE Corresponding kit: HKN6163B.			

RF Modem

******Supported for 9600 Trunking only******

Description	Nomenclature	APC	Price
ENH: ENABLE RF MODEM	G319	500	$0.00
The XTL mobiles do not support Site Lens or System Watch. Therefore, the APX RF Modem function does not support the legacy System Watch or Site Lens applications. The APX RF Modem supports Conventional or 9600 Trunking only. Enabling the RF Modem in conventional mode allows provisioned APX portables to pass accountability data through the portable option Q445.			

Service (These Service options are NOT applicable for Asia Pac)

REPAIR SERVICE ADVANTAGE

Provides for extended hardware repair covarage beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$64.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00

ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$248.00
ENH: 3 YR CANADA EXTND WRNTY XTL	GA00313	388	$177.00
ENH: 5 YR CANADA EXTND WRNTY XTL	GA00316	386	$240.00

REPAIR SERVICE ADVANTAGE (ENCRYPTED)

Provides for extended hardware repair coverage, including encryption, beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G77	185	$72.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G78	185	$137.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	GA00232	185	$205.00
ENH: 3 YR CANADA ENCR EXT WRNTY XTL	GA00314	386	$181.00
ENH: 5 YR CANADA ENCR EXT WRNTY XTL	GA00317	386	$244.00

REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)

Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00
ENH: 3 YEAR ENCRYPTED RSA (COMPREHENSIVE)	GA00255AA	185	$302.00

Test Results

Description	Nomenclature	APC	Price
ADD: PRINTED TEST RESULTS	G799	500	$0.00

Amplifier

******UHF and VHF Mid and High Power Radios Only******

Description	Nomenclature	APC	Price
ADD: RF PRE-AMPLIFIER	W12	585	$66.00

Section C: Aftermarket Accessories

Algorithm Kits

DES DES-XL DES-OFB ENCRYPTION KIT	NNTN4941	456	$788.00

Antennas

Description	Nomenclature	APC	Price
ANTENNA, UHF (450-470 MHZ) 1/4 WAVE ROOF MOUNT	HAE4003	554	$21.50
Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: Unity, VSWR: Less than 2:1, Impedance: 50 Ohms, nominal			
ANTENNA UHF (445-470 MHZ) 3.5DB GAIN ROOF MOUNT	HAE4011	554	$77.50
Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedance: 50 Ohms, nominal.			
ANTENNA, UHF (470-512 MHZ) 1/4 WAVE ROOF MOUNT	HAE4004	554	$20.00
Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: Unity, VSWR: Less than 2:1, Impedance: 50 Ohms, nominal			
ANTENNA, UHF (470-494 MHZ) 3.5DB GAIN ROOF TOP	HAE4012	554	$88.00
Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedence: 50 Ohms, nominal.			
ANTENNA, UHF (494-512 MHZ) 3.5DB GAIN ROOF TOP	HAE4013	554	$72.00

Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedance: 50 Ohms, nominal.			
ANTENNA UHF (445-470 MHZ) 5DB GAIN	RAE4014ARB	554	$110.00
Roof Mount, SPECTRUM Base Loadad 5 dB Gain Antenna, Cable: RG58 A/U, Rugged Duty, Mini UHF connector.			
ANTENNA UHF 1/4 WAVE	RAE4024ARB	554	$100.00
ANTENNA UHF (494-512 MHZ) 5DB GAIN	RAE4016ARB	554	$144.00
Roof Mount, SPECTRUM Base Loaded 5 dB Gain Antenna, RG58 A/U Cable, Rugged Duty, Mini UHF connector			

Cable (s)

AUDIO CABLE ADAPTER	HKN6158	500	$49.00
ADAPTER CABLE DATA	HKN6159	500	$49.00

Cables (Remote Mount)

CABLE, REMOTE MOUNT, 75 FT	HKN6188	514	$80.00
CABLE, REMOTE MOUNT, 115 FT	HKN6185	514	$105.00
CABLE,REMOTE MOUNT,131 FT	HKN6184	514	$122.00

Customer Programming Software

Data

CABLE KIT 20' DATA	HKN6161	476	$50.00
RS232 Data Interface Cable - REMOTE			

Manuals

Description	Nomenclature	APC	Price
XTL 2500 M5 MANUAL	HLN1460D	514	$12.00

Microphones

HANDSET/HANGUP (HANGUP CUP)	HLN1457	706	$285.00
MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	708	$295.00
XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00
AS. SPECTRA & XTL5000 DESKTOP MIC	RMN5070A	706	$172.00

Speakers

EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	HSN4036	476	$60.50
MCS EXT SPKR 13W	HSN4032B	500	$71.50

Bull Horns for Sirens and Public Address

Description	Nomenclature	APC	Price
SPEAKER SIREN, ROUND W/CHROME & BLACK	TDN6251	706	$329.00
SPEAKER RECTANGULAR WITH CHROME FINISH	TDN6252	706	$285.00
SPEAKER UNDERHOOD WITH GRAY FINISH	TDN6253	708	$220.00
SPEAKER ROUND WITH GRAY FINISH	TDN6254	708	$248.00

Miscellaneous

Description	Nomenclature	APC	Price
WILDCARD	HLN1196	412	$165.00
AUXILIARY SWITCH PANEL (W591-W9)	HLN1342	617	$165.00

Section D: Vehicle Location Solution

Vehicle Location Solution

Vehicle location or GPS is now available on the ASTRO 25 XTL 2500 mobile radio.

The TrimFleet ™ GPS mobile units provide a versatile and economical platform for mobile positioning applications. Using state-of-the-art GPS receiver technology, the TrimFleet GPS receiver unit has been optimized for vehicle installation and operation, providing reliable vehicle position, direction, speed, time and status in any weather, anywhere in the world.

The TrimFleet receiver contains a 12-channel GPS module and an (optional) angular rate sensor module. The TrimFleet receiver connects directly to in-vehicle laptops/workstations as well as VRM and XTL radios. The TrimFleet GPS receiver outputs positions when in GPS coverage via either of its RS-232C serial ports in National Marine Electronics Association Protocol (NMEA), Trimble ASCII Interface Protocol (TAIP) and Point to Point Protocol (PPP) formats. The TrimFleet receiver may be configured to send the position data in either protocol via the two RS-232C data ports. Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

The TrimFleet DRU Plus may be equipped with an optional internal module to provide dead reckoned position data while outside of GPS coverage. This is accomplished through the use of advanced gyroscopic technology in combination with connections to the vehicle speed sensor and vehicle direction signal (forward or reverse.) Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

I/O PORTS

The TrimFleet DRU Plus provides two RS232C compatible communication ports that may be connected to external devices. One port provides a DE-9 female DCE connection, and the other port provides a DE-9 female DTE connection. The ports may be configured individually for baud rates between 110 and 115.2K baud. Both ports support NMEA and TAIP protocols. The default configuration for both ports is 9600 baud TAIP.

Also provided is support for PPP over RS232C on Port 1. An IP capable XTL 2500 radio may be interfaced to the port to allow wireless transmission of TAIP messages to an AVL server. The TAIP messages will be encapsulated in UDP packets and sent to a configurable destination IP address and port. TAIP messages may also be sent back to the TrimFleet DRU Plus by the AVL application to modify reporting rates and query current location or status.

Vehicle location is available only on ASTRO Conventional and Trunked IV&D Systems. Subscribers must have version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software.

Digital Conventional Ordering requirements for XTL 2500 Mobile:

- Requires Control Head (G442)
- ASTRO Digital CAI Operation (G806)
- Conventional Operation (G48)
- Packet Data Interface (W947)
- Mid Power RS232 Cable (G303 Dash / G304 Remote) *(Hooks to the J2 rectangular and DB9 connector)*
- High Power RS232 Cable (HKN6122) *(Hooks to the DB25 connector and the DB9 connector)*

P25 Trunking Ordering requirements for XTL 2500 Mobile:

- Requires Control Head (G442)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking 9600 Software (G361)
- Packet Data Interface (W947)
- Mid Power RS232 Cable (G303 Dash / G304 Remote) *(Hooks to the J2 rectangular and DB9 connector)*
- High Power RS232 Cable (HKN6122) *(Hooks to the DB25 connector and the DB9 connector)*

Description	Nomenclature	APC	Price
TRIMFLEET DRU PLUS (W/DR & POWER CABLE)	DDN9439	222	$745.00

Description	Nomenclature	APC	Price
TRIMFLEET APU (W/POWER CABLE)	DDN9440	222	$620.00

Description	Nomenclature	APC	Price
TRIMFLEET GPS ANTENNA WITH CABLE	DDN9474	222	$99.00

Section E: Retrofit Mounting Kits

PLEASE READ ALL ALLIED MODEL AND OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION.

Retrofit Mounting Kits

Remote to Dash

Converte an existing remote mounted XTL 2500 mobile radio to a dash mounted radio. Applicable to Low/Mid power models.

Description	Nomenclature	APC	Price
REMOTE TO DASH RETROFIT KIT FOR O5 OR XTL2500 Contains dash mount headbridge hardware. Does not include transciever trunion. Does not include a control head.	H1817	514	$75.00

Dash to Remote

Converts an existing dash mounted XTL 2500 mobile radio to a remote mounted radio. Applicable to Low/Mid power models.

If you are retrofitting XTL 2500 radios that shipped AFTER 7/1/06, order H1818.

If you are retrofitting XTL 2500 radios that shipped BEFORE 7/1/06, order H1825.

Description	Nomenclature	APC	Price
O5/M5 DASH TO O5/M5 REMOTE RETROFIT KIT Contains rear housing for remote O5, O5 control head remote mounting hardware, remote O5 power cable, remote trensciever faceplate. Remote cable availeble as option. Does not include transciever trunion. Does note include O5 control head.	H1818	514	$325.00

Remote Mount Cables

(Cable option is NOT required. If cable option is ordered, select ONLY one option.)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G626	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00

ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT) ***For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio*** Corresponding kit: HKN6164	G582	514	$65.00

Section F: Remote Control Head Replacement / Dual Control Head Retrofit Kit

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION.

Remote Control Head Replacement AND Dual Control Head Retrofit Kit

The XTL 2500 M5 Remote Control Head Replacement AND Dual Control Head Retrofit provides / requires the following:

- QTY 1: **REMOTE** mount control head assembly that includes a control head + flex cable + control head interface boerd rear housing (CHIB)
- Qty 1: Remote Control Head Power cable (HKN6188)
- Qty 1: Remote Control Head Mounting trunion and hardware
- Qty 1: Manual CD and dust cover kit
- OPTION: Must select a microphone option
- OPTION: Must select a speaker option
- OPTION: Must select a remote cable option

*** IF YOU ARE ADDING A CONTROL HEAD TO CONVERT A SINGLE CONTROL REMOTE MOUNT RADIO TO A DUAL CONTROL, THEN YOU MUST MAKE SURE THE RADIO HAD VERSION 6.9 SOFTWARE OR GREATER.

THE ALLIED SALES MODEL BELOW DOES NOT INCLUDE A FLASH FIRMWARE REFRESH. PLEASE SEE THE SUBSCRIBER FLASHPORT SOFTWARE UPGRADE PRICE PAGE ***

Description	Nomenclature	APC	Price
M5 REMOTE CTRL HD/CHIB REPLACEMENT / ADDITION	H1827	514	$570.00

Microphones

(Must Select One and Only One)

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.	G90	500	$0.00
ADD: PALM MICROPHONE Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090	W22	500	$72.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079	W20	514	$180.00

Speakers ***(Must Select One)***

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$60.00
ADD: INCREASED AUDIO POWER 13W Corresponding kit: HSN4032. NOT COMPATIBLE with W865 Control Station and Motorcycle Configuration.	W432	500	$71.50

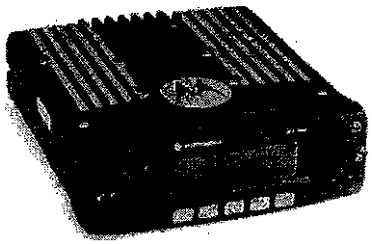
Remote Mount Cables

***** For Dual configurations, the total cable length may NOT be greater that 131 ft (40 meters) *****

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6166	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6168A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT) ***For Dual/Tri/Quad configurations, the total cable length may not be greater thet 131 ft (40 meters). Therefore, this cable should not be usad with a dual, tri, or quad control redio*** Corresponding kit: HKN6164	G562	514	$65.00

Data Compiled 16-May-2013 using DUP and all prices in USD



ASTRO® Digital XTL 2500 Mobile
VHF 136-174 MHz Band

Secure and Trunked Radio Systems

Ship Card

General Information

The XTL 2500 Mobile Line offers 1 radio hardware model:

Hardware Mode	Modes	Alphanumeric Display Lines/Characters per Line
CH	1000	4/14

OPERATING MODES

XTL 2500 Radio Models are capable of operating in three different voice communication modes:

- normal analog (clear voice)
- 3.6kb ASTRO Digital (both clear and coded voice)
- 9.6KB ASTRO Digital (both clear and coded voice)

The mode of operation is programmed on a channel-by-channel basis. The XTL 2500 is capable of transmitting clear analog voice or clear (unencrypted) ASTRO digital voice, depending on the channel programming. XTL 2500 radio functions include ASTRO Digital signaling and digital coding.

Please note that XTL radios do NOT support FRED.

Each hardware model must be ordered with 1 of the System Enhancement Software Package options.
The matrix below indicates standard Trunking features for SmartZone (G51) System Packages. SmartZone features listed in the lower matrix are available in the (G51) package only. Radio Wide Features and Standard Conventional Features are listed above. System Enhancement Options can be added to the packages shown below. Refer to the System Enhancement Options for compatibility.

COMMON SOFTWARE FEATURES SUPPORTED BY G51 "SmartZone®"	"Analog Operation"(G241)	"ASTRO Digital"(G806)	"ASTRO Digital" (G51/G806/G361)
		Non-Project 25	Project 25
		(3600 Baud)	(9600 Baud)
RADIO WIDE FEATURES			
Maximum Modes			
XTL 2500 Control Head	1000	1000	1000
Analog and Digital Operation	-	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes
ADP Encryption	No	Yes	Yes
Encryption Capable	Yes	Yes	Yes
One Touch Operation	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes

FLASHport	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES			
Conventional Features are additional radio wide features beyond those specified in the APCO Project 25 documents.			
CSQ/PL/DPL	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes
Monitor	Yes	Yes	Yes
DTMF Tone Generation	Future	Future	Future
MPL	Future	N/A	N/A
MDC PTT ID	Yes	Yes	Yes
MDC Selective Radio Inhibit (Decode Only)	Yes	Yes	Yes
MDC Call Alert (Encode/Decode)	Yes	Yes	Yes
MDC Radio Check (Decode Only)	Yes	Yes	Yes
MDC Voice Selective Call (Encode/Decode)	Yes	Yes	Yes
MDC Remote Monitor (Decode Only)	Yes	Yes	Yes
MDC Call Lists (Call Alert/Select Call)	Yes	Yes	Yes
MDC Emergency	Yes	Yes	Yes
MDC Silent Emergency (Encode)	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES			
These features are APCO Project 25 Interoperable Features when used in the ASTRO Digital CAI Mode (G806)			
Unaddressed Voice Call	-	Yes	Yes
Talk Group Call	-	Yes	Yes
Group Call Alert™	-	Yes	Yes
Talk Group Identification (TGID)	-	Yes	Yes
Selective Call (Individual Voice Call)	-	Yes	Yes
Selective Call Decode (Individual Voice Call)	-	Yes	Yes
PTT ID (Individual Identification)	-	Yes	Yes
Call Alert Encode/Decode	-	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	-	Yes	Yes
Telephone Interconnect	-	Yes	Yes
Unlimited	-	Yes	Yes
Selective Radio Inhibit	-	Yes	Yes
Radio Check	-	Yes	Yes
Status/Message	-	Yes	Yes
Trunking Type II Only Features			
Maximum Number of Trunked Systems-20			
Talkgroup Calls	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes
Dual Mode Scan	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only
Dispatcher Interrupt	No	No	No
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes

Radio Trace	Yes	Yes	No
Reprogram Request	Yes	Yes	Yes

Each hardware model muet be ordered with 1 of the Syetem Enhancement Software Package options, Conventional or SmartZone.

SOFTWARE FEATURES SUPPORTED BY G51 "SmartZone®"			
	"Analog Operation" (G241)	"ASTRO Digital" (G806)	"ASTRO Digital" (G51/G806/G361)
		Non-Project 25	Project 25
		(3600 Baud)	(9600 Baud)
Trunking Type II Only Features			
Voice on Control	Future	Future	Yes
SmartZone Automatic Site Registration	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes
SmartZone Busy Override	No	No	No
SmartZone Preferred Site	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the XTL 2500 Mobile Radio Series. Separation of frequencies can be as wide as the allowable sub-band

per radio model with no degradation of any performance specifications. **If en Incorrect antenna le ueed, degraded performance may be experienced.**

COMMON AIR INTERFACE

Conventional channels are P25 compliant with the ASTRO Digital CAI Operation Software (G806). ASTRO P25 Trunking Software (G361) **muet be** added for P25 compliance in trunked systems.

PROJECT 25 ENCRYPTION

When ordering any of the Encryption Algorithm:

- **MUST** order the Encryption UCM Hardware (G159)
- ADP Privecy not supported by OTAR. ADP is digital P25 conventional / P25 trunking only.
- The OES-OFB and AES-OFB Encryption offered is compliant with Project 25 standards and does not support analog encryption operation.
    - REQUIRES the ASTRO Digital CAI (G806) to operate the DES-OFB or AES-OFB Encryption
- If ordering a non-OFB (XL version) Encryption:
    - The non-OFB encryption (XL versions) can be operated in either analog or CAI digital mode but will not be Project 25 compliant.
- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.
    - Encryption UCM Hardware (G159) module may be ordered without an Encryption Algorithm for later upgrade in the field.

FIELD INSTALLED PROJECT 25 ENCRYPTION

The DES-OFB and AES-OFB Encryption offered is compliant with Project 25 standards. Operation of DES-OFB and/or AES-OFB encryption requires the ASTRO Digital CAI (G806). Radios can be upgraded via FLASHport to CAI operation.

- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

FIPS 140-2 COMPLIANCE

Encryption Modules equipped with AES are FIPS 140-2 compliant. ADP Privacy is not FIPS compliant. Further information regarding FIPS 140-2 certification may be found using the following links:

FIPS 140-2 Crypto Module Validation Program (CMVP)

NIST Cryptographic Module Validation Lists

Self-Quieting Spurs Frequency (MHz)

VHF 142.85 MHz

ASTRO Text Messaging Service

ASTRO Text Messaging Service is now available on ASTRO 25 XTS 5000, XTS 2500 Portable radios and ASTRO 25 XTL 5000, XTL 2500 Mobile radios. Text Messaging Service (TMS) allows subscriber users to send and receive text messages to other subscribers or dispatch operators. Users can select messages and addresses from a predefined list or enter freeform text messages and addresses via the keypad. Text Messaging Service is available on ASTRO Trunked IV&D Systems and Subscribers. Subscribers must have version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software.

For full Text Messaging functionality, including freeform text messaging and addressing, must Control Head with Keypad Microphone. Control Head without the Keypad Microphone supports Limited Text Messaging functionality such as selecting predefined messages or addresses from a list programmed in the radio.

Ordering requirements for XTL 2500 Mobile:

- Full functionality including free form messaging requires the Keypad Microphone (W20)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking 9600 Software (G361)
- Packet Data Interface (W947)

NOTE: There is no specific option to order for the Text Messaging Service on the subscribers as the functionality is included in the Packet Data option.

FCC Information

Band/Model	Power Output	Transmitter Certification (Type Acceptance)	Emissions	Applicable Rules
136-174 MHz	25 - 110 Watts	AZ492FT3808	8K10F1D, 8K10F1E, 11K0F3E, 16K0F3E, 20K0F1E, 20K0F1D	22, 74, 90

- Except for Itinerant and low-power incident channels.

** Itinerant & Low-Power Incident Channels	
Channel Number	Frequency Range (MHz)

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

Ç Canada psrsonnel refer to Section A under CANADA ONLY Information.

Guideline

This price page consists of the following sections:

A. Required Main Models and Options for standard operation (Steps 1-9)

B. Optional Features

C. Aftermarket Accessories

Section A: Required Main Model and Options

For standard Radio Operation **Steps 1 - 9** must be selected.

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

1: Main Model *(Must Select)*

Description	Nomenclature	APC	Price
VHF 136-174 MHZ 100 WATT	M21KTM9PW1 N	518	$1,997.00

2: Operation Mode *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: SOFTWARE ASTRO READY ANALOG	G241	500	$0.00
NOT COMPATIBLE with Encryption Algorithm W969, W793, W797, G298, G851, or G843 when combined with a Trunking Software Option. DES-OFB is not operational in Analog Operation.			
ENH: XTL SOFTWARE ASTRO DIGITAL CAI OPERATION	G808	514	$515.00

3: System Enhancement Software *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: CONVENTIONAL OPERATION	G48	514	$275.00
ENH: SOFTWARE SMARTZONE/SINGLETONE	G51	514	$975.00

3b: Optional System Enhancement Software *(Not Required)*

Description	Nomenclature	APC	Price
ENH: SMARTZONE OMNILNK MULTZONE SYSTEM SW	G173	856	$200.00
Automatic Zoning Across Zones, Zone Registration, Trespass Protection, Over the Air Site Alias, 32 Preferred Sites, FastStart and AllStart Call Setup.			
ADD: P25 TRUNKING SOFTWARE	G361	656	$300.00
When ordering this option G51 & G808 MUST be ordered. G173 is included at "NO CHARGE".			

4: Control Head Hardware *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: XTL2500 CONTROL HEAD	G442	514	$292.00
ADD: NO CONTROL HEAD NEEDED	G88	500	$0.00
Requires remote mounting option (G67 or G655)			

5: Control Head Software *(Must Always Select G444)*

Description	Nomenclature	APC	Price
ADD: ADD: CONTROL HEAD SOFTWARE	G444	514	$0.00
MUST ALWAYS SELECT THIS OPTION			

6: Mounting *(Must Select One)*

If a remote mount cable other than 5 meters (17ft) is desired for the G67 or G655, please reference the "Remote Mount Cables" section below in Section C: Optional Features

Description	Nomenclature	APC	Price
ADD: THUMB SCREW REMOTE MOUNT	G67	514	$297.00
ADD: QUICK HP REMOTE MT	G655	518	$346.00

7: Antenna *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: NO ANTENNA NEEDED	G89	500	$0.00
ANTENNA 1/4 WAVE WHIP ROOF TOP (138-144 MHZ) Corresponding kit: HAD4006 Corresponding Motorcycle kit: RAD4002ARB	G296	585	$13.50
ANTENNA 1/4 WAVE ROFF TOP VHF (144-150.8 MHZ) Corresponding kit: HAD4007 Corresponding Motorcycle kit: RAD4003ARB	G297	585	$13.50
ANTENNA 1/4 WAVE ROOF TOP VHF (150.8-162 MHZ) Corresponding kit: HAD4008 Corresponding Motorcycle kit: RAD4004ARB	G299	585	$19.50
ANTENNA 1/4 WAVE ROOF TOP VHF (162-174 MHZ) Corresponding kit: HAD4009 Corresponding Motorcycle kit: RAD4005ARB	G300	565	$13.50
ANTENNA, VHF (136-174MHZ, 3.4 BANDWIDTH) 3DB ROOF TOP Not Compatible with Motorcycle Corresponding kit: HAD4022A.	G301	585	$58.50
ADD: 1/4 WAVE BROADBAND ANT 146-174 MHZ Not Compatible with Motorcycle Corresponding kit: HAD4017.	G629	585	$64.00

8: Microphones *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.	G90	500	$0.00
ADD: PALM MICROPHONE Corresponding kit for W4, W5, W7: HMN1060 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090	W22	500	$72.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079 itemn=w382,4#}	W20	514	$180.00
ADD: HANDSET/HANGUP GCAI Coiled Cable with Toggle Switch Accessory Kit: HLN1457A	G874	514	$285.00
ADD: MODEL III KEYPAD TELEPHONE HANDSET Corresponding kit: HMN4097A	GA00221	514	$295.00

9: Speakers *(Must Select One)*

G142 NO SPEAKER Required for Control Station

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$60.00
ADD: INCREASED AUDIO POWER 13W Corresponding kit: HSN4032. NOT COMPATIBLE with W665 Control Station and Motorcycle Configuration.	W432	500	$71.50

Section B: Optional Features

The following features are **optional** and will provide additional capabilities, if required.

System Enhancement Options

Description	Nomenclature	APC	Price
ENH: ENHANCED DIGITAL ID DISPLAY	G114	500	$75.00
8 numeric character unit to unit display. NOTE: This option is required to display Radio ID or Radio Alias on the display for analog and digital conventional and trunking configurations.			
ENH: RADIO TRACE AND REMOTE MONITOR	G170	500	$75.00
Note: G170 option for Radio Trace/Remote Monitor is not compatible with W3 Control Head and G474 (Multi-Radio). For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ADD: CONVENTIONAL VOTING SCAN ASTRO	G387	500	$200.00
This feature allowe for voting of the Conventional Channels ONLY.			
ADD: TRUNKED ONE TOUCH BUTTON	G683	500	$150.00
ENH: OVER THE AIR PROGRAMMING	G996	518	$100.00
Compatible with P25 Trunking only. Requires W947 Data option. To do in field POP25 programming must use Advanced System Key (DVN4046A)			
ADD: XTL2500 RADIO AUTHENTICATION	W391	514	$100.00

Encryption Hardware and Software

Description	Nomenclature	APC	Price
ADD: ENCRYPTION UCM	G159	500	$150.00
REQUIRED for ANY encryption combination of Hardware Based Algorithms. Not Compatible with G193. CUSTOMERS USING THE FOLLOWING FREQUENCIES MUST ADD FREE OPTION "QA00351AA" (ENH: UCM SP TRIGGER) due to a known Self Quiting Issue for radios with the standerd UCM. UHF SELF-QUIETING SPURS: UHF RANGE 1 FREQUENCIES: 383.975 MHz 393.2125 MHz 395.975 MHz 432 MHz 458 MHz UHF RANGE 2 FREQUENCIES: 458 MHz 479.975 MHz 480 MHz			
ADD: KEY RETENTION 30 SECONDS	G336	500	$50.00
G159 REQUIRED			
ADD: MULTIPLE KEY ENCRYPTION OPERATION	W969	500	$330.00
REQUIRED when using more than one encryption algorithm or encryption key.			
ENH: CONVENTIONAL TACTICAL REKEY WITH MULTIKEY	H04	514	$350.00
Must Order IV&D(Q947)			

Algorithm Options

(XTL2500 does NOT support multiple algorithms)

Description	Nomenclature	APC	Price
ADD: ADP ENCRYPTION	G113	500	$349.00
REQUIRES G159. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G606 in the Digital Conventional mode ONLY. Includes Multikey.			
ADD: ADP WITH DES/DES-XL/DES-OFB	G194	500	$799.00
REQUIRES G159. INCLUDES W969 Multi-key. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G606 in the Digital Conventional mode ONLY.			
ADD: DES/DES-XL/DES-OFB ENCRYPTION	G625	500	$599.00
G159 is REQUIRED when ORDERING. Only DES/DES-XL are Operational in Analog Mode.			
ADD: AES ENCRYPTION	G843	500	$475.00
G159 REQUIRED G843 is NOT compatible with G851.			
ADD: DVI-XL ENCRYPTION	W793	500	$520.00
G159 is REQUIRED when ORDERING			
ADD: DVP-XL ENCRYPTION	W797	500	$487.00
G159 is REQUIRED when ORDERING			

Software Encryption

Description	Nomenclature	APC	Price
ADD: ADP SOFTWARE DSP BASED CRYPTO	G193	500	$10.00
REQUIRES: G806 Digital Operation DOES NOT REQUIRE: G159 UCM or G77/G78 Encryption Warranty. Use standard warranty options if needed. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G806 in the Digital Conventional mode ONLY. .Includes 8 non-indexing encryption keys..			

Remote Mount Cables

The 5 meter (17 FT) Cable Ships Standard

Description	Nomenclature	APC	Price
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT) ***For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio*** Corresponding kit: HKN6164	G582	514	$65.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G807	514	$45.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G809	514	$35.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G810	514	$25.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G818	514	$10.00

DEK

Description	Nomenclature	APC	Price
ADD: STATUS MESSAGE 8 MESSAGES NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration. CORRESPONDING KIT: H1638A	W355	500	$475.00
ADD: DDE STATUS MESSAGES 16 NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration. CORRESPONDING KIT: H1639A	W374	500	$650.00

Direct Mode Entry

Description	Nomenclature	APC	Price
ADD: 8 MODE DIRECT ENTRY ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1635A	W599	500	$160.00
ADD: 16 MODE DIRECT ENTRY ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1636A	W614	500	$360.00
ADD: 24 MODE DIRECT ENTRY NOT COMPATIBLE with W269 Siren/PA. 9600 Systems offer ONLY "Status" and not "Message". ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1637A	W615	500	$540.00

WHELEN SIREN (MOTOROLA COMPATIBLE)

NOTE: THE NEW SIREN IS COMPATIBLE WITH APX AND XTL MOBILES WITH "O" SERIES CONTROL HEADS ONLY. THIS SIREN IS NOT COMPATIBLE WITH ANY "W" SERIES CONTROL HEADS

THE SIREN BASE MODEL TT2592, ONE CABLE AND THE SIREN MOUNTING HARDWARE TT0507 MUST ALWAYS BE ORDERED (THIS SIREN IS ORDERED AS A SEPARATE LINE ITEM, TT2592 IS THE MODEL)

DEK OPTIONS ARE AVAILABLE AS OPTIONS TO THE SUBSCRIBER AS SHOWN BELOW

Description	Nomenclature	APC	Price
WHELEN/MOTOROLA SIREN	TT2592	656	$395.00
SIREN HARDWARE INSTALL KIT	TT05707AA	658	$20.00
SIREN TO RADIO CABLE	TT05708AA	656	$65.00
SIREN TO DEK CABLE - O3 CONTROL HEAD ONLY	TT05709AA	656	$76.00

SIREN DEK OPTIONS

ADD: DEK FOR WHELEN SIREN W/ O3 CH ONLY	GA00812	658	$105.00
ADD: DEK FOR WHELEN SIREN	GA00814	656	$105.00

Auxiliary Switches

Description	Nomenclature	APC	Price
ADD: AUXILIARY SWITCH PANEL	W591	500	$165.00
Corresponding kit: HLN1186. G57 REQUIRED. NOT compatible with W3 control head or motorcycle.			

Alarm

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAYS AND CABLE	W116	500	$75.00
For either HORN or LIGHTS. NOT both			

Emergency

Description	Nomenclature	APC	Price
ADD: PTT FOOTSWITCH	G235	514	$51.00
Requires W872 Visor Mic. Kit Number: GLN7278B			
ADD: EXT EMERGENCY PUSHBUTTON	W888	500	$56.00
Corresponding kit: HLN6131			

Frequency and Squelch Codes

Description	Nomenclature	APC	Price
ENH: FACTORY PROGRAMMING	W844	500	$0.00

Packet Data Interface / Data Cables

Description	Nomenclature	APC	Price
ADD: RS232 DATA INTFC CABLE-DASH	G303	500	$50.00
8 FT RS232 DATA CABLE Corresponding kit: HKN6160A.			
RS232 DATA INTFC CABLE-TRUNK	G304	500	$50.00
20 FT RS232 DATA CABLE Corresponding kit: HKN6161A.			
ADD: RS232 & IV&D PACKET DATA INTERFACE	W947	500	$200.00
This option is ONLY Operational on Digital Trunking and Digital Conventional systems!! INCLUDES the DLM Application. This option does not include Cables. G303 or G304 should be ordered seperately.			
USB DATA INTFC CABLE-DASH	G308	500	$50.00
8 FT USB W/IGNITION SENSE Corresponding kit: HKN6163B.			

RF Modem

******Supported for 9600 Trunking only******

Description	Nomenclature	APC	Price
ENH: ENABLE RF MODEM	G319	500	$0.00
The XTL mobiles do not support Site Lens or System Watch. Therefore, the APX RF Modem function does not support the legacy System Watch or Site Lens applications. The APX RF Modem supports Conventional or 9600 Trunking only. Enabling the RF Modem in conventional mode allows provisioned APX portables to pass accountability data through the portable option Q445.			

Service (Theee Service options are NOT applicable for Asia Pac)

REPAIR SERVICE ADVANTAGE

Provides for extended hardware repair coverage beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$64.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$248.00
ENH: 3 YR CANADA EXTND WRNTY XTL	GA00313	386	$177.00
ENH: 5 YR CANADA EXTND WRNTY XTL	GA00316	386	$240.00

REPAIR SERVICE ADVANTAGE (ENCRYPTED)

Provides for extended hardware repair coverage, including encryption, beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G77	185	$72.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G78	185	$137.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	GA00232	185	$205.00
ENH: 3 YR CANADA ENCR EXT WRNTY XTL	GA00314	386	$181.00
ENH: 5 YR CANADA ENCR EXT WRNTY XTL	GA00317	386	$244.00

REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)

Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00
ENH: 3 YEAR ENCRYPTED RSA (COMPREHENSIVE)	GA00255AA	185	$302.00

Test Results

Description	Nomenclature	APC	Price
ADD: PRINTED TEST RESULTS	G799	500	$0.00

Amplifier

UHF and VHF Mid and High Power Radios Only

Description	Nomenclature	APC	Price
ADD: RF PRE-AMPLIFIER	W12	585	$66.00

Section C: Aftermarket Accessories

Algorithm Kits

DES DES-XL DES-OFB ENCRYPTION KIT	NNTN4941	456	$786.00

Antennas

Description	Nomenclature	APC	Price
ANTENNA, VHF (138-144MHZ) 1/4 WAVE ROOF TOP	HAD4006	554	$19.50
High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedence 50 Ohmns, nominal			
ANTENNA, VHF (144-150.8 MHZ) 1/4 WAVE ROOF TOP	HAD4007	554	$19.50
High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohmns, nominal			
ANTENNA, VHF (150.8-162 MHZ) 1/4 WAVE ROOF TOP	HAD4008	554	$19.50
High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedence 50 Ohmns, nominal			
ANTENNA, VHF (162-174 MHZ) 1/4 WAVE ROOF TOP	HAD4009	554	$19.50
High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohmns, nominal			
ANTENNA VHF 1/4 WAVE	RAD4002ARB	554	$100.00
ANTENNA VHF 1/4 WAVE	RAD4004ARB	554	$100.00
ANTENNA, VHF (136-174 MHZ 3.4 MHZ BANDWITH) 3DB ROOF TOP	RAD4010ARB	554	$82.00
High Band Base Loaded Antenna - Mini UHF connector, Roof Mount, RG58A/u Cable, Rugged Duty, Frequency Range 136-174 MHz., Power: 150 Watts Max., Gain: 3 dB, nominal, VSWR: Less than 1.5:1, Impedence: 50 Ohms, nominal			

Cable (a)

AUDIO CABLE ADAPTER	HKN6158	500	$49.00
ADAPTER CABLE DATA	HKN6159	500	$49.00

Cables (Remote Mount)

CABLE, REMOTE MOUNT, 75 FT	HKN6166	514	$80.00
CABLE, REMOTE MOUNT, 115 FT	HKN6165	514	$105.00
CABLE,REMOTE MOUNT,131 FT	HKN6164	514	$122.00

Customer Programming Software

Data

CABLE KIT 20' DATA RS232 Data Interface Cable - REMOTE	HKN6161	476	$50.00

Manuals

Description	Nomenclature	APC	Price
XTL 2500 M5 MANUAL	HLN1480D	514	$12.00

Microphones

HANDSET/HANGUP (HANGUP CUP)	HLN1457	706	$265.00
MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	706	$295.00
XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00
AS. SPECTRA & XTL5000 DESKTOP MIC	RMN5070A	706	$172.00

Speakers

EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	HSN4038	476	$60.50
MCS EXT SPKR 13W	HSN4032B	500	$71.50

Bull Horns for Sirens and Public Address

Description	Nomenclature	APC	Price
SPEAKER SIREN, ROUND W/CHROME & BLACK	TDN6251	706	$329.00
SPEAKER RECTANGULAR WITH CHROME FINISH	TDN6252	706	$265.00
SPEAKER UNDERHOOD WITH GRAY FINISH	TDN6253	706	$220.00
SPEAKER ROUND WITH GRAY FINISH	TDN6254	706	$246.00

Miscellaneous

Description	Nomenclature	APC	Price
WILDCARD	HLN1196	412	$165.00
AUXILIARY SWITCH PANEL (W591-W9)	HLN1342	617	$165.00

Section D: Vehicle Location Solution

Vehicle Location Solution

Vehicle location or GPS is now available on the ASTRO 25 XTL 2500 mobile radio.

The TrimFleet ™ GPS mobile units provide a versatile and economical platform for mobile positioning applications. Using state-of-the-art GPS receiver technology, the TrimFleet GPS receiver unit has been optimized for vehicle installation and operation, providing reliable vehicle position, direction, speed, time and status in any weather, anywhere in the world.

The TrimFleet receiver contains a 12-channel GPS module and an (optional) angular rate sensor module. The TrimFleet receiver connects directly to in-vehicle laptops/workstations as well as VRM and XTL radios. The TrimFleet GPS receiver outputs positions when in GPS coverage via either of its RS-232C serial ports in National Marine Electronics Association Protocol (NMEA), Trimble ASCII Interface Protocol (TAIP) and Point to Point Protocol (PPP) formats. The TrimFleet receiver may be configured to send the position data in either protocol via the two RS-232C data ports. Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

The TrimFleet DRU Plus may be equipped with an optional internal module to provide dead reckoned position data while outside of GPS coverage. This is accomplished through the use of advanced gyroscopic technology in combination with connections to the vehicle speed sensor and vehicle direction signal (forward or reverse.) Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

I/O PORTS

The TrimFleet DRU Plus provides two RS232C compatible communication ports that may be connected to external devices. One port provides a DE-9 female DCE connection, and the other port provides a DE-9 female DTE connection. The ports may be configured individually for baud rates between 110 and 115.2K baud. Both ports support NMEA and TAIP protocols. The default configuration for both ports is 9600 baud TAIP.

Also provided is support for PPP over RS232C on Port 1. An IP capable XTL 2500 radio may be interfaced to the port to allow wireless transmission of TAIP messages to an AVL server. The TAIP messages will be encapsulated in UDP packets and sent to a configurable destination IP address and port. TAIP messages may also be sent back to the TrimFleet DRU Plus by the AVL application to modify reporting rates and query current location or status.

Vehicle location is available only on ASTRO Conventional and Trunked IV&D Systems. Subscribers must have version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software.

Digital Conventional Ordering requirements for XTL 2500 Mobile:

- Requires Control Head (G442)
- ASTRO Digital CAI Operation (G806)
- Conventional Operation (G48)
- Packet Data Interface (W947)

- Mid Power RS232 Cable (G303 Dash / G304 Remote) *(Hooks to the J2 rectangular and DB9 connector)*

- High Power RS232 Cable (HKN6122) *(Hooks to the DB25 connector and the DB9 connector)*

P25 Trunking Ordering requirements for XTL 2500 Mobile:

- Requires Control Head (G442)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking 9600 Software (G361)
- Packet Data Interface (W947)

- Mid Power RS232 Cable (G303 Dash / G304 Remote) *(Hooks to the J2 rectangular and DB9 connector)*

- High Power RS232 Cable (HKN6122) *(Hooks to the DB25 connector and the DB9 connector)*

Description	Nomenclature	APC	Price
TRIMFLEET DRU PLUS (W/DR & POWER CABLE)	DDN9439	222	$745.00

Description	Nomenclature	APC	Price
TRIMFLEET APU (W/POWER CABLE)	DDN9440	222	$620.00

Description	Nomenclature	APC	Price
TRIMFLEET GPS ANTENNA WITH CABLE	DDN9474	222	$99.00

Section E: Retrofit Mounting Kits

PLEASE READ ALL ALLIED MODEL AND OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION.

Retrofit Mounting Kits

Remote to Dash

Converts an existing remote mounted XTL 2500 mobile radio to a dash mounted radio. Applicable to Low/Mid power models.

Description	Nomenclature	APC	Price
REMOTE TO DASH RETROFIT KIT FOR O5 OR XTL2500 Contains dash mount headbridge herdware. Does not include transciever trunion. Does not include a control head.	H1817	514	$75.00

Dash to Remote

Converts an existing dash mounted XTL 2500 mobile radio to a remote mounted radio. Applicable to Low/Mid power models.

If you are retrofitting XTL 2500 radios that shipped AFTER 7/1/06, order H1818.

If you are retrofitting XTL 2500 radios that shipped BEFORE 7/1/08, order H1825.

Description	Nomenclature	APC	Price
O5/M5 DASH TO O5/M5 REMOTE RETROFIT KIT Contains rear housing for remote O5, O5 control head remote mounting hardware, remote O5 power cable, remote transclever faceplate. Remote cable available as option. Does not include transciever trunion. Does note include O5 control head.	H1818	514	$325.00

Remote Mount Cables

(Cable option is NOT required. If cable option is ordered, select ONLY one option.)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN8170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN8169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN8168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN8167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN8166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN8165	G879	514	$55.00
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT) ***For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio*** Corresponding kit: HKN8164	G582	514	$65.00

Section F: Remote Control Head Replacement / Dual Control Head Retrofit Kit

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION.

Remote Control Head Replacement AND Dual Control Head Retrofit Kit

The XTL 2500 M5 Remote Control Head Replacement AND Dual Control Head Retrofit provides / requires the following:

- QTY 1: **REMOTE** mount control head assembly that includes a control head + flex cable + control head interface board rear housing (CHIB)
- Qty 1: Remote Control Head Power cable (HKN6186)
- Qty 1: Remote Control Head Mounting trunion and hardware
- Qty 1: Manual CD and dust cover kit
- OPTION: Must select a microphone option
- OPTION: Must select a speaker option
- OPTION: Must select a remote cable option

*** IF YOU ARE ADDING A CONTROL HEAD TO CONVERT A SINGLE CONTROL REMOTE MOUNT RADIO TO A DUAL CONTROL, THEN YOU MUST MAKE SURE THE RADIO HAD VERSION 8.9 SOFTWARE OR GREATER.

THE ALLIED SALES MODEL BELOW DOES NOT INCLUDE A FLASH FIRMWARE REFRESH. PLEASE SEE THE SUBSCRIBER FLASHPORT SOFTWARE UPGRADE PRICE PAGE ***

Description	Nomenclature	APC	Price
M5 REMOTE CTRL HD/CHIB REPLACEMENT / ADDITION	H1827	514	$570.00

Microphones

(Must Select One and Only One)

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.	G90	500	$0.00
ADD: PALM MICROPHONE Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1080	W22	500	$72.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079	W20	514	$180.00

Speakers *(Must Select One)*

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$60.00
ADD: INCREASED AUDIO POWER 13W Corresponding kit: HSN4032. NOT COMPATIBLE with W665 Control Station and Motorcycle Configuration.	W432	500	$71.50

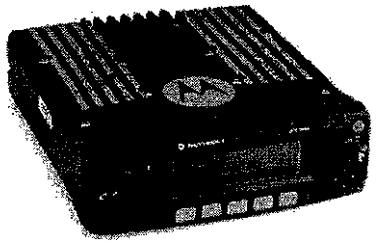
Remote Mount Cables

***** For Dual configurations, the total cable length may NOT be greater that 131 ft (40 meters) *****

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G810	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT) ***For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio*** Corresponding kit: HKN6164	G582	514	$65.00

Data Compiled 16-May-2013 using DUP and all prices in USD



ASTRO® Digital XTL 2500 Mobile
VHF 136-174 MHz Band

Secure and Trunked Radio Systems

Ship Card

General Information

The XTL 2500 Mobile Line offers 1 radio hardware model:

Hardware Mode	Modes	Alphanumeric Display
		Lines/Characters
		per Line
CH	1000	4/14

OPERATING MODES

XTL 2500 Radio Models are capable of operating in three different voice communication modes:

- normal analog (clear voice)
- 3.6kb ASTRO Digital (both clear and coded voice)
- 9.6KB ASTRO Digital (both clear and coded voice)

The mode of operation is programmed on a channel-by-channel basis. The XTL 2500 is capable of transmitting clear analog voice or clear (unencrypted) ASTRO digital voice, depending on the channel programming. XTL 2500 radio functions include ASTRO Digital signaling and digital coding.

Please note that XTL radios do NOT support FRED.

Each hardware model must be ordered with 1 of the System Enhancement Software Package options.
The metrix below indicates standard Trunking features for SmartZone (G51) System Packages. SmartZone features listed in the lower matrix are available in the (G51) package only. Radio Wide Features and Standard Conventional Features are listed above. System Enhancement Options can be added to the packages shown below. Refer to the System Enhancement Options for compatibility.

COMMON SOFTWARE FEATURES SUPPORTED BY G51 "SmartZone®"			
	"Analog Operation"(G241)	"ASTRO Digital"(G806)	"ASTRO Digital" (G51/G806/G361)
		Non-Project 25	Project 25
		(3600 Baud)	(9600 Baud)
RADIO WIDE FEATURES			
Maximum Modes			
XTL 2500 Control Head	1000	1000	1000
Analog and Digital Operation	-	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes
ADP Encryption	No	Yes	Yes
Encryption Capable	Yes	Yes	Yes
One Touch Operation	Yes	Yes	Yes

Radio Wide Transmit Inhibit	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES			
Conventional Features are additional radio wide features beyond those specified in the APCO Project 25 documents.			
CSQ/PL/DPL	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes
Monitor	Yes	Yes	Yes
DTMF Tone Generation	Future	Future	Future
~~MPL~~	~~Future~~	~~N/A~~	~~N/A~~
MDC PTT ID	Yes	Yes	Yes
MDC Selective Radio Inhibit (Decode Only)	Yes	Yes	Yes
MDC Call Alert (Encode/Decode)	Yes	Yes	Yes
MDC Radio Check (Decode Only)	Yes	Yes	Yes
MDC Voice Selective Call (Encode/Decode)	Yes	Yes	Yes
MDC Remote Monitor (Decode Only)	Yes	Yes	Yes
MDC Call Lists (Call Alert/Select Call)	Yes	Yes	Yes
MDC Emergency	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES			
These features are APCO Project 25 Interoperable Features when used in the ASTRO Digital CAI Mode (G806)			
Unaddressed Voice Call	-	Yes	Yes
Talk Group Call	-	Yes	Yes
Group Call Alert™	-	Yes	Yes
Talk Group Identification (TGID)	-	Yes	Yes
Selective Call (Individual Voice Call)	-	Yes	Yes
Selective Call Decode (Individual Voice Call)	-	Yes	Yes
PTT ID (Individual Identification)	-	Yes	Yes
Call Alert Encode/Decode	-	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	-	Yes	Yes
Telephone Interconnect	-	Yes	Yes
Unlimited	-	Yes	Yes
Selective Radio Inhibit	-	Yes	Yes
Radio Check	-	Yes	Yes
Status/Message	-	Yes	Yes
Trunking Type II Only Features			
Maximum Number of Trunked Systems-20			
Talkgroup Calls	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes
Dual Mode Scan	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only
Dispatcher Interrupt	No	No	No

Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes
Radio Trace	Yes	Yes	No
Reprogram Request	Yes	Yes	Yes

Each hardware model must be ordered with 1 of the System Enhancement Software Package options, Conventional or SmartZone.

SOFTWARE FEATURES SUPPORTED BY G51 "SmartZone®"			
	"Analog Operation" (G241)	"ASTRO Digital" (G806)	"ASTRO Digital" (G51/G806/G361)
		Non-Project 25	Project 25
		(3600 Baud)	(9600 Baud)
Trunking Type II Only Features			
Voice on Control	Future	Future	Yes
SmartZone Automatic Site Registration	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes
SmartZone Busy Override	No	No	No
SmartZone Preferred Site	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the XTL 2500 Mobile Radio Series. Separation of frequencies can be as wide as the allowable sub-band

per radio model with no degradation of any performance specifications. **If an incorrect antenna is used, degraded performance may be experienced.**

COMMON AIR INTERFACE

Conventional channels are P25 compliant with the ASTRO Digital CAI Operation Software (G806). ASTRO P25 Trunking Software (G361) **must** be added for P25 compliance in trunked systems.

PROJECT 25 ENCRYPTION

When ordering any of the Encryption Algorithm:

- **MUST** order the Encryption UCM Hardware (G159)
- ADP Privacy not supported by OTAR. ADP is digital P25 conventional / P25 trunking only.
- The DES-OFB and AES-OFB Encryption offered is compliant with Project 25 standards and does not support analog encryption operation.
  - REQUIRES the ASTRO Digital CAI (G806) to operate the DES-OFB and/or AES-OFB Encryption
- If ordering a Dual Encryption:
  - The non-OFB encryption (XL versions) can be operated in either analog or CAI digital mode but will not be Project 25 compliant.
- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.
  - Encryption UCM Hardware (G159) module may be ordered without an Encryption Algorithm for later upgrade in the field.

FIELD INSTALLED PROJECT 25 ENCRYPTION

The DES-OFB and AES-OFB Encryption offered is compliant with Project 25 standards. Operation of DES-OFB or AES-OFB encryption requires the ASTRO Digital CAI (G808). Radios can be upgraded via FLASHport to CAI operation.

- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

FIPS 140-2 COMPLIANCE

Encryption Modules equipped with AES are FIPS 140-2 compliant. ADP Privacy is not FIPS compliant. Further information regarding FIPS 140-2 certification may be found using the following links:

FIPS 140-2 Crypto Module Validation Program (CMVP)

NIST Cryptographic Module Validation Lists

Self-Quieting Spurs Frequency (MHz)

VHF 142.85 MHz

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhence and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on APX 7000 Dual Display Portable radios. Advanced Messaging is NOT supported on APX 7000 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for APX Mobiles Require: (Note: some control heads are not available on all main models)

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- P25 Conventional (G48)
- Packet Data Interface (W947)

  OR
- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G606)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking Software (G361)
- Packet Data Interface (W947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, pleese visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

FCC Information

Band/Modal	Power Output	Transmitter Certification (Type Acceptance)	Emissions	Applicable Rules

136-174 MHz	10 - 50 Watts	AZ492FT3806	8K10F1D, 8K10F1E, 11K0F3E, 16K0F3E, 20K0F1E, 20K0F1D	22, 74, 90

- **Except for itinerant and low-power incident channels.**

** Itinerant & Low-Power Incident Channels**	
Channel Number	Frequency Range (MHz)

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

Ç Canada personnel refer to Section A under CANADA ONLY Information.

Guideline

This price page consists of the following sections:

A. Required Main Models and Options for standard operation (Steps 1-9)

B. Control Station

C. Optional Features

D. Aftermarket Accessories

Section A: Required Main Model and Options

For standard Radio Operation **Steps 1 - 9** **must be** selected.

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

1: Main Model ***(Must Select)***

Description	Nomenclature	APC	Price
XTL 2500 VHF 136-174 MHZ, 10-50 W	M21KSM9PW1 N	518	$1,497.00

2: Operation Mode ***(Must Select One)***

Description	Nomenclature	APC	Price
ENH: SOFTWARE ASTRO READY ANALOG	G241	500	$0.00
NOT COMPATIBLE with Encryption Algorithm W969, W793, W797, G298, G851, or G843 when combined with a Trunking Software Option. DES-OFB is not operational in Analog Operation.			
ENH: XTL SOFTWARE ASTRO DIGITAL CAI OPERATION	G806	514	$515.00

3: System Enhancement Software ***(Must Select One)***

Description	Nomenclature	APC	Price
ENH: CONVENTIONAL OPERATION	G48	514	$275.00
ENH: SOFTWARE SMARTZONE/SINGLETONE	G51	514	$975.00

3b: Optional System Enhancement Software ***(Not Required)***

Description	Nomenclature	APC	Price
ENH: SMARTZONE OMNILNK MULTZONE SYSTEM SW	G173	856	$200.00
Automatic Zoning Across Zones, Zone Registration, Trespass Protection, Over the Air Site Alias, 32 Preferred Sites, FastStart and AllStart Call Setup.			

ADD: P25 TRUNKING SOFTWARE	G361	656	$300.00
When ordering this option G51 & G806 MUST be ordered. G173 is included at "NO CHARGE".			

4: Control Head Hardware *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: XTL2500 CONTROL HEAD	G442	514	$292.00
ADD: NO CONTROL HEAD NEEDED	G88	500	$0.00
Requires remote mounting option (G67 or G855)			

5: Control Head Software *(Must Always Select G444)*

Description	Nomenclature	APC	Price
ADD: ADD: CONTROL HEAD SOFTWARE	G444	514	$0.00
MUST ALWAYS SELECT THIS OPTION			

6: Mounting *(Must Select One)*

If a remote mount cable other then 5 meters (17ft) is desired for the G67, please reference the "Remote Mount Cables" section below in Section C: Optional Features

Description	Nomenclature	APC	Price
ADD: DASH MOUNT	G66	500	$125.00
Required for Control Station Operation			
ADD: REMOTE MOUNT	G67	500	$297.00
Required for Dual Control and High Power Radios			

7: Antenna *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: NO ANTENNA NEEDED	G89	500	$0.00
ANTENNA 1/4 WAVE WHIP ROOF TOP (136-144 MHZ)	G296	585	$13.50
Corresponding kit: HAD4006 Corresponding Motorcycle kit: RAD4002ARB			
ANTENNA 1/4 WAVE ROFF TOP VHF (144-150.8 MHZ)	G297	585	$13.50
Corresponding kit: HAD4007 Corresponding Motorcycle kit: RAD4003ARB			
ANTENNA 1/4 WAVE ROOF TOP VHF (150.8-162 MHZ)	G299	585	$19.50
Corresponding kit: HAD4008 Corresponding Motorcycle kit: RAD4004ARB			
ANTENNA 1/4 WAVE ROOF TOP VHF (162-174 MHZ)	G300	585	$13.50
Corresponding kit: HAD4009 Corresponding Motorcycle kit: RAD4005ARB.			
ANTENNA, VHF (136-174MHZ, 3.4 BANDWIDTH) 3DB ROOF TOP	G301	585	$58.50
Not Compatible with Motorcycle Corresponding kit: HAD4022A.			
ADD: 1/4 WAVE BROADBAND ANT 146-174 MHZ	G829	585	$64.00
Not Compatible with Motorcycle Corresponding kit: HAD4017.			

8: Microphones *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED	G90	500	$0.00
Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ADD: PALM MICROPHONE	W22	500	$72.00
Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090			
ADD: KEYPAD MIC (GCAI)	W20	514	$180.00
Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079			
ADD: HANDSET/HANGUP GCAI	G874	514	$285.00
Coiled Cable with Toggle Switch Accessory Kit: HLN1457A			
ADD: CONTROL STATION DESK MICROPHONE	W382	500	$189.00
Dash Mount Required Corresponding Kit: RMN5070			

ADD: MODEL III KEYPAD TELEPHONE HANDSET Corresponding kit: HMN4097A	GA00221	514	$295.00

9: Speakers ***(Must Select One)***

******G142 NO SPEAKER Required for Control Station******

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$60.00
ADD: INCREASED AUDIO POWER 13W Corresponding kit: HSN4032. NOT COMPATIBLE with W665 Control Station and Motorcycle Configuration.	W432	500	$71.50

Section B: Control Station

CONTROL STATION OPERATION

I. First, you must review your selection of the following options from "Section 1: Required Options".

- Step 1 *(Note: Main Model)*
- Step 2 *(Note: All listed options are compliant)*
- Step 3 *(Note: All listed options are compliant)*
- Step 4 *(Note: Must select G442. XTL 2500 Control Head is competible with Control Station Application).*
- Step 5 *(Note: Must Select G444. The XTL 2500 Control Head Software is competible with Control Station Application).*
- Step 6 *(Note: Must Select G66. Control Station operation is only offered in Dash mount configuration).*
- Step 7 *(Note: All listed options are compliant).*
- Step 8 *(Note: Select desired microphone option and if no microphone is needed, G90 must be selected).*
- Step 9 *(Note: Must Select G142 - No Speaker Needed).*

II. You Must Select ONE of the Following "Specific Control Station Options":

SPECIFIC CONTROL STATION OPTIONS

Control Station Operation and Power Supply ***(Must Select BOTH)***

Description	Nomenclature	APC	Price
ADD: CONTROL STATION POWER SUPPLY Corresponding kit: HPN4007	G91	500	$269.00
ADD: CONTROL STATION OPERATION For DASH MOUNT radios ONLY (G66)!! Not compatible with W3, or W9 control head options. G665 includes a base tray and a speaker; therefore G142 has to be ordered to eliminate extra Speaker. Requires a Power Supply (G91 can be ordered as a Power Supply). Requires one of the Microphone Options: G90, W22 or W382. Corresponding kit: HLN6042	W665	500	$70.00

III. Features listed in "Section C: Optional Features" are optional, if applicable. Please read the option's description to determine compatibility.

Section C: Optional Features

The following features are **optional** and will provide additional capabilities, if required.

System Enhancement Options

Deecription	Nomenclature	APC	Price
ENH: ENHANCED DIGITAL ID DISPLAY a numeric character unit to unit display. NOTE: This option is required to display Radio ID or Radio Alias on the display for analog and digital conventional and trunking configurations.	G114	500	$75.00
ENH: RADIO TRACE AND REMOTE MONITOR	G170	500	$75.00

Note: G170 option for Radio Trace/Remote Monitor is not compatible with W3 Control Head and G474 (Multi-Radio).
For Remote Monitor with XTL 5000 with W4/W5/W7/W8 you must order mic option G787.
For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.

ADD: CONVENTIONAL VOTING SCAN ASTRO	G387	500	$200.00
This feature allows for voting of the Conventional Channels ONLY.			
ADD: TRUNKED ONE TOUCH BUTTON	G683	500	$150.00
ENH: OVER THE AIR PROGRAMMING	G996	518	$100.00
Compatible with P25 Trunking only. Requires W947 Data option. To do in field POP25 programming must use Advanced System Key (DVN4046A)			
ADD: XTL2500 RADIO AUTHENTICATION	W391	514	$100.00

Encryption Hardware and Software

Description	Nomenclature	APC	Price
ADD: ENCRYPTION UCM	G159	500	$150.00
~~REQUIRED for ANY encryption combination of Hardware Based Algorithms.~~ Not Compatible with G193. CUSTOMERS USING THE FOLLOWING FREQUENCIES MUST ADD FREE OPTION "QA00351AA" (ENH: UCM SP TRIGGER) due to a known Self Quiting issue for radios with the standard UCM. UHF SELF-QUIETING SPURS: UHF RANGE 1 FREQUENCIES: 383.975 MHz 393.2125 MHz 395.975 MHz 432 MHz 456 MHz UHF RANGE 2 FREQUENCIES: 456 MHz 479.975 MHz 480 MHz			
ADD: KEY RETENTION 30 SECONDS	G336	500	$50.00
G159 REQUIRED			
ADD: MULTIPLE KEY ENCRYPTION OPERATION	W969	500	$330.00
REQUIRED when using more than one encryption algorithm or encryption key.			
ENH: CONVENTIONAL TACTICAL REKEY WITH MULTIKEY	H04	514	$350.00
Must Order IV&D(Q947)			

Encryption Algorithms

Description	Nomenclature	APC	Price
ADD: ADP ENCRYPTION	G113	526	$349.00
REQUIRES G159. INCLUDES W969 Multikey. ORDER G194 if need ADP with DES/DES-XL-DES-OFB. NOT AVAILABLE with 3600 Trunking and Analog Conventional software Packages. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G806 in the Digital Conventional mode ONLY.			
Description	**Nomenclature**	**APC**	**Price**
ADD: ADP SOFTWARE DSP BASED CRYPTO	G193	500	$10.00
REQUIRES: G806 Digital Operation DOES NOT REQUIRE: G159 UCM or G77/G78 Encryption Warranty. Use standard warranty options if needed. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G806 in the Digital Conventional mode ONLY. .Includes 8 non-indexing encryption keys..			
Description	**Nomenclature**	**APC**	**Price**
AES ENCRYPTION-UCM	G843	412	$625.00
AES operates in digital mode only. NOT compatible with G241 ENH: SOFTWARE ASTRO READY ANALOG			
Description	**Nomenclature**	**APC**	**Price**
ADD: DES, DES-XL, DES-OFB ENCRYPTION - UCM	G825	412	$749.00
The Multikey (W969) or OTAR (G298) are only required when more than 1 key or 1 algorithm is programmed.			
Description	**Nomenclature**	**APC**	**Price**
ADD: DVI-XL ENCRYPTION	W793	500	$520.00
G159 is REQUIRED when ORDERING			
Description	**Nomenclature**	**APC**	**Price**
ADD: DVP-XL ENCRYPTION	W797	500	$467.00
G159 is REQUIRED when ORDERING			

Remote Mount Cables

(The 5 meter (17 FT) Cable Ships Standard)

Description	Nomenclature	APC	Price

ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT) ***For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio*** Corresponding kit: HKN6164	G582	514	$65.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G679	514	$55.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00

DEK

Description	Nomenclature	APC	Price
ADD: STATUS MESSAGE 8 MESSAGES NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration. CORRESPONOING KIT: H1838A	W355	500	$475.00
ADD: DDE STATUS MESSAGES 16 NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration. CORRESPONDING KIT: H1839A	W374	500	$650.00

Direct Mode Entry

Description	Nomenclature	APC	Price
ADD: 8 MODE DIRECT ENTRY ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1835A	W599	500	$180.00
ADD: 16 MODE DIRECT ENTRY ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1836A	W614	500	$360.00
ADD: 24 MODE DIRECT ENTRY NOT COMPATIBLE with W269 Siran/PA. 9600 Systems offer ONLY "Status" and not "Message". ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1837A	W615	500	$540.00

WHELEN SIREN (MOTOROLA COMPATIBLE)

NOTE: THE NEW SIREN IS COMPATIBLE WITH APX AND XTL MOBILES WITH "O" SERIES OR M5 CONTROL HEADS ONLY. THIS SIREN IS NOT COMPATIBLE WITH ANY "W" SERIES CONTROL HEADS

THE SIREN BASE MODEL TT2592, CABLE TT05707 AND THE SIREN MOUNTING HARDWARE TT0507 MUST ALWAYS BE ORDERED (THIS SIREN IS ORDERED AS A SEPARATE LINE ITEM, TT2592 IS THE MODEL)

DEK OPTIONS ARE AVAILABLE AS OPTIONS TO THE SUBSCRIBER AS SHOWN BELOW

Description	Nomenclature	APC	Price
WHELEN/MOTOROLA SIREN	TT2592	656	$395.00
SIREN HARDWARE INSTALL KIT	TT05707AA	656	$20.00
SIREN TO RADIO CABLE	TT05706AA	656	$65.00
SIREN TO DEK CABLE - O3 CONTROL HEAD ONLY	TT05709AA	656	$78.00

SIREN DEK OPTIONS

ADD: DEK FOR WHELEN SIREN W/ O3 CH ONLY	GA00812	656	$105.00
ADD: DEK FOR WHELEN SIREN	GA00814	656	$105.00

Auxiliary Switches

Description	Nomenclature	APC	Price
ADD: AUXILIARY SWITCH PANEL Corresponding kit: HLN1196. G67 REQUIRED. NOT compatible with W3 control head or motorcycle.	W591	500	$165.00

Alarm

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAYS AND CABLE For either HORN or LIGHTS. NOT both	W116	500	$75.00

Emergency

Description	Nomenclature	APC	Price
ADD: PTT FOOTSWITCH Requires W872 Visor Mic. Kit Number: GLN7278B	G235	514	$51.00
ADD: EXT EMERGENCY PUSHBUTTON Corresponding kit: HLN5131	W688	500	$56.00

Frequency and Squelch Codes

Description	Nomenclature	APC	Price
ENH: FACTORY PROGRAMMING	W844	500	$0.00

Packet Data Interface / Data Cables

Description	Nomenclature	APC	Price
ADD: RS232 DATA INTFC CABLE-DASH 6 FT RS232 DATA CABLE Corresponding kit: HKN6160A.	G303	500	$50.00
RS232 DATA INTFC CABLE-TRUNK 20 FT RS232 DATA CABLE Corresponding kit: HKN6161A.	G304	500	$50.00
ADD: RS232 & IV&D PACKET DATA INTERFACE This option is ONLY Operational on Digital Trunking and Digital Conventional systems!! INCLUDES the DLM Application. This option does not include Cables. G303 or G304 should be ordered separately.	W947	500	$200.00
USB DATA INTFC CABLE-DASH 6 FT USB W/IGNITION SENSE Corresponding kit: HKN6163B.	G308	500	$50.00

RF Modem

(Supported for 9600 Trunking only)

Description	Nomenclature	APC	Price
ENH: ENABLE RF MODEM The XTL mobiles do not support Site Lens or System Watch. Therefore, the APX RF Modem function does not support the legacy System Watch or Site Lens applications. The APX RF Modem supports Conventional or 9600 Trunking only. Enabling the RF Modem in conventional mode allows provisioned APX portables to pass accountability data through the portable option Q445.	G319	500	$0.00

Service Options (These Service options are NOT applicable for Asia Pac)

REPAIR SERVICE ADVANTAGE
Provides for extended hardware repair coverage beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$64.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00316	185	$246.00
ENH: 3 YR CANADA EXTND WRNTY XTL	GA00313	386	$177.00
ENH: 5 YR CANADA EXTND WRNTY XTL	GA00316	386	$240.00

REPAIR SERVICE ADVANTAGE (ENCRYPTED)
Provides for extended hardware repair coverage, including encryption, beginning after the standard warranty period. Repairs will be made only at the designated Motorola rapair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G77	185	$72.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G78	185	$137.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	GA00232	185	$205.00
ENH: 3 YR CANADA ENCR EXT WRNTY XTL	GA00314	388	$181.00
ENH: 5 YR CANADA ENCR EXT WRNTY XTL	GA00317	386	$244.00

REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00
ENH: 3 YEAR ENCRYPTED RSA (COMPREHENSIVE)	GA00255AA	185	$302.00

Test Results

Description	Nomenclature	APC	Price
ADD: PRINTED TEST RESULTS	G799	500	$0.00

Amplifier

******UHF and VHF Mid and High Power Radios Only******

Description	Nomenclature	APC	Price
ADD: RF PRE-AMPLIFIER	W12	585	$66.00

Miscellaneous

Description	Nomenclature	APC	Price
ADD: KEY LOCK MOUNT	W81	500	$33.00

Section D: Aftermarket Accessories

Algorithm Kits

XTL5000 AES258, ADP	NNTN8328A	585	$997.00
XTL5000 DES-XL, DES-OFB, ADP	NNTN8327A	585	$998.00
XTL5000 DES-XL, DES-OFB, AES256, AD	NNTN8326A	585	$1,499.00
XTL5000 AES256	NNTN8331A	456	$795.00
XTL5000 DVP-XL	NNTN8323A	585	$715.00
XTL5000 DES-XL, DES-OFB	NNTN6335A	585	$840.00

Antennas

Description	Nomenclature	APC	Price
ANTENNA, VHF (136-144MHZ) 1/4 WAVE ROOF TOP High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohms, nominal	HAD4006	554	$19.50
ANTENNA, VHF (144-150.8 MHZ) 1/4 WAVE ROOF TOP High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohms, nominal	HAD4007	554	$19.50
ANTENNA, VHF (150.8-162 MHZ) 1/4 WAVE ROOF TOP High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohms, nominal	HAD4008	554	$19.50
ANTENNA, VHF (162-174 MHZ) 1/4 WAVE ROOF TOP High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohms, nominal	HAD4009	554	$19.50
ANTENNA VHF 1/4 WAVE	RAD4002ARB	554	$100.00

ANTENNA VHF 1/4 WAVE	RAD4004ARB	554	$100.00
ANTENNA, VHF (136-174 MHZ 3.4 MHZ BANDWITH) 3DB ROOF TOP	RAD4010ARB	554	$82.00
High Band Base Loaded Antenna - Mini UHF connector, Roof Mount, RG58A/u Cable, Rugged Duty, Frequency Range 136-174 MHz., Power: 150 Watts Max., Gain: 3 dB, nominal, VSWR: Less than 1.5:1, Impedance: 50 Ohms, nominal			

Cables

AUDIO CABLE ADAPTER	HKN6158	500	$49.00
ADAPTER CABLE DATA	HKN6159	500	$49.00

Cables (Remote Mount)

CABLE, REMOTE MOUNT, 75 FT	HKN6166	514	$80.00
CABLE, REMOTE MOUNT, 115 FT	HKN6165	514	$105.00
CABLE,REMOTE MOUNT,131 FT	HKN6164	514	$122.00

Control Station

Description	Nomenclature	APC	Price
MOBILE DESK TRAY	HLN6042	617	$77.00
PS 14V 10A 117/240 VAC.	HPN4007C	500	$296.00

Customer Programming Software

Data

CABLE KIT 20' DATA	HKN6161	476	$50.00
RS232 Data Interface Cable - REMOTE			

Manuals

Description	Nomenclature	APC	Price
XTL 2500 M5 MANUAL	HLN1460D	514	$12.00

Microphones

HANDSET/HANGUP (HANGUP CUP)	HLN1457	706	$285.00
MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	706	$295.00
XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00
AS. SPECTRA & XTL5000 DESKTOP MIC	RMN5070A	706	$172.00

Speakers

Description	Nomenclature	APC	Price
EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	HSN4038	476	$60.50
MCS EXT SPKR 13W	HSN4032B	500	$71.50

Bull Horns for Sirene and Public Address

Description	Nomenclature	APC	Price
SPEAKER SIREN, ROUND W/CHROME & BLACK	TDN6251	706	$329.00
SPEAKER RECTANGULAR WITH CHROME FINISH	TDN6252	706	$265.00
SPEAKER UNDERHOOD WITH GRAY FINISH	TDN6253	706	$220.00
SPEAKER ROUND WITH GRAY FINISH	TDN6254	706	$248.00

Miscelleneous

Description	Nomenclature	APC	Price
WILDCARD	HLN1196	412	$165.00
AUXILIARY SWITCH PANEL (W591-W9)	HLN1342	617	$165.00

Section E: Vehicle Location Solution

Vehicle Location Solution

Vehicle location or GPS is now available on the ASTRO 25 XTL 2500 mobile radio.

~~The TrimFleet ™ GPS mobile units provide a versatile and economical platform for mobile positioning applications. Using state-of-the-art GPS~~ receiver technology, the TrimFleet GPS receiver unit has been optimized for vehicle installation and operation, providing reliable vehicle position, direction, speed, time and status in any weather, anywhere in the world.

The TrimFleet receiver contains a 12-channel GPS module and an (optional) angular rate sensor module. The TrimFleet receiver connects directly to in-vehicle laptops/workstations as well as VRM and XTL radios. The TrimFleet GPS receiver outputs positions when in GPS coverage via either of its RS-232C serial ports in National Marine Electronics Association Protocol (NMEA), Trimble ASCII Interface Protocol (TAIP) and Point to Point Protocol (PPP) formats. The TrimFleet receiver may be configured to send the position data in either protocol via the two RS-232C data ports. Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

The TrimFleet DRU Plus may be equipped with an optional internal module to provide dead reckoned position data while outside of GPS coverage. This is accomplished through the use of advanced gyroscopic technology in combination with connections to the vehicle speed sensor and vehicle direction signal (forward or reverse.) Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

I/O PORTS

The TrimFleet DRU Plus provides two RS232C compatible communication ports that may be connected to external devices. One port provides a DE-9 female DCE connection, and the other port provides a DE-9 female DTE connection. The ports may be configured individually for baud rates between 110 and 115.2K baud. Both ports support NMEA and TAIP protocols. The default configuration for both ports is 9600 baud TAIP.

Also provided is support for PPP over RS232C on Port 1. An IP capable XTL 2500 radio may be interfaced to the port to allow wireless transmission of TAIP messages to an AVL server. The TAIP messages will be encapsulated in UDP packets and sent to a configurable destination IP address and port. TAIP messages may also be sent back to the TrimFleet DRU Plus by the AVL application to modify reporting rates and query current location or status.

Vehicle location is available only on ASTRO Conventional and Trunked IV&D Systems. Subscribers must have version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software.

Digital Conventional Ordering requirements for XTL 2500 Mobile:

- Requires Control Head (G442)
- ASTRO Digital CAI Operation (G806)
- Conventional Operation (G48)
- Packet Data Interface (W947)
- Mid Power RS232 Cable (G303 Dash / G304 Remote) *(Hooks to the J2 rectangular and DB9 connector)*
- High Power RS232 Cable (HKN6122) *(Hooks to the DB25 connector and the DB9 connector)*

P25 Trunking Ordering requirements for XTL 2500 Mobile:

- Requires Control Head (G442)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking 9600 Software (G361)
- Packet Data Interface (W947)
- Mid Power RS232 Cable (G303 Dash / G304 Remote) *(Hooks to the J2 rectangular and DB9 connector)*
- High Power RS232 Cable (HKN6122) *(Hooks to the DB25 connector and the DB9 connector)*

Description	Nomenclature	APC	Price
TRIMFLEET DRU PLUS (W/DR & POWER CABLE)	DDN9439	222	$745.00

Description	Nomenclature	APC	Price
TRIMFLEET APU (W/POWER CABLE)	DDN9440	222	$620.00

Description	Nomenclature	APC	Price
TRIMFLEET GPS ANTENNA WITH CABLE	DDN9474	222	$99.00

Section F: Retrofit Mounting Kits

PLEASE READ ALL ALLIED MODEL AND OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION.

Retrofit Mounting Kits

Remote to Dash

Converts an existing remote mounted XTL 2500 mobile radio to a dash mounted radio. Applicable to Low/Mid power models.

Description	Nomenclature	APC	Price
REMOTE TO DASH RETROFIT KIT FOR O5 OR XTL2500 Contains dash mount headbridge hardware. Does not include transciever trunion. Does not include a control head.	H1817	514	$75.00

Dash to Remote

Converts an existing dash mounted XTL 2500 mobile radio to a remote mounted radio. Applicable to Low/Mid power models.

If you are retrofitting XTL 2500 radios that shipped AFTER 7/1/06, order H1818.

If you are retrofitting XTL 2500 radios that shipped BEFORE 7/1/06, order H1825.

Description	Nomenclature	APC	Price
O5/M5 DASH TO O5/M5 REMOTE RETROFIT KIT Contains rear housing for remote O5, O5 control head remote mounting hardware, remote O5 power cable, remote transciever faceplate. Remote cable available as option. Does not include transciever trunion. Does note include O5 control head.	H1818	514	$325.00

Remote Mount Cables

(Cable option is NOT required. If cable option is ordered, select ONLY one option.)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT)	G879	514	$55.00

Corresponding kit: HKN6165 ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT) ***For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio*** Corresponding kit: HKN6164	G582	514	$65.00

Section G: Remote Control Head Replacement / Dual Control Head Retrofit Kit

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION.

Remote Control Head Replacement AND Dual Control Head Retrofit Kit

The XTL 2500 M5 Remote Control Head Replacement AND Dual Control Head Retrofit provides / requires the following:

- QTY 1: **REMOTE** mount control head assembly that includes a control head + flex cable + control head interface board rear housing (CHIB)
- Qty 1: Remote Control Head Power cable (HKN6188)
- Qty 1: Remote Control Head Mounting trunion and hardware
- Qty 1: Manual CD and dust cover kit
- OPTION: Muat select a microphone option
- OPTION: Must select a speaker option
- OPTION: Must select a remote cable option

*** IF YOU ARE ADDING A CONTROL HEAD TO CONVERT A SINGLE CONTROL REMOTE MOUNT RADIO TO A DUAL CONTROL, THEN YOU MUST MAKE SURE THE RADIO HAD VERSION 6.9 SOFTWARE OR GREATER.

THE ALLIED SALES MODEL BELOW DOES NOT INCLUDE A FLASH FIRMWARE REFRESH. PLEASE SEE THE SUBSCRIBER FLASHPORT SOFTWARE UPGRADE PRICE PAGE ***

Description	Nomenclature	APC	Price
M5 REMOTE CTRL HD/CHIB REPLACEMENT / ADDITION	H1827	514	$570.00

Microphones

(Must Select One and Only One)

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.	G90	500	$0.00
ADD: PALM MICROPHONE Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090	W22	500	$72.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079	W20	514	$180.00

Speekers ***(Must Select One)***

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$60.00
ADD: INCREASED AUDIO POWER 13W Corresponding kit: HSN4032. NOT COMPATIBLE with W88S Control Station and Motorcycle Configuration.	W432	500	$71.50

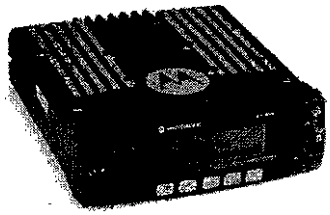
Remote Mount Cables

***** For Dual configurations, the total cable length may NOT be greater that 131 ft (40 meters) *****

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6185	G879	514	$55.00
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT) ***For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio*** Corresponding kit: HKN6184	G582	514	$65.00

Data Compiled 16-May-2013 using DUP and all prices in USD



ASTRO® Digital XTL 2500 Mobile
764 - 870 MHz Band

Secure and Trunked Radio Systems

Ship Card

General Information

The XTL 2500 Mobile Line offers 1 radio hardware model:

Hardware Mode	Modes	Alphanumeric Display
		Lines/Characters
		per Line
CH	1000	4/14

OPERATING MODES

XTL 2500 Radio Models are capable of operating in three different voice communication modes:

- normal analog (clear voice)
- 3.6kb ASTRO Digital (both clear and coded voice)
- 9.6KB ASTRO Digital (both clear and coded voice)

The mode of operation is programmed on a channel-by-channel basis. The XTL 2500 is capable of transmitting clear analog voice or clear (unencrypted) ASTRO digital voice, depending on the channel programming. XTL 2500 radio functions include ASTRO Digital signaling and digital coding.

Please note that XTL radios do NOT support FRED.

Each hardware model must be ordered with 1 of the System Enhancement Software Package options.
The matrix below indicates standard Trunking features for SmartZone (G51) System Packages. SmartZone features listed in the lower matrix are available in the (G51) package only. Radio Wide Features and Standard Conventional Features are listed above. System Enhancement Options can be added to the packages shown below. Refer to the System Enhancement Options for compatibility.

COMMON SOFTWARE FEATURES SUPPORTED BY G51 "SmartZone®"			
	"Analog Operation"(G241)	"ASTRO Digital"(G606)	"ASTRO Digital" (G51/G606/G361)
		Non-Project 25	Project 25
		(3600 Baud)	(9600 Baud)
RADIO WIDE FEATURES			
Maximum Modes			
XTL 2500 Control Head	1000	1000	1000
Analog and Digital Operation	-	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes
ADP Encryption	No	Yes	Yes
Encryption Capable	Yes	Yes	Yes
One Touch Operation	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES			
Conventional Features are additional radio wide features beyond those specified in the APCO Project 25 documents.			
CSQ/PL/DPL	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes

Smart PTT	Yes	Yes	Yes
Monitor	Yes	Yes	Yes
DTMF Tone Generation	Future	Future	Future
MPL	Future	N/A	N/A
MDC PTT ID	Yes	Yes	Yes
MDC Selective Radio Inhibit (Decode Only)	Yes	Yes	Yes
MDC Call Alert (Encode/Decode)	Yes	Yes	Yes
MDC Radio Check (Decode Only)	Yes	Yes	Yes
MDC Voice Selective Call (Encode/Decode)	Yes	Yes	Yes
MDC Remote Monitor (Decode Only)	Yes	Yes	Yes
MDC Call Lists (Call Alert/Select Call)	Yes	Yes	Yes
MDC Emergency	Yes	Yes	Yes
MDC Silent Emergency (Encode)	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES			
These features are APCO Project 25 Interoperable Features when used in the ASTRO Digital CAI Mode (G806)			
Unaddressed Voice Call	-	Yes	Yes
Talk Group Call	-	Yes	Yes
Group Call Alert™	-	Yes	Yes
Talk Group Identification (TGID)	-	Yes	Yes
Selective Call (Individual Voice Call)	-	Yes	Yes
Selective Call Decode (Individual Voice Call)	-	Yes	Yes
PTT ID (Individual Identification)	-	Yes	Yes
Call Alert Encode/Decode	-	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	-	Yes	Yes
Telephone Interconnect	-	Yes	Yes
Unlimited	-	Yes	Yes
Selective Radio Inhibit	-	Yes	Yes
Radio Check	-	Yes	Yes
Status/Message	-	Yes	Yes
Trunking Type II Only Features			
Maximum Number of Trunked Systems-20			
Talkgroup Calls	Yes	Yes	Yes
PTT ID	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes
Dual Mode Scan	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only
Dispatcher Interrupt	No	No	No
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes
Radio Trace	Yes	Yes	No
Reprogram Request	Yes	Yes	Yes

Each hardware model must be ordered with 1 of the System Enhancement Software Package options, Conventional or SmartZone.

SOFTWARE FEATURES SUPPORTED BY G51 "SmartZone®"			
	"Analog Operation" (G241)	"ASTRO Digital" (G806)	"ASTRO Digital" (G51/G806/G361)
		Non-Project 25	Project 25
		(3600 Baud)	(9600 Baud)
Trunking Type II Only Features			
Voice on Control	Future	Future	Yes
SmartZone Automatic Site Registration	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes
SmartZone Busy Override	No	No	No

SmartZone Preferred Site	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes

CHANNEL SPACING

There are no maximum frequency seperation conditions that must be adhered to on the XTL 2500 Mobile Radio Series. Seperation of frequencies can be as wide as the allowable sub-band

per radio model with no degradation of any performence specifications. **If an incorrect antenna is used, degraded performance may be experienced.**

COMMON AIR INTERFACE

Conventional channels are P25 compliant with the ASTRO Digital CAI Operation Software (G806). ASTRO P25 Trunking Software (G361) must be added for P25 complience in trunked systems.

PROJECT 25 ENCRYPTION

When ordering any of the Encryption Algorithm:

- **MUST** order the Encryption UCM Hardware (G159)
- ADP Privacy not supported by OTAR. ADP is digital P25 conventional / P25 trunking only.
- The DES-OFB and AES-OFB Encryption offered is compliant with Project 25 standards and does not support analog encryption operation.
  - REQUIRES the ASTRO Digital CAI (G806) to operate the DES-OFB or AES-OFB Encryption
- If ordering a non-OFB (XL version) Encryption:
  - The non-OFB encryption (XL versions) can be operated in either analog or CAI digital mode but will not be Project 25 compliant.
- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.
  - Encryption UCM Hardware (G159) module may be ordered without an Encryption Algorithm for later upgrade in the field.

FIELD INSTALLED PROJECT 25 ENCRYPTION

The DES-OFB and AES-OFB Encryption offered is compliant with Project 25 standards. Operation of DES-OFB and/or AES-OFB encryption requires the ASTRO Digital CAI (G806). Radios can be upgraded via FLASHport to CAI operation.

- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.

FIPS 140-2 COMPLIANCE

Encryption Modules equipped with AES are FIPS 140-2 compliant. ADP Privacy is not FIPS compliant. Further information regarding FIPS 140-2 certification may be found using the following links:

FIPS 140-2 Crypto Module Validation Program (CMVP)

NIST Cryptographic Module Validation Lists

ASTRO Advanced Meseaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on APX 7000 Dual Display Portable radios. Advanced Messaging is NOT supported on APX 7000 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for APX Mobiles Require: (Note: some control heads are not available on all main models)

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- P25 Conventional (G48)
- Packet Data Interface (W947)

OR

- O9, O7, O5, O3 or O2 Control Heads
  - With D2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking Software (G361)
- Packet Data Interface (W947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

FCC Information

Band/Model	Power Output	Transmitter Certification (Type Acceptance)	Emissions	Applicable Rules
700 (764 - 806 MHz)* 800 (806 - 869 MHz) 700 (Itinerant channels) **	10 - 35 Watts 10 - 35 Watts 2 Watts	AZ492FT5823	8K10F1D, 8K10F1E, 11K0F3E, 16K0F3E, 20K0F1E, 20K0F1D	22, 74, 90

- Except for Itinerant and low-power incident channels.

** Itinerant & Low-Power Incident Channels	
Channel Number	Frequency Range (MHz)
1 - 12	764 - 784.075
949 - 960	775.925 - 776
961 - 972	794 - 794.075
1909 - 1920	805.925 - 806

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

Ç Canada personnel refer to Section A under CANADA ONLY information.

Guideline

This price page consists of the following sections:

A. Required Main Models and Options for standard operation (Steps 1-9)

B. Control Station

C. Optional Features

D. Aftermarket Accessories

Section A: Required Main Model and Options

For standard Radio Operation **Steps 1 - 9 must be** selected.

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

1: Main Model *(Must Select)*

Description	Nomenclature	APC	Price
XTL 2500 764-870MHZ, 10-35W	M21URM8PW1 N	514	$1,497.00

2: Operation Mode *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: SOFTWARE ASTRO READY ANALOG	G241	500	$0.00
NOT COMPATIBLE with Encryption Algorithm W869, W793, W797, G298, G851, or G843 when combined with a Trunking Software Option. DES-OFB is not operational in Analog Operation.			
ENH: XTL SOFTWARE ASTRO DIGITAL CAI OPERATION	G808	514	$515.00

3: System Enhancement Software *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: CONVENTIONAL OPERATION	G48	514	$275.00
ENH: SOFTWARE SMARTZONE/SINGLETONE	G51	514	$975.00

3b: Optional System Enhancement Software *(Not Required)*

Description	Nomenclature	APC	Price
ENH: SMARTZONE OMNILNK MULTZONE SYSTEM SW	G173	656	$200.00
Automatic Zoning Across Zones, Zone Registration, Trespass Protection, Over the Air Site Alias, 32 Preferred Sites, FastStart and AllStart Call Setup.			
ADD: P25 TRUNKING SOFTWARE	G361	656	$300.00
When ordering this option G51 & G808 MUST be ordered. G173 is included at "NO CHARGE".			

4: Control Head Hardware *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: XTL2500 CONTROL HEAD	G442	514	$292.00
ADD: NO CONTROL HEAD NEEDED	G68	500	$0.00
Requires remote mounting option (G67 or G855)			

6: Control Head Software *(Must Always Select G444)*

Description	Nomenclature	APC	Price
ADD: ADD: CONTROL HEAD SOFTWARE	G444	514	$0.00
MUST ALWAYS SELECT THIS OPTION			

8: Mounting *(Must Select One)*

"If a remote mount cable other than 5 meters (17ft) is desired for the G67, please reference the "Remote Mount Cables" section below in Section C: Optional Features"

Description	Nomenclature	APC	Price
ADD: DASH MOUNT	G66	500	$125.00
Required for Control Station Operation			
ADD: REMOTE MOUNT	G67	500	$297.00
Required for Dual Control and High Power Radios			

7: Antenna *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: NO ANTENNA NEEDED	G89	500	$0.00
ADD: ANTENNA 3DB LOW-PROFILE 764-870MHZ	G174	500	$43.00
Corresponding kit: HAF4013 Corresponding Motorcycle kit: HAF4018			
ADD: ANTENNA 3DB ELEVATED FEED 764-870MHZ	G175	500	$75.00
NOT Compatible with Motorcycle. Corresponding kit: HAF4014.			
ADD: ANTENNA 1/4 WAVE 764-870MHZ	G335	500	$14.00
Corresponding kit: HAF4016 Corresponding Motorcycle kit: HAF4015 **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.**			
ALT: ANTENNA 3DB GAIN 764-870MMZ	W464	500	$38.00
Not compatible with Motorcycle. Corresponding kit: HAF4017.			

8: Microphones *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED	G90	500	$0.00
Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ADD: PALM MICROPHONE	W22	500	$72.00
Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090			
ADD: KEYPAD MIC (GCAI)	W20	514	$180.00
Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option.			

Required for Emergency Hot Mic Operation.
Corresponding kit: HMN4079

item=w382,4#]			
ADD: HANDSET/HANGUP GCAI Coiled Cable with Toggle Switch Accessory Kit: HLN1457A	G874	514	$285.00
ADD: CONTROL STATION DESK MICROPHONE Dash Mount Required Corresponding Kit: RMN5070	W382	500	$169.00
ADD: MODEL III KEYPAD TELEPHONE HANDSET Corresponding kit: HMN4097A	GA00221	514	$295.00

9: Speakers ***(Must Select One)***

****G142 NO SPEAKER Required for Control Station****

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: H6N4031.	B18	500	$60.00
ADD: INCREASED AUDIO POWER 13W Corresponding kit: H8N4032. NOT COMPATIBLE with W665 Control Station and Motorcycle Configuration.	W432	500	$71.50

Section B: Control Station

CONTROL STATION OPERATION

I. First, you must review your selection of the following options from "Section 1: Required Options".

- Step 1 *(Note: Main Model)*
- Step 2 *(Note: All listed options are compliant)*
- Step 3 *(Note: All listed options are compliant)*
- Step 4 *(Note: Must select G442. XTL 2500 Control Head is compatible with Control Station Application).*
- Step 5 *(Note: Must Select G444. The XTL 2500 Control Head Software is compatible with Control Station Application).*
- Step 6 *(Note: Must Select G66. Control Station operation is only offered in Dash mount configuration).*
- Step 7 *(Note: All listed options are compliant).*
- Step 8 *(Note: Select desired microphone option and if no microphone is needed, G90 must be selected).*
- Step 9 *(Note: Must Select G142 - No Speeker Needed).*

II. You Must Select ONE of the Following "Specific Control Station Options":

SPECIFIC CONTROL STATION OPTIONS

Control Station Operation and Power Supply ***(Must Select BOTH)***

Description	Nomenclature	APC	Price
ADD: CONTROL STATION POWER SUPPLY Corresponding kit: HPN4007	G91	500	$289.00
ADD: CONTROL STATION OPERATION For DASH MOUNT radios ONLY (G66)!! Not compatible with W3, or W9 control head options. G665 includes a base tray and a speaker; therefore G142 has to be ordered to eliminate extra Speaker. Requires a Power Supply (G91 can be ordered as a Power Supply). Requires one of the Microphone Options: G90, W22 or W382. Corresponding kit: HLN8042	W665	500	$70.00

III. Features listed in "Section C: Optional Features" are optional, if applicable. Please read the option's description to determine compatibility.

Section C: Optional Features

The following features are **optional** and will provide additional capabilities, if required.

System Enhancement Options

Description	Nomenclature	APC	Price
ENH: ENHANCED DIGITAL ID DISPLAY 8 numeric character unit to unit display. NOTE: This option is required to display Radio ID or Radio Alias on the display for analog and digital conventional and trunking configurations.	G114	500	$75.00
ENH: RADIO TRACE AND REMOTE MONITOR Note: G170 option for Radio Trace/Remote Monitor is not compatible with W3 Control Head and G474 (Multi-Radio). For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.	G170	500	$75.00
ADD: CONVENTIONAL VOTING SCAN ASTRO	G387	500	$200.00

This feature allows for voting of the Conventional Channels ONLY.

ADD: TRUNKED ONE TOUCH BUTTON	G683	500	$150.00
ENH: OVER THE AIR PROGRAMMING	G996	516	$100.00
Compatible with P25 Trunking only. Requires W947 Data option. To do in field POP25 programming must use Advanced System Key (DVN4046A)			
AOD: XTL2500 RADIO AUTHENTICATION	W391	514	$100.00

Encryption Hardware and Software

Description	Nomenclature	APC	Price
ADD: ENCRYPTION UCM	G159	500	$150.00
REQUIRED for ANY encryption combination of Hardware Based Algorithms. Not Compatible with G193. CUSTOMERS USING THE FOLLOWING FREQUENCIES MUST ADD FREE OPTION "QA00351AA" (ENH: UCM SP TRIGGER) due to a known Self Quiting issue for radios with the standard UCM. UHF SELF-QUIETING SPURS: UHF RANGE 1 FREQUENCIES: 383.975 MHz 393.2125 MHz 396.975 MHz 432 MHz 456 MHz UHF RANGE 2 FREQUENCIES: 456 MHz 479.975 MHz 480 MHz			
ADD: KEY RETENTION 30 SECONDS	G338	500	$50.00
G159 REQUIRED			
ADD: MULTIPLE KEY ENCRYPTION OPERATION	W969	500	$330.00
REQUIRED when using more than one encryption algorithm or encryption key.			
ENH: CONVENTIONAL TACTICAL REKEY WITH MULTIKEY	H04	514	$350.00
Must Order IV&D(Q947)			

Encryption Algorithms

Description	Nomenclature	APC	Price
ADD: ADP ENCRYPTION	G113	528	$349.00
REQUIRES G159. INCLUDES W969 Multikey. ORDER G194 if need ADP with DES/DES-XL-DES-OFB. NOT AVAILABLE with 3600 Trunking and Analog Conventional software Packages. COMPATIBLE with: G381 P25 software package; and G48, G50, and G51 software packages when used with the G806 in the Digital Conventional mode ONLY.			
Description	**Nomenclature**	**APC**	**Price**
ADD: ADP SOFTWARE DSP BASED CRYPTO	G193	500	$10.00
REQUIRES: G806 Digital Operation DOES NOT REQUIRE: G159 UCM or G77/G78 Encryption Warranty. Use standard warranty options if needed. COMPATIBLE with: G381 P25 software package; and G48, G50, and G51 software packages when used with the G806 in the Digital Conventional mode ONLY. .Includes 8 non-indexing encryption keys..			
Description	**Nomenclature**	**APC**	**Price**
AES ENCRYPTION-UCM	G843	412	$625.00
AES operates in digital mode only. NOT compatible with G241 ENH: SOFTWARE ASTRO READY ANALOG			
Description	**Nomenclature**	**APC**	**Price**
ADD: DES, DES-XL, DES-OFB ENCRYPTION - UCM	G825	412	$749.00
The Multikey (W969) or OTAR (G298) are only required when more than 1 key or 1 algorithm is programmed.			
Description	**Nomenclature**	**APC**	**Price**
ADD: DVI-XL ENCRYPTION	W793	500	$520.00
G159 is REQUIRED when ORDERING			
Description	**Nomenclature**	**APC**	**Price**
ADD: DVP-XL ENCRYPTION	W797	500	$487.00
G159 is REQUIRED when ORDERING			

Remote Mount Cables

(The 5 meter (17 FT) Cable Ships Standard)

Description	Nomenclature	APC	Price
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT)	G582	514	$65.00
For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio Corresponding kit: HKN6164			
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT)	G607	514	$45.00
Corresponding kit: HKN6166A			
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT)	G609	514	$35.00
Corresponding kit: HKN6167			
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT)	G610	514	$25.00
Corresponding kit: HKN6168			
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT)	G679	514	$55.00
Corresponding kit: HKN6165			
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT)	G616	514	$10.00
Corresponding kit: HKN6170			

DEK

Description	Nomenclature	APC	Price
ADD: STATUS MESSAGE 6 MESSAGES NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration. CORRESPONDING KIT: H1838A	W355	500	$475.00
ADD: DDE STATUS MESSAGES 16 NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration. CORRESPONDING KIT: H1839A	W374	500	$650.00

Direct Mode Entry

Description	Nomenclature	APC	Price
ADD: 8 MODE DIRECT ENTRY ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1835A	W599	500	$160.00
ADD: 16 MODE DIRECT ENTRY ONLY compatible with Remote Mount configuration CORRESPONDING KIT: H1836A	W614	500	$360.00
ADD: 24 MODE DIRECT ENTRY NOT COMPATIBLE with W289 Siren/PA. 9600 Systems offer ONLY "Status" and not "Message". ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1837A	W615	500	$540.00

WHELEN SIREN (MOTOROLA COMPATIBLE)

NOTE: THE NEW SIREN IS COMPATIBLE WITH APX AND XTL MOBILES WITH "O" SERIES OR M8 CONTROL HEADS ONLY. THIS SIREN IS NOT COMPATIBLE WITH ANY "W" SERIES CONTROL HEADS

THE SIREN BASE MODEL TT2592, CABLE TT05707 AND THE SIREN MOUNTING HARDWARE TT0507 MUST ALWAYS BE ORDERED (THIS SIREN IS ORDERED AS A SEPARATE LINE ITEM, TT2592 IS THE MODEL)

DEK OPTIONS ARE AVAILABLE AS OPTIONS TO THE SUBSCRIBER AS SHOWN BELOW

Description	Nomenclature	APC	Price
WHELEN/MOTOROLA SIREN	TT2592	656	$395.00
SIREN HARDWARE INSTALL KIT	TT05707AA	656	$20.00
SIREN TO RADIO CABLE	TT05708AA	656	$85.00
SIREN TO DEK CABLE - O3 CONTROL HEAD ONLY	TT05709AA	656	$76.00

SIREN DEK OPTIONS

ADD: DEK FOR WHELEN SIREN W/ O3 CH ONLY	GA00812	656	$105.00
ADD: DEK FOR WHELEN SIREN	GA00814	656	$105.00

Auxiliary Switches

Description	Nomenclature	APC	Price
ADD: AUXILIARY SWITCH PANEL Corresponding kit: HLN1196. G67 REQUIRED. NOT compatible with W3 control head or motorcycle.	W591	500	$165.00

Alarm

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAYS AND CABLE For either HORN or LIGHTS. NOT both	W116	500	$75.00

Emergency

Description	Nomenclature	APC	Price
ADD: PTT FOOTSWITCH Requires W872 Visor Mic. Kit Number: GLN7278B	G235	514	$51.00
ADD: EXT EMERGENCY PUSHBUTTON Corresponding kit: HLN5131	W588	500	$56.00

Frequency and Squelch Codes

Description	Nomenclature	APC	Price
ENH: FACTORY PROGRAMMING	W844	500	$0.00

Packet Data Interface / Data Cables

Description	Nomenclature	APC	Price
ADD: RS232 DATA INTFC CABLE-DASH 6 FT RS232 DATA CABLE Corresponding kit: HKN6160A.	G303	500	$50.00
RS232 DATA INTFC CABLE-TRUNK 20 FT RS232 DATA CABLE Corresponding kit: HKN6161A.	G304	500	$50.00
ADD: RS232 & IV&D PACKET DATA INTERFACE This option is ONLY Operational on Digital Trunking and Digital Conventional systems!! INCLUDES the DLM Application. This option does not include Cables. G303 or G304 should be ordered separately.	W947	500	$200.00
USB DATA INTFC CABLE-DASH 6 FT USB W/IGNITION SENSE Corresponding kit: HKN6183S.	G308	500	$50.00

RF Modem

(Supported for 9600 Trunking only)

Description	Nomenclature	APC	Price
ENH: ENABLE RF MODEM The XTL mobiles do not support Site Lens or System Watch. Therefore, the APX RF Modem function does not support the legacy System Watch or Site Lens applications. The APX RF Modem supports Conventional or 9600 Trunking only. Enabling the RF Modem in conventional mode allows provisioned APX portables to pass accountability data through the portable option Q445.	G319	500	$0.00

Service (These Service options are NOT applicable for Asia Pac)

REPAIR SERVICE ADVANTAGE
Provides for extended hardware repair coverage beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$84.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 3 YR CANADA EXTND WRNTY XTL	GA00313	388	$177.00
ENH: 5 YR CANADA EXTND WRNTY XTL	GA00316	388	$240.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$246.00

REPAIR SERVICE ADVANTAGE (ENCRYPTED)
Provides for extended hardware repair coverage, including encryption, beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G77	185	$72.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G78	185	$137.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	GA00232	185	$205.00
ENH: 3 YR CANADA ENCR EXT WRNTY XTL	GA00314	388	$181.00
ENH: 5 YR CANADA ENCR EXT WRNTY XTL	GA00317	388	$244.00

REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$285.00
ENH: 3 YEAR ENCRYPTED RSA (COMPREHENSIVE)	GA00255AA	165	$302.00

Test Results

Description	Nomenclature	APC	Price
ADD: PRINTED TEST RESULTS	G799	500	$0.00

Miscellaneous

Description	Nomenclature	APC	Price
ADD: KEY LOCK MOUNT	W81	500	$33.00

Section D: Aftermarket Accessories

Algorithm Kits

Description	Nomenclature	APC	Price
XTL5000 AES256, ADP	NNTN8326A	585	$997.00
XTL5000 DES-XL, DES-OFB, ADP	NNTN8327A	585	$998.00
XTL5000 DES-XL, DES-OFB, AES256, AD	NNTN8328A	585	$1,499.00
XTL5000 AES256	NNTN8331A	458	$795.00
XTL5000 DVP-XL	NNTN8323A	585	$715.00
XTL5000 DES-XL, DES-OFB	NNTN8335A	585	$640.00

Antennas

Description	Nomenclature	APC	Price
ANTENNA (762-870 MHZ) 3DB LOW-PROFILE	HAF4013	500	$43.00
ANTENNA (762-870 MHZ) 1/4 WAVE	HAF4016	500	$23.00
ANTENNA (762-870 MHZ) 3DB ELEVATED FEED	HAF4014	500	$75.00
ANTENNA (762-870 MHZ) 3DB GAIN COLLINEAR	HAF4017	500	$36.00

Cables

AUDIO CABLE ADAPTER	HKN6158	500	$49.00
ADAPTER CABLE DATA	HKN6159	500	$49.00

Cables (Remote Mount)

CABLE, REMOTE MOUNT, 75 FT	HKN6168	514	$80.00
CABLE, REMOTE MOUNT, 115 FT	HKN6165	514	$105.00
CABLE,REMOTE MOUNT,131 FT	HKN6164	514	$122.00

Control Station

Description	Nomenclature	APC	Price
MOBILE DESK TRAY	HLN6042	617	$77.00
PS 14V 10A 117/240 VAC.	HPN4007C	500	$296.00

Customer Programming Software

Data

CABLE KIT 20' DATA RS232 Data Interface Cable - REMOTE	HKN6161	476	$50.00

Manuals

Description	Nomenclature	APC	Price
XTL 2500 M5 MANUAL	HLN1460D	514	$12.00

Microphones

HANDSET/HANGUP (HANGUP CUP)	HLN1457	706	$265.00
MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	706	$295.00
XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00
AS. SPECTRA & XTL5000 DESKTOP MIC	RMN5070A	706	$172.00

Speakers

Description	Nomenclature	APC	Price
EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT SPEAKER	HSN4036	476	$60.50
MCS EXT SPKR 13W	HSN4032B	500	$71.50

Bull Horns for Sirens and Public Address

Description	Nomenclature	APC	Price
SPEAKER SIREN, ROUND W/CHROME & BLACK	TDN6251	706	$329.00
SPEAKER RECTANGULAR WITH CHROME FINISH	TDN6252	706	$265.00
SPEAKER UNDERHOOD WITH GRAY FINISH	TDN6253	706	$220.00
SPEAKER ROUND WITH GRAY FINISH	TDN6254	706	$246.00

Miscellaneous

Description	Nomenclature	APC	Price
WILDCARD	HLN1196	412	$165.00
AUXILIARY SWITCH PANEL (W591-W9)	HLN1342	617	$165.00

Section E: Vehicle Location Solution

Vehicle Location Solution

Vehicle location or GPS is now available on the ASTRO 25 XTL 2500 mobile radio.

The TrimFleet ™ GPS mobile units provide a versatile and economical platform for mobile positioning applications. Using state-of-the-art GPS receiver technology, the TrimFleet GPS receiver unit has been optimized for vehicle installation and operation, providing reliable vehicle position, direction, speed, time and status in any weather, anywhere in the world.

The TrimFleet receiver contains a 12-channel GPS module and an (optional) angular rate sensor module. The TrimFleet receiver connects directly to in-vehicle laptops/workstations as well as VRM and XTL radios. The TrimFleet GPS receiver outputs positions when in GPS coverage via either of its RS-232C serial ports in National Marine Electronics Association Protocol (NMEA), Trimble ASCII Interface Protocol (TAIP) and Point to Point Protocol (PPP) formats. The TrimFleet receiver may be configured to send the position data in either protocol via the two RS-232C data ports. Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

The TrimFleet DRU Plus may be equipped with an optional internal module to provide dead reckoned position data while outside of GPS coverage. This is accomplished through the use of advanced gyroscopic technology in combination with connections to the vehicle speed sensor

and vehicle direction signal (forward or reverse.) Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

I/O PORTS

The TrimFleet DRU Plus provides two RS232C compatible communication ports that may be connected to external devices. One port provides a DE-9 female DCE connection, and the other port provides a DE-9 female DTE connection. The ports may be configured individually for baud rates between 110 and 115.2K baud. Both ports support NMEA and TAIP protocols. The default configuration for both ports is 9600 baud TAIP.

Also provided is support for PPP over RS232C on Port 1. An IP capable XTL 2500 radio may be interfaced to the port to allow wireless transmission of TAIP messages to an AVL server. The TAIP messages will be encapsulated in UDP packets and sent to a configurable destination IP address and port. TAIP messages may also be sent back to the TrimFleet DRU Plus by the AVL application to modify reporting rates and query current location or status.

Vehicle location is available only on ASTRO Conventional and Trunked IV&D Systems. Subscribers must have version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software.

Digital Conventional Ordering requirements for XTL 2500 Mobile:

- Requires Control Head (G442)
- ASTRO Digital CAI Operation (G806)
- Conventional Operation (G46)
- Packet Data Interface (W947)
- Mid Power RS232 Cable (G303 Dash / G304 Remote) *(Hooks to the J2 rectangular and DB9 connector)*
- High Power RS232 Cable (HKN6122) *(Hooks to the DB25 connector and the DB9 connector)*

P25 Trunking Ordering requirements for XTL 2500 Mobile:

- Requires Control Head (G442)
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (G51)
- ASTRO Project 25 Trunking 9600 Software (G361)
- Packet Data Interface (W947)
- Mid Power RS232 Cable (G303 Dash / G304 Remote) *(Hooks to the J2 rectangular and DB9 connector)*
- PHigh Power RS232 Cable (HKN6122) *(Hooks to the DB25 connector and the DB9 connector)*

Description	Nomenclature	APC	Price

TRIMFLEET DRU PLUS (W/DR & POWER CABLE)	DDN9439	222	$745.00

Description	Nomenclature	APC	Price
TRIMFLEET APU (W/POWER CABLE)	DDN9440	222	$620.00

Description	Nomenclature	APC	Price
TRIMFLEET GPS ANTENNA WITH CABLE	DDN9474	222	$99.00

Section F: Retrofit Mounting Kits

PLEASE READ ALL ALLIED MODEL AND OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION.

Retrofit Mounting Kits

Remote to Dash

Converts an existing remote mounted XTL 2500 mobile radio to a dash mounted radio. Applicable to Low/Mid power models.

Description	Nomenclature	APC	Price
REMOTE TO DASH RETROFIT KIT FOR O5 OR XTL2500 Contains dash mount headbridge hardware. Does not include transciever trunion. Does not include a control head.	H1617	514	$75.00

Dash to Remote

Converts an existing dash mounted XTL 2500 mobile radio to a remote mounted radio. Applicable to Low/Mid power models.

If you are retrofitting XTL 2500 radios that shipped AFTER 7/1/06, order H1818.

If you are retrofitting XTL 2500 radios that shipped BEFORE 7/1/06, order H1825.

Description	Nomenclature	APC	Price
O5/M5 DASH TO O5/M5 REMOTE RETROFIT KIT Contains rear housing for remote O5, O5 control head remote mounting hardware, remote O5 power cable, remote transciever faceplate. Remote cable available as option. Does not include transciever trunion. Does note include O5 control head.	H1818	514	$325.00

Remote Mount Cables

(Cable option is NOT required. If cable option is ordered, select ONLY one option.)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G626	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G679	514	$55.00
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT) ***For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio*** Corresponding kit: HKN6164	G582	514	$65.00

Section G: Remote Control Head Replacement / Dual Control Head Retrofit Kit

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION.

Remote Control Head Replacement AND Dual Control Head Retrofit Kit

The XTL 2500 M5 Remote Control Head Replacement AND Dual Control Head Retrofit provides / requires the following:

- QTY 1: **REMOTE** mount control head assembly that includes a control head + flex cable + control head interface board rear housing (CHIB)
- Qty 1: Remote Control Head Power cable (HKN6186)
- Qty 1: Remote Control Head Mounting trunion and hardware
- Qty 1: Manual CD and dust cover kit
- OPTION: Must select a microphone option
- OPTION: Must select a speaker option
- OPTION: Must select a remote cable option

*** IF YOU ARE ADDING A CONTROL HEAD TO CONVERT A SINGLE CONTROL REMOTE MOUNT RADIO TO A DUAL CONTROL, THEN YOU MUST MAKE SURE THE RADIO HAD VERSION 6.9 SOFTWARE OR GREATER.

THE ALLIED SALES MODEL BELOW DOES NOT INCLUDE A FLASH FIRMWARE REFRESH. PLEASE SEE THE SUBSCRIBER FLASHPORT SOFTWARE UPGRADE PRICE PAGE ***

Description	Nomenclature	APC	Price
M5 REMOTE CTRL HD/CHIB REPLACEMENT / ADDITION	H1827	514	$570.00

Microphones

(Must Select One and Only One)

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/M9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.	G90	500	$0.00
ADD: PALM MICROPHONE Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090	W22	500	$72.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079	W20	514	$160.00

Speakers *(Must Select One)*

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$80.00
ADD: INCREASED AUDIO POWER 13W Corresponding kit: HSN4032. NOT COMPATIBLE with W865 Control Station and Motorcycle Configuration.	W432	500	$71.50

Remote Mount Cables

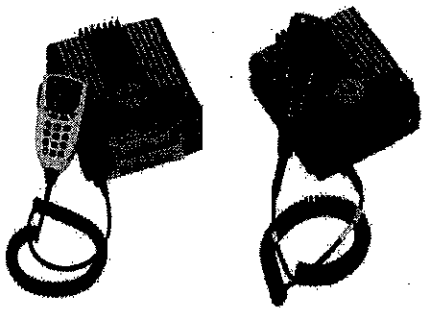
***** For Dual configurations, the total cable length may NOT be greater that 131 ft (40 meters) *****

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G818	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT)	G610	514	$25.00

Corresponding kit: HKN6168			
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT)	G609	514	$35.00
Corresponding kit: HKN6167			
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT)	G607	514	$45.00
Corresponding kit: HKN6166A			
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT)	G879	514	$55.00
Corresponding kit: HKN6165			
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT)	G582	514	$65.00
For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio			
Corresponding kit: HKN6164			

Data Compiled 16-May-2013 using DUP and all prices in USD



ASTRO® Digital XTL 5000 New O5 Multiple Control Head Mobile

MULTIPLE CONTROL HEAD ONLY

700/800 MHz
UHFR1 380-470 (10-40, 100 Watts)
UHF R2 450-520 (10-45 Watts)
VHF - 136 -174 (10-50, 100 Watts)
Secure and Trunked Radio Systems

Ship Card

This Page is for Multiple Control Options Only. For Single Control Head Radio Configurations, Options, or Accessories Please Refer to the Standard O5/O3 Price Page

ASTRO Digital XTL 5000 O5/O3 Control Head Mobile

XTL 5000 Last Order Entry Date : October 31, 2013

XTL 5000 Last Scheduled Ship Date: November 30, 2013

General Information

What is an XTL 5000 O5 Multiple Control Head Configuration?

The XTL 5000 mobile radio and the O5 control head can be configured in a multi control head configuration to support up to 4 control heads on a single transceiver. This allows control of a single XTL 5000 transceiver from up to 4 different control head locations. The O5 control head is the only control head that supports multiple control head configurations with up to 4 control heads. The W4/W5/W7/W9 can only support dual control head configurations (ex: 2 control heads).

What is the difference between an XTL 5000 Dual Control Head Configuration (W4/W5/W7/W9), a MCS Dual Control Configuration, and an O5 Multiple Control Head Configuration?

O5 Multi CH Config	W4/W5/W7/W9 Dual Control	MCS Dual Control (Canceled)
Uses O5 Control Heads	Uses Legacy ASTRO Spectra Control Heads W4/W5/W7/W9	Uses Legacy MCS Model 2 and 3 Control Heads Not Compatible with XTL 5000 mobiles
Supports 2, 3, or 4 Control Head Configurations	Supports 2 Control Head Configurations Only	Supports 2 Control Head Configurations Only
CPS Programmable for "One Active" Control Head OR "All Active" Control Head Mode	Supports "One Active" Control Head	Supports "All Active" Control Head
Supports INTERCOM Mode at all Control Heads	Does not support INTERCOM Mode	Does not support INTERCOM Mode
Uses Same Control Head Hardware that is interchangeable for all Control Heads	Uses Specific Hardware Models for "Front" and "Rear" Control Heads that are NOT Interchangeable	Uses Specific Hardware Models for "Front" and "Rear" Control Heads that are NOT Interchangeable

Guideline

Example Configurations: Dual Control

Example Configurations: Tri Control

Example Configurations: Quad Control

This price page consists of the following sections:

A. Required Main Models and Options for standard operation (Steps 1-11)

B. Optional Features

C. Optional DEK / Footswitch / Pushbutton Features

D. Aftermarket Accessories

E. Remote Control Head Replacement AND Multiple Control Head Allied Sales Model

Section A: Required Main Model and Options

For standard Radio Operation **Steps 1 - 11** **must be** selected.

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

XTS 5000 - INTENT TO CANCEL MEMO → Use INSITE hyperlink Here

1: Main Model ***(Must Select One)***

****Low/Mid Power****

Description	Nomenclature	APC	Price
XTL 5000 MOBILE 10-35 WATT, 764-870MHZ	M20URS9PW1 N	500	$1,497.00
Last Order- Oct 31,2013; Last Ship- Nov 30,2013		Intent to Cancel Date: 31-Oct-2013	
XTL 5000 VHF MOBILE 10-50 WATT 136-174 MHZ	M20KSS9PW1 N	585	$1,497.00
Last Order- Oct 31,2013; Last Ship- Nov 30,2013		Intent to Cancel Date: 31-Oct-2013	
XTL 5000 UHF R1 MOBILE 10-40 WATT 380-470 MHZ	M20QSS9PW1 N	585	$1,497.00
Last Order- Oct 31,2013; Last Ship- Nov 30,2013		Intent to Cancel Date: 31-Oct-2013	
XTL 5000 UHF R2 450-520 MHZ 10-45 WATT	M20SSS9PW1 N	585	$1,497.00
Last Order- Oct 31,2013; Last Ship- Nov 30,2013		Intent to Cancel Date: 31-Oct-2013	

High Power

Description	Nomenclature	APC	Price
~~XTL5000 UHF R1 25-110W 380-470MHZ~~	~~M20QTS9PW1 N~~	~~585~~	~~$1,997.00~~
Last Order- Oct 31,2013; Last Ship- Nov 30,2013		Intent to Cancel Date: 31-Oct-2013	
XTL 5000 VHF MOBILE 25-110 WATT 136-174 MHZ	M20KTS9PW1 N	585	$1,997.00
Last Order- Oct 31,2013; Last Ship- Nov 30,2013		Intent to Cancel Date: 31-Oct-2013	

2: Operation Mode *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: SOFTWARE ASTRO READY ANALOG	G241	500	$0.00
NOT COMPATIBLE with Encryption Algorithm W969, W793, W797, G298, G851, or G843 when combined with a Trunking Software Option. DES-OFB is not operational in Analog Operation.			
ENH: SOFTWARE ASTRO DIGITAL CAI OPERATION	G806	500	$515.00

3: System Enhancement Software *(Must Select One)*

Description	Nomenclature	APC	Price
ENH: CONVENTIONAL OPERATION	G48	500	$800.00
Limited Conventional features-see matrix			
ENH: SMARTNET OPERATION	G50	500	$1,200.00
ENH: 3600 SMARTZONE OPERATION	G51	500	$1,500.00

4: Control Head Hardware *(Must Always Select G442)*

Multi Control Head Always Requires the O5 Control Head Hardware

Description	Nomenclature	APC	Price
ADD: XTL 5000 O5 CONTROL HEAD	G442	500	$432.00

5: Control Head Software *(Must Always Select G444)*

Multi Control Head Always Requires the O5 Control Head Software

Description	Nomenclature	APC	Price
ADD: ADD: CONTROL HEAD SOFTWARE	G444	514	$0.00
MUST ALWAYS SELECT THIS OPTION			

6: Multiple Control Head Hardware *(Must Only Select One)*

Multiple Control Head Radios Always Require ONE of the O5 Multiple Control Head Options. This option QTY should ALWAYS equal the main line item Qty.

Description	Nomenclature	APC	Price
ADD: DUAL-CONTROL HARDWARE	GA00092	500	$570.00

ADD: TRI-CONTROL HARDWARE	GA00093	500	$1,000.00
ADD: QUAD-CONTROL HARDWARE	GA00094	500	$1,300.00

7: Mounting *(Must Select G67 Remote Mount)*

******Multi Control Head Always Requires Remote Mount******

Mid Power

Description	Nomenclature	APC	Price
ADD: REMOTE MOUNT Required for Dual Control and High Power Radios	G67	500	$297.00

High Power

Description	Nomenclature	APC	Price
ADD: QUICK REL REMOTE MOUNT W/KEYLOCK High Power Only	G655	585	$346.00
ADD: THUMB SCREW REMOTE MOUNT	G67	514	$297.00

8: Remote Mount Cables

******THERE IS NO STANDARD 17' CABLE OFFERED FOR A MULTI CONTROL HEAD CONFIGURATION. YOU MUST ALWAYS ORDER ONE CABLE PER CONTROL HEAD******

******Therefore, if a GA00092 Dual Control radio is desired, then the total Qty of cable options should be double the main line item Qty. Please see "Example Configurations: Dual Control" (top of page) for help******

******Total cable length may not be greeter thet 131 ft (40 meters)******

Description	Nomenclature	APC	Price
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6166	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00

9: Antenna *(Must Select One)*

******Multiple Control Head Configurations require only ONE antenna option******

No Antenna Needed For All Bands

Description	Nomenclature	APC	Price
ADD: NO ANTENNA NEEDED	G89	500	$0.00

T/800

Description	Nomenclature	APC	Price

ADD: ANTENNA 3DB LOW-PROFILE 764-870MHZ Corresponding kit: HAF4013 .Corresponding Motorcycle kit: HAF4018	G174	500	$43.00
ADD: ANTENNA 3DB ELEVATED FEED 764-870MHZ NOT Compatible with Motorcycle. Corresponding kit: HAF4014.	G175	500	$75.00
ADD: ANTENNA 1/4 WAVE 764-870MHZ Corresponding kit: HAF4016 Corresponding Motorcycle kit: HAF4015 **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING **	G335	500	$14.00
ALT: ANTENNA 3DB GAIN 764-870MMZ Not compatible with Motorcycle. Corresponding kit: HAF4017.	W484	500	$38.00

UHF R1/R2

Description	Nomenclature	APC	Price
ANTENNA 1/4 WAVE WHIP 380-433 MHZ Not Compatible with Motorcycle Corresponding kit: HAE6012. **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.**	G425	585	$25.00
ANTENNA 1/4 WAVE WHIP 450-470 MHZ Not Compatible with Motorcycle Corresponding kit: HAE4003.	G426	585	$25.00
ANTENNA 3.5DB 380-433 MHZ Not Compatible with Motorcycle Corresponding kit: HAE6010.	G427	585	$55.00
ANTENNA 3.5DB 450-470MHZ Not Compatible with Motorcycle Corresponding kit: HAE4011.	G428	585	$50.00
ANTENNA 5.0 DB 380-433 MHZ Not Compatible with Motorcycle Corresponding kit: HAE6011.	G429	585	$62.00
ANTENNA 5.0 DB 450-470 MHZ Not Compatible with Motorcycle Corresponding kit: RAE4014ARB.	G430	585	$58.00
ANTENNA WIDEBAND 380-470 MHZ Not Compatible with Motorcycle Corresponding kit: HAE6013.	G431	585	$58.00
ADD: ANTENNA 5DB GAIN 494-512 MHZ Not Compatible with Motorcycle Corresponding kit: RAE4016ARB.	G486	585	$58.00
ADD: ADD: ANT 1/4 WAVE 470-512 MHZ Not Compatible with Motorcycle Corresponding kit: HAE4004.	G490	585	$14.00
ADD: ANTENNA 3 DB ROOF TOP 470-495 Not Compatible with Motorcycle Corresponding kit: HAE4012.	G493	585	$33.00
ADD: ANTENNA 3 DB ROOF TOP 494-512 MHZ Not Compatible with Motorcycle Corresponding kit: HAE4013.	G494	585	$33.00
ADD: ANT LOW PROFILE 450-512 MH Corresponding kit: HAE6016 Corresponding Motorcycle kit: HAE6016	G510	585	$50.00
ADD: 2DB ANT WIDEBAND 450-520 MHZ Corresponding kit:HAE6015 Corresponding Motorcycle kit:HAE6015	G511	585	$70.00

VHF

Description	Nomenclature	APC	Price

ANTENNA 1/4 WAVE WHIP ROOF TOP (136-144 MHZ) Corresponding kit: HAD4006 Corresponding Motorcycle kit: RAD4002ARB	G296	585	$13.50
ANTENNA 1/4 WAVE ROFF TOP VHF (144-150.8 MHZ) Corresponding kit: HAD4007 Corresponding Motorcycle kit: RAD4003ARB	G297	585	$13.50
ANTENNA 1/4 WAVE ROOF TOP VHF (150.8-162 MHZ) Corresponding kit: HAD4006 Corresponding Motorcycle kit: RAD4004ARB	G299	585	$19.50
ANTENNA 1/4 WAVE ROOF TOP VHF (162-174 MHZ) Corresponding kit: HAD4009 Corresponding Motorcycle kit: RAD4005ARB	G300	585	$13.50
ANTENNA, VHF (136-174MHZ, 3.4 BANDWIDTH) 3DB ROOF TOP Not Compatible with Motorcycle Corresponding kit: HAD4022A.	G301	585	$58.50
ADD: 1/4 WAVE BROADBAND ANT 146-174 MHZ Not Compatible with Motorcycle Corresponding kit: HAD4017.	G629	585	$64.00

10: Microphones *(Must Select One)*

******Total # of microphones must match the total # of control heads being ordered. The G90 "No Mic Needed" option counts as a mic option******

******Therefore, if a GA00092 Duel Control radio is desired, then the total Qty of mic options should be double the main line item Qty. Please see "Example Configurations: Dual Control" (top of page) for help******

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.	G90	500	$0.00
ADD: PALM MICROPHONE Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090	W22	500	$72.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079	W20	514	$180.00

11: Speakers *(Must Select One)*

*******Total # of speakers must match the total # of control heads being ordered. The G142 "No Speaker Needed" option counts as a speaker option******

******Therefore, if a GA00092 Dual Control radio is desired, then the total Qty of speaker options should be double the main line item Qty. Please see "Example Configurations: Dual Control" (top of page) for help******

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031.	B18	500	$60.00
ADD: INCREASED AUDIO POWER 13W Corresponding kit: HSN4032. NOT COMPATIBLE with W885 Control Station and Motorcycle Configuration.	W432	500	$71.50

Section B: Optional Features

The following options are **optional** and will provide additional capabilities, if required. All options below **ARE** compatible with XTL 5000 O5 Multi Control Head configurations.

System Enhancement Options

Description	Nomenclature	APC	Price
ENH: ENHANCED DIGITAL ID DISPLAY	G114	500	$75.00
8 numeric character unit to unit display. NOTE: This option is required to display Radio ID or Radio Alias on the display for analog and digital conventional and trunking configurations.			
ENH: RADIO TRACE AND REMOTE MONITOR	G170	500	$75.00
Note: G170 option for Radio Trace/Remote Monitor is not compatible with W3 Control Head and G474 (Multi-Radio). For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ENH: SMARTZONE OMNILINK	G173	500	$200.00
Automatic Zoning Across Zones, Zone Registration, Trespass Protection, Over the Air Site Alias, 32 Preferred Sites, FastStart and AllStart Call Setup.			
ENH: ASTRO PROJECT 25 TRUNKING SOFTWARE	G361	500	$300.00
When ordering this option G51 & G806 MUST be ordered. G173 is included at "NO CHARGE".			
ADD: CONVENTIONAL VOTING SCAN ASTRO	G387	500	$200.00
This feature allows for voting of the Conventional Channels ONLY.			
ADD: TRUNKED ONE TOUCH BUTTON	G683	500	$150.00
ENH: OVER THE AIR PROGRAMMING	G996	518	$100.00
Compatible with P25 Trunking only. Requires W947 Data option. To do in field POP25 programming must use Advanced System Key (DVN4046A)			

Encryption Algorithms *(Option Qty should match main line Qty)*

ADD: MULTIPLE KEY ENCRYPTION OPERATION	W969	500	$330.00
REQUIRED when using more than one encryption algorithm or encryption key.			
ADD: ADP ENCRYPTION	G113	500	$349.00
REQUIRES G159. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G806 in the Digital Conventional mode ONLY. Includes Multikey.			
ADD: ADP WITH DES/DES-XL/DES-OFB	G194	500	$799.00
REQUIRES G159. INCLUDES W869 Multi-key. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G806 in the Digital Conventional mode ONLY.			
ADD: ENCRYPTION P25 AND MDC OTAR	G298	500	$740.00
G159 REQUIRED. Includes Multi-key (W969) and Trunking OTAR. Tactical OTAR can only be utilized when IV&D is purchased.			
ADD: AES ENCRYPTION	G843	500	$475.00
G159 REQUIRED G843 is NOT compatible with G851.			
ADD: AES WITH DES/DES-XL/DES-OFB ENCRY	G851	500	$799.00
G159 REQUIRED. G651 is NOT compatible with G843 and G625. G969 Multi-key REQUIRED.			
ADD: DES/DES-XL/DES-OFB ENCRYPTION	G625	500	$599.00
G159 is REQUIRED when ORDERING. Only DES/DES-XL are Operational in Analog Mode.			
ADD: DVI-XL ENCRYPTION	W793	500	$520.00
G159 is REQUIRED when ORDERING			
ADD: DVP-XL ENCRYPTION	W797	500	$487.00
G159 is REQUIRED when ORDERING			
ADD: KEY RETENTION 30 SECONDS	G336	500	$50.00
G159 REQUIRED			

Software Encryption

Description	Nomenclature	APC	Price
ADD: ADP SOFTWARE DSP BASED CRYPTO	G193	500	$10.00
REQUIRES: G806 Digital Operation DOES NOT REQUIRE: G159 UCM or G77/G78 Encryption Warranty. Use standard warranty options if needed. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G806 in the Digital Conventional mode ONLY. .Includes 8 non-indexing encryption keys..			

Packet Data Interface/Data Cables

Description	Nomenclature	APC	Price
ADD: RS232 & IV&D PACKET DATA INTERFACE This option is ONLY Operational on Digital Trunking and Digital Conventional systems!! INCLUDES the DLM Application. This option does not include Cables. G303 or G304 should be ordered separately.	W947	500	$200.00
ADD: RS232 DATA INTFC CABLE-DASH 6 FT RS232 DATA CABLE Corresponding kit: HKN6160A.	G303	500	$50.00
RS232 DATA INTFC CABLE-TRUNK 20 FT RS232 DATA CABLE Corresponding kit: HKN6161A.	G304	500	$50.00
USB DATA INTFC CABLE-DASH 6 FT USB W/IGNITION SENSE Corresponding kit: HKN6163B.	G308	500	$50.00
USB DATA INTFC CABLE-TRUNK 16.5 FT USB W/IGNITION SENSE Corresponding kit: HKN6172B.	G309	500	$50.00

Frequency and Squelch Codes

Description	Nomenclature	APC	Price
ENH: FACTORY PROGRAMMING	W844	500	$0.00

Test Results

Description	Nomenclature	APC	Price
ADD: PRINTED TEST RESULTS	G799	500	$0.00

Amplifier (***UHF and VHF Mid and High Power Radios Only***)

Description	Nomenclature	APC	Price
ADD: RF PRE-AMPLIFIER	W12	585	$66.00

Mounting Lock

Description	Nomenclature	APC	Price
ADD: KEY LOCK MOUNT	W81	500	$33.00

Service Options (All service options are NOT applicable to Asia Pac)

REPAIR SERVICE ADVANTAGE

Provides for extended hardware repair coverage beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$64.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 3 YR CANADA EXTND WRNTY XTL	GA00313	386	$177.00
ENH: 5 YR CANADA EXTND WRNTY XTL	GA00316	386	$240.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$246.00

REPAIR SERVICE ADVANTAGE (ENCRYPTED)

Provides for extended hardware repair coverage, including encryption, beginning after the standard warranty period.

Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G77	185	$72.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G78	185	$137.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	GA00232	185	$205.00
ENH: 3 YR CANADA ENCR EXT WRNTY XTL	GA00314	386	$181.00
ENH: 5 YR CANADA ENCR EXT WRNTY XTL	GA00317	386	$244.00

REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)

Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00
ENH: 3 YEAR ENCRYPTED RSA (COMPREHENSIVE)	GA00255AA	185	$302.00

Section C: Optional DEK / Footswitch / Pushbutton Features

Status/Message DEK

******The Status/Message DEK configuration must be equal at each control head. Therefore, if the W355 is desired on a dual control configuration, then the Qty of W355 must be equal to 2x (double) the main line Qty.******

Description	Nomenclature	APC	Price
ADD: STATUS MESSAGE 8 MESSAGES	W355	500	$475.00
NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration. CORRESPONDING KIT: H1838A			
ADD: DDE STATUS MESSAGES 16	W374	500	$650.00
NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration. CORRESPONDING KIT: H1839A			

Direct Mode Entry DEK

******The Direct Mode Entry DEK configuration must be equal at each control head. Therefore, if the W599 is desired on e dual control configuration, then the Qty of W599 must be equal to 2x (double) the main line Qty.******

Description	Nomenclature	APC	Price
ADD: 8 MODE DIRECT ENTRY	W599	500	$180.00
ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1835A			
ADD: 16 MODE DIRECT ENTRY	W614	500	$360.00
ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1836A			
ADD: 24 MODE DIRECT ENTRY	W615	500	$540.00
NOT COMPATIBLE with W269 Siran/PA. 9600 Systems offer ONLY "Status" and not "Message". ONLY compatible with Remote Mount configuration. CORRESPONDING KIT: H1837A			

Auxillary Switches DEK

Only One Auxiliary Switch DEK option can be supported per radio. Therefore, if the W591 is desired on a dual, tri, or quad configuration, then the Qty will ALWAYS be equal to the main line item Qty.

Description	Nomenclature	APC	Price
ADD: AUXILIARY SWITCH PANEL	W591	500	$165.00

Corresponding kit: HLN1196.
G67 REQUIRED. NOT compatible with W3 control head or motorcycle.

Alarm

Only One Alarm Relay Cable option can be supported per radio. Therefore, if the W116 is desired on a dual, tri, or quad configuration, then the Qty will ALWAYS be equal to the main line item Qty.

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAYS AND CABLE	W116	500	$75.00

For either HORN or LIGHTS. NOT both

Emergency Footswitch / Pushbutton

The Emergency Footswitch/Pushbutton configuration must be equal at each control head. Therefore, if the W470 is desired on a dual control configuration, then the Qty of W470 must be equal to 2x (double) the main line Qty.

Description	Nomenclature	APC	Price
ADD: EXTERNAL EMERGENCY FOOTSWITCH	W470	500	$56.00

Corresponding kit: HLN5113.

ADD: EXT EMERGENCY PUSHBUTTON	W688	500	$56.00

Corresponding kit: HLN5131

Section D: Aftermarket Accessories

Please refer to the O5/O3 Price Page for complete list of Aftermarket Accessories

ASTRO Digital XTL 5000 O5/O3 Control Head Mobile

Section E: Remote Control Head Replacement AND Multiple Control Head Retrofit Allied Sales Model

PLEASE READ ALL ALLIED MODEL AND OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

Remote Control Head Replacement AND Multiple Control Head Retrofit Kit

The XTL 5000 O5 Remote Control Head Replacement AND Multiple Control Head Retrofit allied sales model provide the following:

- QTY 1: **REMOTE** mount control head assembly that includes a control head + flex cable + control head interface board rear housing (CHIB)
- Qty 1: Remote Control Head Power cable (HKN6188)

- Qty 1: Remote Control Head Mounting trunion and hardware
- Qty 1: Manual CD and dust cover kit
- OPTION: Must select a microphone option
- OPTION: Must select a speaker option
- OPTION: Must select a remote cable option

***IF YOU ARE ADDING A CONTROL HEAD TO CONVERT A SINGLE CONTROL REMOTE MOUNT RADIO TO A DUAL, TRI, OR QUAD CONTROL, THEN YOU MUST MAKE SURE THE RADIO HAD VERSION 6.9 SOFTWARE OR GREATER.

THE ALLIED SALES MODEL BELOW DOES NOT INCLUDE A FLASH FIRMWARE REFRESH. PLEASE SEE FLASH UPGRADE PRICE PAGE ***

Description	Nomenclature	APC	Price
O5 REMOTE CTRL HD/CHIB REPLACEMENT/ADDITION	H1823	500	$570.00

Microphones

(Must Select One and Only One)

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED	G90	500	$0.00
Select this option when ordering W3 Handheld Control Head (G82/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ADD: PALM MICROPHONE	W22	500	$72.00
Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090			
ADD: KEYPAD MIC (GCAI)	W20	514	$180.00
Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079			

Speakers

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT	B18	500	$60.00
Corresponding kit: HSN4031.			
ADD: INCREASED AUDIO POWER 13W	W432	500	$71.50
Corresponding kit: HSN4032. NOT COMPATIBLE with W885 Control Station and Motorcycle Configuretion.			

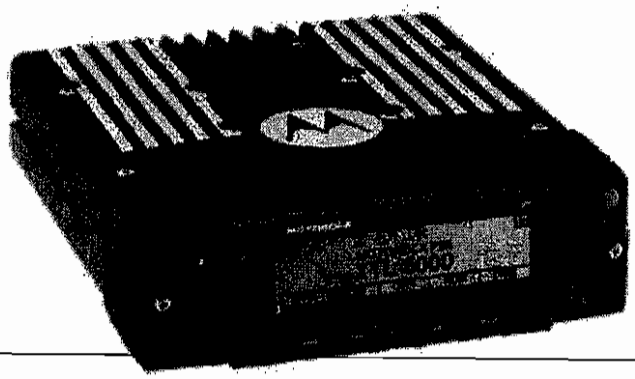
Remote Mount Cables

For Dual/Tri/Quad configurations, the total cable length may not be greater that 132 ft (40 meters)

(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00

Data Compiled 16-May-2013 using DUP and all prices in USD



ASTRO® Digital XTL5000 "New O5 & O3" Control Head Mobile
700/800 MHz
UHFR1 380-470 (10-40, 100 Watts)
UHF R2 450-520 (10-45 Watts)
VHF - 136 -174 (10-50, 100 Watts)
Secure and Trunked Radio Systems

Ship Card

XTL 5000 Last Order Entry Date : October 31, 2013

XTL 5000 Last Scheduled Ship Date: November 30, 2013

Guideline

SB9600 Transit Customers working with ORBITAL, Please Refer to the W Series Price Pages

This price page consists of the following sections:

A. Required Main Models and Options for standard operation (Steps 1-9)

B. Motorcycle, Control Station, Dual Control Head, Multi Radio, and Text Messaging Requirements

C. Optional Features

D. Vehicle Location Solution

E. Aftermarket Accessories

F. Retrofit Mounting Kits

G. Control Head Conversion Allied Sales Models

H. Remote Control Head Replacement AND Multiple Control Head Allied Sales Model

Section A: Required Main Model and Options

XTS 5000 - INTENT TO CANCEL MEMO → Use INSITE hyperlink Here

For standard Radio Operation (including Motorcycle) **Steps 1 - 9 must be** selected.

PLEASE READ ALL OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

1: Main Model *(Must Select One)*

Low/Mid Power

Description	Nomenclature	APC	Price
XTL 5000 MOBILE 10-35 WATT, 764-870MHZ	M20URS9PW1 N	500	$1,497.00
Last Order- Oct 31,2013; Last Ship- Nov 30,2013	Intent to Cancel Date: 31-Oct-2013		
XTL 5000 VHF MOBILE 10-50 WATT 136-174 MHZ	M20KSS9PW1 N	585	$1,497.00
Last Order- Oct 31,2013; Last Ship- Nov 30,2013	Intent to Cancel Date: 31-Oct-2013		
XTL 5000 UHF R1 MOBILE 10-40 WATT 380-470 MHZ	M20QSS9PW1 N	585	$1,497.00
Last Order- Oct 31,2013; Last Ship- Nov 30,2013	Intent to Cancel Date: 31-Oct-2013		
XTL 5000 UHF R2 450-520 MHZ 10-45 WATT	M20SSS9PW1 N	585	$1,497.00
Last Order- Oct 31,2013; Last Ship- Nov 30,2013	Intent to Cancel Date: 31-Oct-2013		

High Power (Not Compatible with Motorcycle Operation)

Description	Nomenclature	APC	Price
XTL5000 UHF R1 25-110W 380-470MHZ	M20QTS9PW1 N	585	$1,997.00
Last Order- Oct 31,2013; Last Ship- Nov 30,2013	Intent to Cancel Date: 31-Oct-2013		
XTL 5000 VHF MOBILE 25-110 WATT 136-174 MHZ	M20KTS9PW1 N	585	$1,997.00
Last Order- Oct 31,2013; Last Ship- Nov 30,2013	Intent to Cancel Date: 31-Oct-2013		

2: Operation Mode
(Must Select One)

Description	Nomenclature	APC	Price
ENH: SOFTWARE ASTRO READY ANALOG	G241	500	$0.00
NOT COMPATIBLE with Encryption Algorithm W989, W793, W797, G298, G851, or G843 when combined with a Trunking Software Option. DES-OFB is not operational in Analog Operation.			
ENH: SOFTWARE ASTRO DIGITAL CAI OPERATION	G806	500	$515.00

3: System Enhancement Software
(Must Select One)

Description	Nomenclature	APC	Price
ENH: CONVENTIONAL OPERATION	G48	500	$800.00
Limited Conventional features-see matrix			
ENH: SMARTNET OPERATION	G50	500	$1,200.00
ENH: 3600 SMARTZONE OPERATION	G51	500	$1,500.00

3b: Optional System Enhancement Software *(Not Required)*

Description	Nomenclature	APC	Price

ENH: SMARTZONE OMNILNK MULTZONE SYSTEM SW Automatic Zoning Across Zones, Zone Registration, Trespass Protection, Over the Air Site Alias, 32 Preferred Sites, FastStart and AllStart Cell Setup.	G173	656	$200.00
ADD: P25 TRUNKING SOFTWARE When ordering this option G51 & G806 MUST be ordered. G173 is included at "NO CHARGE".	G361	656	$300.00

4: Control Head Hardware
(Must Select One)

O5 Control Head Hardware

Description	Nomenclature	APC	Price
ADD: XTL 5000 O5 CONTROL HEAD	G442	500	$432.00
ADD: NO CONTROL HEAD NEEDED Requires remote mounting option (G67 or G655)	G88	500	$0.00

O3 Control Head Hardware

Description	Nomenclature	APC	Price
ADD: 03 CONTROL HEAD NOTE: VERSION PMUN1034C WILL NO LONGER SHIP FROM THE FACTORY AS IT HAS BEEN REPLACED BY VERSION PMUN1034E. PMUN1034C IS NO LONGER AVAILABLE *Select G80 (No MIC needad) when you order this option*	G72	500	$946.00
ADD: NO O3 CONTROL HEAD	GA00001	500	$0.00

5: Control Head Software *(Must Always Select G444 - same software for both O5 and O3 control head)*
Must select G444 AND G138 for motorcycle operation (O5 only)

Description	Nomenclature	APC	Price
ADD: MOTORCYCLE CH SFWR Required for Motorcycle Operation	G138	514	$0.00
ADD: ADD: CONTROL HEAD SOFTWARE MUST ALWAYS SELECT THIS OPTION	G444	514	$0.00

6: Mounting
(Must Select One)

*** All G67 and G655 Remote Mounting Options for the O5 CH include a standard 5 meters (17ft) control cable except for G67MTCL. If a different length is desired please reference the "Remote Mount Cables" section below in Section C: Optional Features***

*** G67 Remote Mounting Option with O3 CH includes a 17ft Extension Control Cable (PMLN4958A) and the O3 Accessory Extenaion Cable (PMLN4959A) ***

Description	Nomenclature	APC	Price
ADD: DASH MOUNT Required for Control Station Operation	G66	500	$125.00
ADD: REMOTE MOUNT Required for Dual Control and High Power Radios	G67	500	$297.00

Motorcycle (O5 ONLY)
Only available with 5 meter (17 ft) cable)

Description	Nomenclature	APC	Price
ADD: REMOTE MOUNT MOTORCYCLE Required for Motorcycle Operation	G67MTCL	500	$400.00

High Power (O5 and O3)

****If a remote mount cable other than 5 meters (17ft) is desired for the G655, please reference the "Remote Mount Cables" section below in Section C: Optional Features****

Description	Nomenclature	APC	Price
ADD: QUICK REL REMOTE MOUNT W/KEYLOCK High Power Only	G655	585	$346.00
ADD: THUMB SCREW REMOTE MOUNT	G67	514	$297.00

7: Antenna *(Must Select One)*

No Antenna Needed For All Bands

Description	Nomenclature	APC	Price
ADD: NO ANTENNA NEEDED	G89	500	$0.00

7/800

Description	Nomenclature	APC	Price
ADD: ANTENNA 3DB LOW-PROFILE 764-870MHZ Corresponding kit: HAF4013 Corresponding Motorcycle kit: HAF4018	G174	500	$43.00
ADD: ANTENNA 3DB ELEVATED FEED 764-870MHZ NOT Compatible with Motorcycle. Corresponding kit: HAF4014.	G175	500	$75.00
ADD: ANTENNA 1/4 WAVE 764-870MHZ Corresponding kit: HAF4018 Corresponding Motorcycle kit: HAF4015 **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.**	G335	500	$14.00
ALT: ANTENNA 3DB GAIN 764-870MMZ Not compatible with Motorcycle. Corresponding kit: HAF4017.	W484	500	$38.00

UHF R1/R2

Description	Nomenclature	APC	Price
MTRCYCL ANTENNA 1/4 WVE WHP 380-433 MOTORCYCLE ONLY Corresponding kit: HAE6014. **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.**	G210	585	$29.00
ADD:MTRCYCL ANT 1/4 WV WHP 450-482 Motorcycle Only Corresponding kit: RAE4024ARB.	G283	585	$40.00
ANTENNA 1/4 WAVE WHIP 380-433 MHZ Not Compatible with Motorcycle Corresponding kit: HAE6012. **DESIGN MODIFICATIONS ARE BEING MADE TO THIS ANTENNA. THE NEW DESIGN INCLUDES TITANIUM BLACK PLATING, TEARDROP TOP, AND GOLD BUTTON PLATING.**	G425	585	$25.00
ANTENNA 1/4 WAVE WHIP 450-470 MHZ Not Compatible with Motorcycle Corresponding kit: HAE4003.	G426	585	$25.00

ANTENNA 3.5DB 380-433 MHZ Not Compatible with Motorcycle Corresponding kit: HAE6010.	G427	585	$55.00
ANTENNA 3.5DB 450-470MHZ Not Compatible with Motorcycle Corresponding kit: HAE4011.	G428	585	$50.00
ANTENNA 5.0 DB 380-433 MHZ Not Compatible with Motorcycle Corresponding kit: HAE6011.	G429	585	$62.00
ANTENNA 5.0 DB 450-470 MHZ Not Compatible with Motorcycle Corresponding kit: RAE4014ARB.	G430	585	$58.00
ANTENNA WIDEBAND 380-470 MHZ Not Compatible with Motorcycle Corresponding kit: HAE6013.	G431	585	$58.00
ADD: ANTENNA 5DB GAIN 494-512 MHZ Not Compatible with Motorcycle Corresponding kit: RAE4016ARB.	G486	585	$58.00
ADD: ADD: ANT 1/4 WAVE 470-512 MHZ Not Compatible with Motorcycle Corresponding kit: HAE4004.	G490	585	$14.00
ADD: ANTENNA 3 DB ROOF TOP 470-495 Not Compatible with Motorcycle Corresponding kit: HAE4012.	G493	585	$33.00
ADD: ANTENNA 3 DB ROOF TOP 494-512 MHZ Not Compatible with Motorcycle Corresponding kit: HAE4013.	G494	585	$33.00
ADD: ANT LOW PROFILE 450-512 MH Corresponding kit: HAE6016 Corresponding Motorcycle kit: HAE6016	G510	585	$50.00
ADD: 2DB ANT WIDEBAND 450-520 MHZ Corresponding kit:HAE6015 Corresponding Motorcycle kit:HAE6015	G511	585	$70.00

VHF

Description	Nomenclature	APC	Price
ANTENNA 1/4 WAVE WHIP ROOF TOP (136-144 MHZ) Corresponding kit: HAD4006 Corresponding Motorcycle kit: RAD4002ARB	G296	585	$13.50
ANTENNA 1/4 WAVE ROFF TOP VHF (144-150.8 MHZ) Corresponding kit: HAD4007 Corresponding Motorcycle kit: RAD4003ARB	G297	585	$13.50
ANTENNA 1/4 WAVE ROOF TOP VHF (150.8-162 MHZ) Corresponding kit: HAD4008 Corresponding Motorcycle kit: RAD4004ARB	G299	585	$19.50
ANTENNA 1/4 WAVE ROOF TOP VHF (162-174 MHZ) Corresponding kit: HAD4009 Corresponding Motorcycle kit: RAD4005ARB	G300	585	$13.50
ANTENNA, VHF (136-174MHZ, 3.4 BANDWIDTH) 3DB ROOF TOP Not Compatible with Motorcycle Corresponding kit: HAD4022A.	G301	585	$58.50
ADD: 1/4 WAVE BROADBAND ANT 146-174 MHZ Not Compatible with Motorcycle Corresponding kit: HAD4017.	G629	585	$64.00

8: Microphones

(Must Select One)
****** G90 NO MICROPHONE NEEDED Required for O3 Control Head ******

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.	G90	500	$0.00
ADD: PALM MICROPHONE Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090	W22	500	$72.00
ADD: MOTORCYCLE PALM MICROPHONE Corresponding kit for W4, W5, W7: HMN1079 Corresponding kit for O5 and XTL2500: HMN1079	W22	500	$72.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079	W20	514	$180.00
ADD: CONTROL STATION DESK MICROPHONE Dash Mount Required Corresponding Kit: RMN5070	W382	500	$169.00
ADD: HANDSET/HANGUP GCAI Coiled Cable with Toggle Switch Accessory Kit: HLN1457A	G874	514	$285.00
ADD: MODEL III KEYPAD TELEPHONE HANDSET Corresponding kit: HMN4097A	GA00221	514	$295.00
ADD: HAND MIC, GCAI, (WATER RESISTANT) Compatible with motorcycle configuration. Corresponding kit for O5 and XTL2500: HMN1089A	G892	514	$72.00
ADD: HANG-UP CRADLE W/COILED CBL, GCAI Coiled Cable, No Toggle Switch Accessory Kit: HKN1017	G876	514	$415.00
ADD: VISOR MIC REMOTE MOUNT Requires G235 Footswith PTT or G223 Gooseneck PTT. Kit Number: HMN4089A	W872	514	$30.00
ADD: GOOSE NECK PTT Requires W872 Visor Mic. Kit Number: HMN1087A	G233	623	$64.00
ADD: PUSH TO TALK FOOTSWITCH Requires W872 Visor Mic. Kit Number: GLN7278B	G235	623	$51.00
ADD: ANDSET/HANGUP ARMOURED CBL GCAI Armored Cable, No Toggle Switch Accessory Kit: HKN1018	W874	514	$300.00

9: Speakers

(Must Select One)
******G142 NO SPEAKER Required for Control Station******

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT Corresponding kit: HSN4031	B18	500	$60.00
ADD: AUXILARY SPEAKER SPECTRA MOTORCYCLE Corresponding Motorcycle kit: HSN8003.	B18	500	$60.00
ADD: INCREASED AUDIO POWER 13W Corresponding kit: HSN4032	W432	500	$71.50

NOT COMPATIBLE with W665 Control Station and Motorcycle Configuration.

Section B: Motorcycle, Control Station, Dual Control Head, Multi Radio Requirements

Please read the all of the instructions below before selecting any options.
Each Radio Type has 3 Ordering Steps.

MOTORCYCLE CONFIGURATION

I. You must review your selection of the following options from "Section 1: Required Options".

- Step 1 (Note: Not Compatible with High Power Models (M20QTS9PW1 N AND M20KTS9PW1 N))
- Step 2 (Note: All listed options are compliant)
- Step 3 (Note: All listed options are compliant)
- Step 4 (Note: G442 **OR** G88 are compatible with Motorcycle Operation - Must only select one).
- Step 5 (Note: Must select G444 **AND** G138 for Motorcycle Operation).
- Step 6 (Note: Must Select G67MTCL. Motorcycle operation is only offered in a Remote Mount Configuration)
- Step 7 (Note: Some Antennas are **NOT** compatible. Please read option description)
- Step 8 (Note: The W22, W20, and G892 are the only compatible mics. If no Microphone is needed, G90 must be selected).
- Step 9 (Note: Must select B18 speaker option)

II. You Must Select ONE of the Following "Motorcycle Specific Options":

MOTORCYCLE SPECIFIC OPTIONS

Weatherproof Housing *(Must Select One)*

Description	Nomenclature	APC	Price
ADD: NO MOTORCYCLE ENCLOSURE NEEDED	W620	500	$0.00
ADD: BLACK WEATHER RESISTANT MOTORCYCLE ENCLOSURE	W15	500	$900.00

Corresponding kit: HLN7022A.

- Features listed in "Section C: Optional Features" are optional, if applicable. Please read the option's description to determine compatibility.

Motorcycle Configuration is not compatible with any DEK options

CONTROL STATION OPERATION

I. First, you must review your selection of the following options from "Section 1: Required Options".

- Step 1 (Note: Main Model)
- Step 2 (Note: All listed options are compliant)
- Step 3 (Note: All listed options are compliant)
- Step 4 (Note: O5 Control Head **OR** "No Control Head Needed" are compatible with Control Station Application- Must only select one).
- Step 5 (Note: Must Select G444. The O5 Control Head Software is compatible with Control

Station Application).

- Step 6 (Note: Must Select G66. Control Station operation is only offered in Dash mount configuration)
- Step 7 (Note: All listed options are compliant)
- Step 8 (Note: In addition to W22 listed in Step 8, W382 listed below is compliant as well. If no Microphone is needed, G90 must be selected).
- Step 9 (Note: Must Select G142 - No Speaker Needed)

- You Must Select W665 Control Station Operation and choose if you want the G91 Power Supply.

ONE of the Following "Specific Control Station Options":

SPECIFIC CONTROL STATION OPTIONS

Description	Nomenclature	APC	Price
ADD: CONTROL STATION OPERATION For DASH MOUNT radios ONLY (G66)!! Not compatible with W3, or W9 control head options. G665 includes a base tray and a speaker; therefore G142 has to be ordered to eliminate extra Speaker. Requires e Power Supply (G91 can be ordered as a Power Supply). Requires one of the Microphone Options: G90, W22 or W382. Corresponding kit: HLN6042	W665	500	$70.00
ADD: CONTROL STATION POWER SUPPLY Corresponding kit: HPN4007	G91	500	$269.00

III. Features listed in "Section C: Optional Features" are optional, if applicable. Please read the option's description to determine compatibility.

DUAL CONTROL HEAD RADIO

See Multi Control Page for XTL5000 O5

Multiple Control Head XTL5000 O5 Control Head Mobile

MULTI RADIO

***Not** Available with O5/O3 Control Heads*

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on APX 7000 Dual Display Portable radios. Advanced Messaging is NOT supported on APX 7000 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for APX Mobiles Require: (Note: some control heads are not available on all main models)

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
  - P25 Conventional (G48)
- Packet Data Interface (W947)

OR

- O9, O7, O5, O3 or O2 Control Heads
  - With O2 or O5 Control Heads Require Keypad Mic (W20)
- ASTRO Digital CAI Operation (G806)
  - SmartZone Operation (G51)
- ASTRO Project 25 Trunking Software (G361)
  - Packet Data Interface (W947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

Section C: Optional Features

The following options are **optional** and will provide additional capabilities, if required.

System Enhancement Options

Description	Nomenclature	APC	Price
ENH: ENHANCED DIGITAL ID DISPLAY 8 numeric character unit to unit display. NOTE: This option is required to display Radio ID or Radio Alias on the display for analog and digital conventional and trunking configurations.	G114	500	$75.00
ENH: RADIO TRACE AND REMOTE MONITOR Note: G170 option for Radio Trace/Remote Monitor is not compatible with W3 Control Heed and G474 (Multi-Radio). For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.	G170	500	$75.00
ADD: CONVENTIONAL VOTING SCAN ASTRO This feature allows for voting of the Conventional Channels ONLY.	G387	500	$200.00

ADD: TRUNKED ONE TOUCH BUTTON	G683	500	$150.00
ENH: PROGRAMMING OVER P25	G996	500	$100.00
POP25 requires UCM & AES encryption for ASTRO Conventional operation. Requires W947 Data option. To do in field POP25 programming must use Advanced System Key (DVN4046A)			
ADD: XTL5000 RADIO AUTHENTICATION	W391	500	$100.00

Encryption Hardware and Software

Description	Nomenclature	APC	Price
ADD: ENCRYPTION UCM	G159	500	$150.00
REQUIRED for ANY encryption combination of Hardware Based Algorithms. Not Compatible with G193. ~~CUSTOMERS USING THE FOLLOWING FREQUENCIES MUST ADD FREE OPTION~~ "QA00351AA" (ENH: UCM SP TRIGGER) due to a known Self Quiting issue for radios with the standard UCM. UHF SELF-QUIETING SPURS: UHF RANGE 1 FREQUENCIES: 383.975 MHz 393.2125 MHz 395.975 MHz 432 MHz 456 MHz UHF RANGE 2 FREQUENCIES: 456 MHz 479.975 MHz 480 MHz			
ADD: KEY RETENTION 30 SECONDS	G336	500	$50.00
G159 REQUIRED			
ADD: MULTIPLE KEY ENCRYPTION OPERATION	W969	500	$330.00
REQUIRED when using more than one encryption algorithm or encryption key.			
ADD: ENCRYPTION P25 AND MDC OTAR	G298	500	$740.00
G159 REQUIRED. Includes Multi-key (W969) and Trunking OTAR. Tactical OTAR can only be utilized when IV&D is purchased.			

Encryption Algorithms

ADD: ADP ENCRYPTION	G113	500	$349.00
REQUIRES G159. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G806 in the Digital Conventional mode ONLY. Includes Multikey.			
ADD: ADP WITH DES/DES-XL/DES-OFB	G194	500	$799.00
REQUIRES G159. INCLUDES W969 Multi-key. COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G806 in the Digital Conventional mode ONLY.			
ADD: AES ENCRYPTION	G843	500	$475.00
G159 REQUIRED G843 is NOT competible with G851.			
ADD: AES WITH DES/DES-XL/DES-OFB ENCRY	G851	500	$799.00
G159 REQUIRED. G851 is NOT compatible with G843 and G625. G969 Multi-key REQUIRED.			
ADD: DES/DES-XL/DES-OFB ENCRYPTION	G625	500	$599.00
G159 is REQUIRED when ORDERING. Only DES/DES-XL are Operational in Analog Mode.			
ADD: DVI-XL ENCRYPTION	W793	500	$520.00
G159 is REQUIRED when ORDERING			
ADD: DVP-XL ENCRYPTION	W797	500	$487.00
G159 is REQUIRED when ORDERING			

Software Based Encryption

Description	Nomenclature	APC	Price
ADD: ADP SOFTWARE DSP BASED CRYPTO	G193	500	$10.00

REQUIRES: G806 Digital Operation
DOES NOT REQUIRE: G159 UCM or G77/G78 Encryption Warranty. Use standard warranty options if needed.
COMPATIBLE with: G361 P25 software package; and G48, G50, and G51 software packages when used with the G806 in the Digital Conventional mode ONLY. .Includes 8 non-indexing encryption keys..

O5 Remote Mount Cables

(All cables are for 05 control head only)
*** *(The 5 meter (17 FT) Cable Ships Standard)* ***

Description	Nomenclature	APC	Price
~~ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT)~~	~~G618~~	~~514~~	~~$10.00~~
Corresponding kit: HKN6170			
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT)	G610	514	$25.00
Corresponding kit: HKN6166			
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT)	G609	514	$35.00
Corresponding kit: HKN6167			
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT)	G607	514	$45.00
Corresponding kit: HKN6166A			
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT)	G879	514	$55.00
Corresponding kit: HKN6165			
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT)	G582	514	$65.00

For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio
Corresponding kit: HKN6164

Direct Entry Keyboard - DEK

Description	Nomenclature	APC	Price
ADD: STATUS MESSAGE 8 MESSAGES	W355	500	$475.00

NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration.
CORRESPONDING KIT: H1638A

ADD: DDE STATUS MESSAGES 16	W374	500	$650.00

NOT compatible with W3 or Motorcycle Control Heads. Not compatible with Dash Mount configuration. Requires Remote Mount configuration.
CORRESPONDING KIT: H1639A

Direct Mode Entry

Description	Nomenclature	APC	Price
ADD: 8 MODE DIRECT ENTRY	W599	500	$180.00

ONLY compatible with Remote Mount configuration.
CORRESPONDING KIT: H1635A

ADD: 16 MODE DIRECT ENTRY	W614	500	$360.00

ONLY compatible with Remote Mount configuration.
CORRESPONDING KIT: H1638A

ADD: 24 MODE DIRECT ENTRY	W615	500	$540.00

NOT COMPATIBLE with W269 Siren/PA. 9600 Systems offer ONLY "Status" and not "Message". ONLY compatible with Remote Mount configuration.
CORRESPONDING KIT: H1637A

WHELEN SIREN (MOTOROLA COMPATIBLE)

NOTE: THE NEW SIREN IS COMPATIBLE WITH APX AND XTL MOBILES WITH "O" SERIES CONTROL HEADS ONLY. THIS SIREN IS NOT COMPATIBLE WITH ANY "W" SERIES CONTROL HEADS

THE SIREN BASE MODEL TT2592, ONE CABLE AND THE SIREN MOUNTING HARDWARE TT0507 MUST ALWAYS BE ORDERED (THIS SIREN IS ORDERED AS A SEPARATE LINE ITEM, TT2592 IS THE MODEL)

DEK OPTIONS ARE AVAILABLE AS OPTIONS TO THE SUBSCRIBER AS SHOWN BELOW

Description	Nomenclature	APC	Price
WHELEN/MOTOROLA SIREN	TT2592	656	$395.00
SIREN HARDWARE INSTALL KIT	TT05707AA	656	$20.00
SIREN TO RADIO CABLE	TT05708AA	656	$65.00
SIREN TO DEK CABLE - O3 CONTROL HEAD ONLY	TT05709AA	656	$78.00

SIREN DEK OPTIONS

ADD: DEK FOR WHELEN SIREN W/ O3 CH ONLY	GA00812	656	$105.00
ADD: DEK FOR WHELEN SIREN	GA00814	656	$105.00

Auxiliary Switches DEK

Description	Nomenclature	APC	Price
ADD: AUXILIARY SWITCH PANEL	W591	500	$165.00
Corresponding kit: HLN1196. G67 REQUIRED. NOT compatible with W3 control head or motorcycle.			

Alarm

Description	Nomenclature	APC	Price
ADD: EXTERNAL ALARM RELAYS AND CABLE	W116	500	$75.00
For either HORN or LIGHTS. NOT both			
ADD: EXTERNAL ALARM BUZZER 110MA	B116	514	$0.00

Emergency

Description	Nomenclature	APC	Price
ADD: EXTERNAL EMERGENCY FOOTSWITCH	W470	500	$56.00
Corresponding kit: HLN5113.			
ADD: EXT EMERGENCY PUSHBUTTON	W688	500	$56.00
Corresponding kit: HLN5131			

Frequency and Squelch Codes

Description	Nomenclature	APC	Price
ENH: FACTORY PROGRAMMING	W844	500	$0.00

Packet Data Interface/Data Cables

Description	Nomenclature	APC	Price
ADD: RS232 & IV&D PACKET DATA INTERFACE	W947	500	$200.00
This option is ONLY Operational on Digital Trunking and Digital Conventional systems!! INCLUDES the DLM Application. This option does not include Cables. G303 or G304			

should be ordered separately.

Description	Nomenclature	APC	Price
ADD: RS232 DATA INTFC CABLE-DASH 6 FT RS232 DATA CABLE Corresponding kit: HKN6160A.	G303	500	$50.00
RS232 DATA INTFC CABLE-TRUNK 20 FT RS232 DATA CABLE Corresponding kit: HKN6161A.	G304	500	$50.00
USB DATA INTFC CABLE-DASH 6 FT USB W/IGNITION SENSE Corresponding kit: HKN6163B.	G308	500	$50.00
USB DATA INTFC CABLE-TRUNK 16.5 FT USB W/IGNITION SENSE Corresponding kit: HKN6172B.	G309	500	$50.00

RF Modem

Description	Nomenclature	APC	Price
ENH: ENABLE RF MODEM The XTL mobiles do not support Site Lens or System Watch. Therefore, the APX RF Modem function does not support the legacy System Watch or Site Lens applications. The APX RF Modem supports Conventional or 9600 Trunking only. Enabling the RF Modem in conventional mode allows provisioned APX portables to pass accountability data through the portable option Q445.	G319	500	$0.00

Service Options

REPAIR SERVICE ADVANTAGE

Provides for extended hardware repair coverage beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	G400	185	$64.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	G24	185	$121.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	G398AU	185	$182.00
ENH: 3 YR CANADA EXTND WRNTY XTL	GA00313	386	$177.00
ENH: 5 YR CANADA EXTND WRNTY XTL	GA00316	386	$240.00
ENH: 4 YR REPAIR SERVICE ADVANTAGE	GA00318	185	$246.00

REPAIR SERVICE ADVANTAGE (ENCRYPTED)

Provides for extended hardware repair coverage, including encryption, beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G77	185	$72.00
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	G78	185	$137.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (ENCRYPTED)	GA00232	185	$205.00
ENH: 3 YR CANADA ENCR EXT WRNTY XTL	GA00314	386	$181.00
ENH: 5 YR CANADA ENCR EXT WRNTY XTL	GA00317	386	$244.00

REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC	185	$265.00
ENH: 3 YEAR ENCRYPTED RSA (COMPREHENSIVE)	GA00255AA	185	$302.00

Test Results

Description	Nomenclature	APC	Price
ADD: PRINTED TEST RESULTS	G799	500	$0.00

Amplifier (*UHF and VHF Mid and High Power Radios Only***)**

Description	Nomenclature	APC	Price
ADD: RF PRE-AMPLIFIER	W12	585	$66.00

Mounting Lock

Description	Nomenclature	APC	Price
ADD: KEY LOCK MOUNT	W81	500	$33.00

Section D: Vehicle Location Solution

Vehicle Location Solution

Vehicle location or GPS is now available on the ASTRO 25 XTL5000 O5 & 03 mobile radios. The TrimFleet ™ GPS mobile units provide a versatile and economical platform for mobile positioning applications. Using state-of-the-art GPS receiver technology, the TrimFleet GPS receiver unit has been optimized for vehicle installation and operation, providing reliable vehicle position, direction, speed, time and status in any weather, anywhere in the world.

The TrimFleet receiver contains a 12-channel GPS module and an (optional) angular rate sensor module. The TrimFleet receiver connects directly to in-vehicle laptops/workstations as well as VRM and XTL radios. The TrimFleet GPS receiver outputs positions when in GPS coverage via either of its RS-232C serial ports in National Marine Electronics Association Protocol (NMEA), Trimble ASCII Interface Protocol (TAIP) and Point to Point Protocol (PPP) formats. The TrimFleet receiver may be configured to send the position data in either protocol via the two RS-232C data ports. Once installed in a vehicle and driven for a short distance, the 12-channel GPS module used in the TrimFleet receiver will automatically self-calibrate.

The TrimFleet DRU Plus (Dead Reckoning) may be equipped with an optional internal module to provide dead reckoned position data while outside of GPS coverage. This is accomplished through the use of advanced gyroscopic technology in combination with connections to the vehicle speed sensor and vehicle direction signal (forward or reverse.)

I/O PORTS

The TrimFleet DRU Plus provides two RS232C compatible communication ports that may be connected to external devices. One port provides a DE-9 female DCE connection, and the other port provides a DE-9 female DTE connection. The ports may be configured individually for baud rates between 110 and 115.2K baud. Both ports support NMEA and TAIP protocols. The default configuration for both ports is 9600 baud TAIP.

Also provided is support for PPP over RS232C on Port 1. An IP capable XTL5000 radio may be interfaced to the port to allow wireless transmission of TAIP messages to an AVL server. The TAIP messages will be encapsulated in UDP packets and sent to a configurable destination IP address and port. TAIP messages may also be sent back to the TrimFleet DRU Plus by the AVL application to modify reporting rates and query current location or status.

Vehicle location is available only on ASTRO Conventional or Trunking IV&D Systems. Subscribers must have version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software.

Digital Conventional Ordering requirements for XTL5000 Mobile:

- Requires Control Head (G442) or O3 Control Head (G72)
- ASTRO Digital CAI Operation (G806)
- Conventional Operation (G48)
- Packet Data Interface (W947)
- Mid Power RS232 Cable (G303 Dash / G304 Remote) *(Hooks to the J2 rectangular and DB9 connector)*
- High Power RS232 Cable (HKN6122) (Hooks to the DB25 connector and the DB9 connector)

P25 Trunking Ordering requirements for XTL5000 Mobile:

- Requires G51 Smartzone Operation (G51)
- Project 25 9600 Baud Trunking (G361)

Description	Nomenclature	APC	Price
TrimFleet DRU Plus GPS Receiver	DDN9439	500	$695.00
Ships standard with the power cable			
TrimFleet APU GPS Receiver	DDN9440	500	$595.00
Ships standard with the power cable			
GPS Antenna Bundle	DDN9474	500	$99.00

Section E: Aftermarket Accessories

Algorithm Kits

(Additional Algorithm Kits are being created and will added in the near future)

XTL5000 AES256, ADP	NNTN8328A	585	$997.00
XTL5000 DES-XL, DES-OFB, ADP	NNTN8327A	585	$998.00
XTL5000 DES-XL, DES-OFB, AES256, AD	NNTN8326A	585	$1,499.00
XTL5000 AES256	NNTN8331A	456	$795.00

Antenna

7/800

Description	Nomenclature	APC	Price
ANTENNA (762-870 MHZ) 3DB LOW-PROFILE	HAF4013	500	$43.00

ANTENNA (762-870 MHZ) 3DB ELEVATED FEED	HAF4014	500	$75.00
ANT 3DB MCYCLE 762-870MHZ	HAF4015	500	$56.00
ANTENNA (762-870 MHZ) 1/4 WAVE	HAF4016	500	$23.00
ANTENNA (762-870 MHZ) 3DB GAIN COLLINEAR	HAF4017	500	$38.00
ANT 3DB LOW PRO MCYC 762-870MH	HAF4018	500	$75.00

UHF R1/R2

Description	Nomenclature	APC	Price
ANTENNA, UHF (450-470 MHZ) 1/4 WAVE ROOF MOUNT Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: Unity, VSWR: Less than 2:1, Impedance: 50 Ohms, nominal	HAE4003	554	$21.50
~~ANTENNA UHF (445-470 MHZ) 3.5DB GAIN ROOF MOUNT~~ Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedance: 50 Ohms, nominal.	~~HAE4011~~	~~554~~	~~$77.50~~
ANTENNA UHF (380-433 MHZ) 3.5DB GAIN	HAE6010	476	$63.00
ANTENNA UHF (380-433 MHZ) 5DB GAIN	HAE6011	585	$63.00
ANTENNA 1/4 WAVE WHIP 380-433 MHZ	HAE6012	585	$23.00
ANTENNA WIDEBAND 2.0DB GAIN 380-470 MHZ	HAE6013	585	$55.00
ANTENNA UHF (445-470 MHZ) 5DB GAIN Roof Mount, SPECTRUM Base Loaded 5 dB Gain Antenna, Cable: RG58 A/U, Rugged Duty, Mini UHF connector.	RAE4014ARB	554	$110.00
ANTENNA UHF 1/4 WAVE	RAE4024ARB	554	$100.00
ANTENNA, UHF (470-512 MHZ) 1/4 WAVE ROOF MOUNT Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: Unity, VSWR: Less than 2:1, Impedance: 50 Ohms, nominal	HAE4004	554	$20.00
ANTENNA, UHF (470-494 MHZ) 3.5DB GAIN ROOF TOP Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedance: 50 Ohms, nominal.	HAE4012	554	$68.00
ANTENNA, UHF (494-512 MHZ) 3.5DB GAIN ROOF TOP Roof Mount, Mini UHF connector, Power: 150 Watts Max., Gain: 3.5 dB nominal, VSWR: 1.5:1, Impedance: 50 Ohms, nominal.	HAE4013	554	$72.00
ANTENNA UHF 1/4 WAVE	RAE4024ARB	554	$100.00
ANTENNA UHF (494-512 MHZ) 5DB GAIN Roof Mount, SPECTRUM Base Loaded 5 dB Gain Antenna, RG58 A/U Cable, Rugged Duty, Mini UHF connector	RAE4016ARB	554	$144.00

VHF

Description	Nomenclature	APC	Price
ANTENNA, VHF (136-144MHZ) 1/4 WAVE ROOF TOP High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohmns, nominal	HAD4006	554	$19.50
ANTENNA, VHF (144-150.8 MHZ) 1/4 WAVE ROOF TOP High Band Quarter Wave Antenne. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohmns, nominal	HAD4007	554	$19.50
ANTENNA, VHF (150.8-162 MHZ) 1/4 WAVE ROOF TOP High Band Quarter Weve Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less then 1.5:1, Impedance 50 Ohmns, nominal	HAD4008	554	$19.50
ANTENNA, VHF (162-174 MHZ) 1/4 WAVE ROOF TOP High Band Quarter Wave Antenna. Roof Mount, Mini UHF Connector, Frequency Range: 132-174 MHz., Power: 150 Watts Max., Gain: Unity, VSWR: Less than 1.5:1, Impedance 50 Ohmns, nominal	HAD4009	554	$19.50
ANTENNA VHF 1/4 WAVE	RAD4002ARB	554	$100.00

ANTENNA VHF 1/4 WAVE	RAD4004ARB	554	$100.00
ANTENNA VHF 1/4 WAVE	RAD4005ARB	554	$75.00
ANTENNA, VHF (136-174 MHZ 3.4 MHZ BANDWITH) 3DB ROOF TOP High Band Base Loaded Antenna - Mini UHF connector, Roof Mount, RG58A/u Cable, Rugged Duty, Frequency Range 136-174 MHz., Power: 150 Watts Max., Gain: 3 dB, nominal, VSWR: Less than 1.5:1, Impedence: 50 Ohms, nominal	RAD4010ARB	554	$82.00
ANT ROOF MT WB VHF 146/174	HAD4017A	500	$44.00

Adapters

Description	Nomenclature	APC	Price
AUDIO CABLE ADAPTER	HKN6158	500	$49.00
ADAPTER CABLE DATA	HKN6159	500	$49.00
KEYLOADING CABLE ADAPTER (GCAI) Used to adapt keyload cable TKN8531 for all APX 7500, APX,6500, APX4500, XTL 5000 and XTL 2500. Not compatible with XTL1500.	HKN6182	514	$41.50

Bull Horns for Sirens and Public Address

Description	Nomenclature	APC	Price
SPEAKER SIREN, ROUND W/CHROME & BLACK	TDN6251	706	$329.00
SPEAKER RECTANGULAR WITH CHROME FINISH	TDN6252	706	$265.00
SPEAKER UNDERHOOD WITH GRAY FINISH	TDN6253	706	$220.00
SPEAKER ROUND WITH GRAY FINISH	TDN6254	706	$248.00

Control Station Tray and Power Supply

Description	Nomenclature	APC	Price
MOBILE DESK TRAY	HLN6042	617	$77.00
PS 14V 10A 117/240 VAC.	HPN4007C	500	$296.00

Customer Programming Software

Programming and Data Cables
(Please see CPS PART NUMBER GUIDE for cable descriptions)

CABLE, DATA, USB, 4.5M, XTL5000	HKN6172B	500	$85.00

DEK/VIP

Description	Nomenclature	APC	Price
AUDIO CABLE ADAPTER	HKN6158	500	$49.00
ADAPTER CABLE DATA	HKN6159	500	$49.00
KEYLOADING CABLE ADAPTER (GCAI) Used to adapt keyload cable TKN8531 for all APX 7500, APX,6500, APX4500, XTL 5000 and XTL 2500. Not compatible with XTL1500.	HKN6182	514	$41.50

Emergency

Description	Nomenclature	APC	Price
EMERGENCY FOOT SWITCH	HLN5113	604	$61.75

Microphones

XTL5000 KEYPAD MICROPHONE	HMN4079D	500	$320.00
AS. SPECTRA & XTL5000 DESKTOP MIC	RMN5070A	706	$172.00
HANDSET/HANGUP (HANGUP CUP)	HLN1457	706	$285.00
MODEL III KEYPAD TELEPH HANDSET KIT	HMN4097A	706	$295.00
PUSH BUTTON PTT	RLN5926A	706	$39.00

Microphone Extension Cable

Description	Nomenclature	APC	Price
CABLE, MOBILE MIC EXTENSION, 10FT	PMKN4033A	706	$42.00

Not for use with the W20 GCAI Microphone.

Motorcycle Weather Proof Housing

Power

Description	Nomenclature	APC	Price
POWER CABLE, 10 FT. (LOW/MID POWER) 30 & 35 WATT	HKN4191	412	$18.00
POWER CABLE, 20 FOOT TO 12V BATTERY	HKN4192	508	$38.25
VHF & UHF models.			
CABLE, POWER, 100W	HKN6110	585	$37.00
CONTROL HEAD / IGNITION SENSE POWER CABLE	HKN6188	514	$20.75

Programming AND Flash

Remote Mount

CABLE, REMOTE MOUNT, 75 FT	HKN6166	514	$80.00
CABLE, REMOTE MOUNT, 115 FT	HKN6165	514	$105.00
CABLE,REMOTE MOUNT,131 FT	HKN6164	514	$122.00
O3 CAN 17' EXTENSION CABLE	PMLN4958A	585	$94.50

O3 Remote Mount Cable. Included in C3 Remote Mount G67 Option

Siren/DEK

Please include the H1831 model when ordering the following for DEKs:

Description	Nomenclature	APC	Price
ODYSSEY CH DEK KIT	H1831	500	$35.75
Includes cable and mounting hardware.			
8 STATUS/MESSAGE (W355)	H1338	604	$475.00

Message buttons are inlcuded, however, they are ONLY applicable for systems 3.X and earlier.

Speakers

Description	Nomenclature	APC	Price
MCS EXT SPKR 13W	HSN4032B	500	$71.50
EXTERNAL 7.5 WATT WATER RESISTANT REMOTE MOUNT	HSN4038	476	$60.50

SPEAKER

MCYCLE WP SPEAKER	HSN6003B	500	$63.50

Miscellaneous

Description	Nomenclature	APC	Price
WILDCARD	HLN1196	412	$165.00

Manuals

*** Currently, the XTL5000 O5 User Guide (HLN6951A) and the XTL5000 O5 Install Manual (HLN6947A) can be downloaded from MOL (Motorola Online). ***
*** The documents can be found in Resource Center > Product Information >Manuals >Two-Way Mobile > Astro XTL5000. ***

Section F: Retrofit Mounting Kits

PLEASE READ ALL ALLIED MODEL AND OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

Retrofit Mounting Kits

Remote to Dash

Converts an existing remote mounted XTL5000 O5 mobile radio or an existing remote mounted XTL2500 to a dash mounted radio. Applicable to Low/Mid power models only.

Description	Nomenclature	APC	Price
REMOTE TO DASH RETROFIT KIT FOR O5 OR XTL2500 Contains dash mount headbridge hardware. Does not include transciever trunion. Does not include a control head.	H1817	514	$75.00

Dash to Remote

Converts an existing dash mounted XTL5000 O5 mobile radio or an existing dash mounted XTL2500 mobile radio to a remote mounted radio. Applicable to Low/Mid power models only.

*****Due to the evolution of the O5 control head, please follow these guidelines when ordering a dash to remote retrofit kit:**

1. If you are retrofitting XTL5000 O5 or XTL2500 radios that shipped AFTER 7/01/06 - order the H1818.

2. If you are retrofitting XTL5000 O5 radios that shipped BEFORE 7/01/06 - you MUST ORDER the H1824. If you are retrofitting XTL2500 radios that shipped BEFORE 7/1/06 - Please see the XTL2500 price page.

Description	Nomenclature	APC	Price
O5/M5 DASH TO O5/M5 REMOTE RETROFIT KIT Contains rear housing for remote O5, O5 control head remote mounting hardware, remote O5 power cable, remote transciever faceplate. Remote cable available as option.	H1818	514	$325.00

Does not include transciever trunion. Does note include O5 control heed.			
O5 DASH TO REMOTE RETROFIT W/CH	H1824	500	$525.00
Contains complete O5 remote control head replacement, O5 control head remote mounting hardware, remote O5 power cable, remote transciever faceplate. Remote cable available as option. Does not include transciever trunion.			

Remote Mount Cables

(Cable option is not required. If cable option is ordered - may only select one)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
~~ADD: REMOTE MOUNT CABLE 17 FT~~ Corresponding kit: HKN6169	~~G628~~	~~514~~	~~$15.00~~
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6166	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT) ***For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio*** Corresponding kit: HKN6164	G582	514	$65.00

Section G: Control Head Conversion Allied Sales Models

PLEASE READ ALL ALLIED MODEL AND OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

***IF YOU ARE ADDING A CONTROL HEAD TO CONVERT A SINGLE CONTROL REMOTE MOUNT RADIO TO A DUAL, TRI, OR QUAD CONTROL, THEN YOU MUST MAKE SURE THE RADIO HAD VERSION 6.9 SOFTWARE OR GREATER.

THE ALLIED SALES MODEL BELOW DOES NOT INCLUDE A FLASH FIRMWARE REFRESH. PLEASE SEE FLASH UPGRADE PRICE PAGE ***

FIRMWARE VERSION R09.00.00 OR HIGHER IS REQUIRED.

Control Head Conversion Allied Sales Models

The XTL5000 O5 control head conversion allied sales models provide the necessary equipment to convert existing XTL5000 mobile radios with ASTRO Spectra control heads (W3/W4/W5/W7/W9) to an XTL5000 O5 mobile radio.

O5 Dash - Mid Power ONLY

(Can convert either a dash or remote mounted XTL5000 with W3/W4/W5/W7/W9 control head to a dash mounted XTL5000 O5)

Description	Nomenclature	APC	Price
O5 MID POWER DASH CONVERSION KIT	H1819	500	$650.00

Contains complete O5 dash control head and O5 dash tranaceiver faceplate. O5 mic available as option. Does not include transceiver trunion. If you have a secure capable unit with HLN6876 (3 DAY KEY RETENTION BOARD) or HLN6877 (30 SEC KEY RETENTION BOARD), you must replace it with either MHLN6918 (3 DAY KEY RETENTION BOARD) or MHLN6919 (30 SEC KEY RETENTION BOARD).

Microphones *(Must Select One and Only One)*

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED	G90	500	$0.00
Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ADD: PALM MICROPHONE	W22	500	$72.00
Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090			
ADD: KEYPAD MIC (GCAI)	W20	514	$180.00
Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079			

O5 Remote - Mid Power ONLY

(Can convert either a dash or remote mounted XTL5000 with W3/W4/W5/W7/W9 control head to a remote mounted XTL5000 O5)

Description	Nomenclature	APC	Price
O5 MID POWER REMOTE CONVERSION KIT	H1820	500	$850.00
Contains complete O5 remote control head, O5 control head remote mounting hardware, remote O5 power cable, O5 remote transceiver faceplate. Remote cable and O5 mic available as option. Does not include transceiver trunion. If you have a secure capable unit with HLN6876 (3 DAY KEY RETENTION BOARD) or HLN6877 (30 SEC KEY RETENTION BOARD), you must replace it with either MHLN6918 (3 DAY KEY RETENTION BOARD) or MHLN6919 (30 SEC KEY RETENTION BOARD).			

Microphones
(Must Select One and Only One)

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED	G90	500	$0.00
Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ADD: PALM MICROPHONE	W22	500	$72.00
Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090			
ADD: KEYPAD MIC (GCAI)	W20	514	$180.00
Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079			

Remote Mount Cables

(Cable option is not required. If cable option is ordered - may only select one)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00

ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6166	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00
~~ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT)~~ ***For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio*** Corresponding kit: HKN6164	~~G582~~	~~514~~	~~$65.00~~

O5 Remote - HIGH Power ONLY

(Can convert a high power remote mounted XTL5000 with W3/W4/W5/W7/W9 control head to a high power remote mounted XTL5000 O5)

Description	Nomenclature	APC	Price
O5 HIGH POWER REMOTE CONVERSION KIT HIGH POWER ONLY. Contains complete O5 remote control head, O5 control head remote mounting hardware, remote O5 power cable, O5 remote transciever faceplate. Remote cable and O5 mic available as option. Does not include high power transciever trunion. If you have a secure capable unit with HLN6678 (3 DAY KEY RETENTION BOARD) or HLN6677 (30 SEC KEY RETENTION BOARD), you must replace it with either MHLN6918 (3 DAY KEY RETENTION BOARD) or MHLN6919 (30 SEC KEY RETENTION BOARD).	H1821	500	$850.00

Microphones *(Must Select One and Only One)*

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G767. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.	G90	500	$0.00
ADD: PALM MICROPHONE Corresponding kit for W4, W5, W7: HMN1060 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090	W22	500	$72.00
ADD: KEYPAD MIC (GCAI) Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079	W20	514	$180.00

Remote Mount Cables

(Cable option is not required. If cable option is ordered - may only select one)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT	G628	514	$15.00

Corresponding kit: HKN6169			
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT)	G610	514	$25.00
Corresponding kit: HKN6166			
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT)	G609	514	$35.00
Corresponding kit: HKN6167			
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT)	G607	514	$45.00
Corresponding kit: HKN6166A			
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT)	G879	514	$55.00
Corresponding kit: HKN6165			
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT)	G582	514	$65.00

For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio

~~Corresponding kit: HKN6164~~

O3 Remote

*(Can convert a XTL5000 with W3/W4/W5/W7/W9 or **O5** control head to a remote mounted XTL5000 O3)*

Description	Nomenclature	APC	Price
W3 TO O3 CONVERSION KIT	H1829	514	$850.00

Contains complete O3 remote control head, 17? remote O3 extension cable, accessory ceble, O3 remote transceiver faceplate, standard TIB, and high power flex assembly. Does not include transceiver trunion. Does not include HKN6190 mid power flex; you must order HKN6190 separately for mid power.

O5 Motorcycle - Mid Power ONLY

(Can convert a mid power motorcycle mounted XTL5000 with W4/W5/W7 control head to a mid power motorcycle mounted XTL5000 O5)

Description	Nomenclature	APC	Price
O5 MOTORCYCLE CONVERSION KIT	H1822	500	$900.00

Contains complete O5 motorcycle control head, O5 control head motorcycle mounting hardware, O5 motorcycle transciever faceplate. Also includes O5 motorcycle mic and motorcycle control head to transciever control and power ceble. Does not include tranaciever trunion or weatherproof housing. If you have a secure capable unit with HLN6876 (3 DAY KEY RETENTION BOARD) or HLN6877 (30 SEC KEY RETENTION BOARD), you must raplace it with either MHLN6916 (3 DAY KEY RETENTION BOARD) or MHLN6919 (30 SEC KEY RETENTION BOARD).

Section H: Remote Control Head Replacement AND Multiple Control Head Retrofit Allied Sales Model

PLEASE READ ALL ALLIED MODEL AND OPTION DESCRIPTIONS BEFORE MAKING YOUR SELECTION

Remote Control Head Replacement AND Multiple Control Head Retrofit Kit

The XTL5000 O5 Remote Control Head Replacement AND Multiple Control Head Retrofit allied sales model provide the following:

- QTY 1: **REMOTE** mount control head assembly that includes a control head + flex cable + control head interface board rear housing (CHIB)

- Qty 1: Remote Control Head Power cable (HKN6188)
- Qty 1: Remote Control Head Mounting trunion and hardware
- Qty 1: Manual CD and dust cover kit
- OPTION: Must select a microphone option
- OPTION: Must select a speaker option
- OPTION: Must select a remote cable option

***IF YOU ARE ADDING A CONTROL HEAD TO CONVERT A SINGLE CONTROL REMOTE MOUNT RADIO TO A DUAL, TRI, OR QUAD CONTROL, THEN YOU MUST MAKE SURE THE RADIO HAD VERSION 6.9 SOFTWARE OR GREATER.

THE ALLIED SALES MODEL BELOW DOES NOT INCLUDE A FLASH FIRMWARE REFRESH. PLEASE SEE FLASH UPGRADE PRICE PAGE ***

FIRMWARE VERSION R09.00.00 OR HIGHER IS REQUIRED.

Description	Nomenclature	APC	Price
O5 REMOTE CTRL HD/CHIB REPLACEMENT/ADDITION	H1823	500	$570.00

Microphones
(Must Select One and Only One)

Description	Nomenclature	APC	Price
ADD: NO MICROPHONE NEEDED	G90	500	$0.00
Select this option when ordering W3 Handheld Control Head (G92/G72) For Remote Monitor with XTL 5000 with W4/W5/W7/W9 you must order mic option G787. For Remote Monitor with XTL 5000 O5 and XTL 2500 you must order mic option W20.			
ADD: PALM MICROPHONE	W22	500	$72.00
Corresponding kit for W4, W5, W7: HMN1080 Corresponding kit for W9: HMN1081 Corresponding kit for O5 and XTL2500: HMN1090			
ADD: KEYPAD MIC (GCAI)	W20	514	$180.00
Compatible with motorcycle configuration. Supports Remote Monitor for XTL 5000 O5 and XTL 2500. Remote Monitor feature requires G170 software option. Required for Emergency Hot Mic Operation. Corresponding kit: HMN4079			

Speakers
(Must Select One and Only One)

Description	Nomenclature	APC	Price
DEL: OMIT SPEAKER	G142	500	$0.00
ADD: AUXILARY SPKR SPECTRA 7.5 WATT	B18	500	$60.00
Corresponding kit: HSN4031.			
ADD: INCREASED AUDIO POWER 13W	W432	500	$71.50
Corresponding kit: HSN4032. NOT COMPATIBLE with W665 Control Station and Motorcycle Configuretion.			
ADD: 7.5 WATT WATER RESISTANT SPEAKER	G832	500	$40.00
MUST also order e speaker option (either B18 or G142)			

Remote Mount Cables
*****For Dual/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters)*****
(Muet Select One and Only One)

Description	Nomenclature	APC	Price
DEL: NO REMOTE CABLE NEEDED	GA00179	500	$0.00
ADD: REMOTE MOUNT CABLE ? 3 METERS (10 FT) Corresponding kit: HKN6170	G618	514	$10.00
ADD: REMOTE MOUNT CABLE 17 FT Corresponding kit: HKN6169	G628	514	$15.00
ADD: REMOTE MOUNT CABLE ? 10 METERS (30 FT) Corresponding kit: HKN6168	G610	514	$25.00
ADD: REMOTE MOUNT CABLE ? 15 METERS (50 FT) Corresponding kit: HKN6167	G609	514	$35.00
ADD: REMOTE MOUNT CABLE ? 23 METERS (75 FT) Corresponding kit: HKN6166A	G607	514	$45.00
ADD: REMOTE MOUNT CABLE ? 35 METERS (115 FT) Corresponding kit: HKN6165	G879	514	$55.00
ADD: REMOTE MOUNT CABLE ? 40 METERS (131 FT) ***For Duel/Tri/Quad configurations, the total cable length may not be greater that 131 ft (40 meters). Therefore, this cable should not be used with a dual, tri, or quad control radio*** Corresponding kit: HKN6164	G582	514	$65.00

Deta Compiled 16-May-2013 using DUP end all prices in USD

All Prices Subject to change

Nomenclature		List
NNTN4435	IMPRES NiMH, 1800 mAh	$121.00
NNTN4436	IMPRES NiMH, 1700 mAh. Intrinsically Safe	$140.00
NNTN4437	IMPRES NiMH, 1700 mAh. Intrinsically Safe, IP57	$145.00
NTN9862	IMPRES Li-ion, 2750 mAh	$150.00
NNTN6034	IMPRES Li-ion, 4150 mAh	$155.00
NNTN7453	IMPRES Li-ion, 3950 mAh, Intrinsically Safe, Rugged	$169.00
HNN9031	IMPRES NiCd, 1525 mAh	$103.00
HNN9032	IMPRES NiCd, 1525 mAh. Intrinsically Safe	$125.00
PMMN4093	IMPRES NiMH, 3000 mAh	$125.00
NTN8294	NiCd, 1525 mAh	$95.00
NTN8295	NiCd, 1525 mAh. Intrinsically Safe	$115.00
NTN8297	NiCd, 1525 mAh. Intrinsically Safe, IP57	$125.00
NTN8299	NiMH, 1700 mAh. Intrinsically Safe	$135.00
NTN8923	NiMH, 1800 mAh	$115.00
RNN4006	NiMH, 3000 mAh	$125.00
RNN4007	NiMH, 3000 mAh. Intrinsically Safe	$150.00
NTN9177	Clamshell–Black. Twelve AA Alkaline batteries required, sold separately.	$66.00
NTN9183	Clamshell–Orange. Twelve AA Alkaline batteries required, sold separately.	$66.00
NTN8387A	Leather Carry Case with fixed belt loop, D-rings and T-strap	$51.00
NTN8385B	High-Activity Swivel Leather Case Features 2.5 inch swivel belt loop, D-rings and T-strap.	$60.00
NTN8386B	High-Activity Swivel Leather Case Features 3 inch swivel belt loop, D-rings and T-strap.	$60.00
NTN8725A	High-Activity Nylon Case with fixed belt loop and T-strap	$51.00
NTN8382B	Leather Case with fixed belt loop, D-rings and T-strap	$51.00
NTN8380C	High-Activity Swivel Leather Case Features 2.5 inch swivel belt loop, D-rings and T-strap.	$60.00
NTN8381C	High-Activity Swivel Leather Case Features 3 inch swivel belt loop, D-rings and T-strap.	$60.00
NTN8725A	High-Activity Nylon Case with fixed belt loop and T-strap	$51.00
NTN9184A	Leather Case with Belt Loop. For Clamshell batteries only.	$67.00
NTN5243A	Adjustable, Black Nylon Carrying Strap. Attaches to D-ring on cases	$23.00
NTN8383A	Leather T-strap, Plain Action Snap	$10.50
NTN8384A	Leather T-strap, Hard Action Snap. Provides additional strength at the snap.	$10.50
NTN8039B	2.5 inch Leather Replacement Swivel Belt Loop	$12.00
NTN8040B	3 inch Leather Replacement Swivel Belt Loop	$12.00
HLN6875	3" PLASTIC BELT CLIP ATTACHMENT	$12.00
NTN8266B	Standard Removable 2.25 inch Belt Clip Attachment	$12.00
NTN9213	BELT LOOP, HIGH ACTIVITY D CLIP	$20.00
NTN9212A	D-button for Battery Pack	$30.00
NTN9179A	D-button with Belt Loop	$42.00
HLN6602A	Universal Chest Pack with Radio Holder, Pen Holder, and Velcro Secured Pouch	$38.00
1505596Z02	Replacement Strap for HLN6602A/RLN4570A	$5.00
RLN4570A	Break-a-Way Chest Pack with Radio Holder,Pen Holder, and Velcro Secured Pouch.	$54.25
1505596Z02	Replacement Strap for HLN6602A/RLN4570A	$5.00
RLN4815A	RadioPAk Radio/Utility Case	$45.00
4280384F89	RadioPAk Extension Belt for waists larger than 40 inches.	$5.00
HLN9985B	Waterproof Bag with Large Strap	$36.00
TDN9327A	Portable Radio Hanger for door panels up to 2.75 inches.	$28.50
TDN9373A	Portable Radio Hanger for door panels 2.75 to 3.25 inches.	$18.00
WPLN4111	IMPRES Single-Unit Charger, 110 Volt, US Plug	$165.00
WPLN4130	IMPRES Multi-Unit Charger with Display Modules, 110 Volt, US Plug	$1,350.00
NLN7967	Wall Mount for Multi-Unit Charger	$21.00
WPLN4108	IMPRES Multi-Unit Charger, 110 Volt, US Plug	$788.00
NLN7967	Wall Mount for Multi-Unit Chargers	$21.00
RLN5382	Charger Display Module for IMPRES Multi-Unit Charger with Software version 1.3 or Later.	$95.00
NTN1667	Universal Charger, 110 Volt, US Plug	$100.00
WPLN4086	Charger Kit, 110 Volt AC. Includes single-unit base and 7 Volt adapter plate.	$70.00
WPPN4002	110 Volt AC Single-Unit Base Charger Only. Adapter plates sold separately	$67.00
WPPN4021	7 Volt Adapter Plate	$15.00

	Multi-Unit Conditioning Charger, 4-Station Base, 110 Volt.	
WPPN4065	Adapter plates sold separately	$399.00
	Vehicular Mounting Bracket and Hard Wire Cable	
	For Single-Unit Motorola Conditioning Chargers.	
RLN4814	Includes DC Hard Wire Cable 3080384M21	$35.00
3080384M21	DC Hard Wire Cable with 3 A in-line fuse	$15.00
WPLN4079	6-Station BMS PLUS, 110 Volt AC, 50/60 Hz, US Plug	$650.00
	BMSPLUS Li-ion Field Upgrade Kit. Upgrades WPLN4079AR, WPLN4080AR,	
WPPN4085	WPLN4081AR. Allows units to support Li-ion batteries	$115.00
NDN4005	3-Station BMS, 110 Volt AC, 50/60 Hz. Does not support Li-ion or 3-cell batteries.	$499.00
NDN4006	3-Station BMS, 230 Volt AC, 50/60 Hz. Does not support Li-ion or 3-cell batteries.	$499.00
WPPN4019	Adapter. Compatible with NiCd batteries only	$49.00
WPPN4022	Adapter. Compatible with both NiCd and NiMH batteries.	$69.00
WPPN4086	Adapter. Compatible with NiCd, NiMH and Li-ion batteries.	$120.00
WPLN4124	BOS II, 4-Station, 90-264 Volt AC, US Plug. Adapter Plates Required.	$2,106.00
RL-75765	BOS II Battery Adapter. For use with ASTRO XTS 5000/3500/3000 radios.	$115.00
RLN4884	Vehicular Travel Charger	$95.00
	Universal Mounting Bracket for RLN4884B.	
RLN5914	Includes screws and nylon strap cord.	$14.75
2580600E05	Transformer, 120 Volt, US	$21.75
WPLN4208	IMPRES Compatible Vehicular Charger	$390.00
	(CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB)	
NNTN4186	CommPort with Body Push-to-talk (Includes 3.5mm adapter BDN6676D.)	$513.00
NTN1624A	Commport with Palm Push-to-Talk (Includes 3.5mm adapter BDN6676D.)	$419.00
NTN1625	Commport with Push-to-Talk on Radio Adapter (Includes 3.5mm adapter BDN6676D.)	$419.00
NTN1663	Commport with Ring Push-to-Talk (Includes 3.5mm adapter BDN6676D.)	$429.00
NTN1736	Commport with Snap-On-Side Push-to-Talk (Includes 3.5mm adapter BDN6676D.)	$429.00
NKN6510A	Replacement Palm Push-to-Talk Cable for NTN1624A	$53.00
NKN6512A	Replacement Ring Push-to-Talk Cable for NTN1663A	$60.25
NKN6525A	Replacement Snap-On-Side Push-to-Talk Cable for NTN1736A	$75.00
NNTN4188A	Replacement Remote Push-to-Talk Body Switch for NNTN4186A	$160.00
NKN6508A	Replacement Cable for NTN1625A	$34.50
NTN8819	Ear Microphone Assembly	$291.00
NTN8821A	CommPort Maintenance Kit. Includes 10 replacement ear tubes, 10 microphone seal strips and 2 windscreens.	$46.00
NTN8986A	Adhesive Pads. For secure attachment to ear. Pack of 90.	$23.00
NTN8988A	Ear Straps. For secure attachment to ear. Pack of 10.	$17.25
RLN5037A	Replacement Ear Tubes. Pack of 10.	$26.00
4285838B01	Replacement Collar Clip	$3.45
4202006A01	Replacement Back Cover Clip	$20.00
8DN6676	3.5mm jack adapter with Quick Disconnect Latch	$52.50
HMN4106	GPS II Remote Speaker Microphone, Windporting, IP57 Submersible (Rugged)	$350.00
HMN4107	GPS II Remote Speaker Microphone with 3.5mm audio jack, Windporting	$350.00
	If an Intrinsically Safe model is required, please purchase our original GPS microphones:	
HMN4080	GPS Remote Speaker Microphone, IP57 Submersible (Rugged2)	$350.00
HMN4084	GPS Remote Speaker Microphone with 3.5mm audio jack	$350.00
PMMN4038	Windporting Remote Speaker Microphone, IP57 Submersible	$88.50
PMMN4051	Windporting Remote Speaker Microphone with 3.5mm audio jack at the head of the microphone and threaded jack	$89.00
0104023J42	Replacement Coil Cord Assembly for PMMN4038A	$37.00
0104034J91	Replacement Coil Cord Assembly for PMMN4051A	$52.00
RMN5038A	Remote Speaker Microphone with Orange Programmable Button	$120.00
PMMN4045	Noise-Canceling Remote Speaker Microphone	$97.00
0104034J90	Replacement Coil Cord Assembly for PMMN4045A	$52.00
RMN5066	Remote Speaker Microphone, Submersible (Rugged)	$215.00
RMN5067	Remote Speaker Microphone with 3.5mm audio jack	$150.00
RMN5088	Remote Speaker Microphone with Channel Selector, Submersible (Rugged2)	$215.00
RMN5089	Remote Speaker Microphone with Channel Selector and 3.5mm audio jack	$150.00
RLN4941	Receive-Only Earpiece with Translucent Tube and Rubber Eartip	$58.00
RLN6242	Quick Disconnect Acoustic Tube replacement for RLN4941	$7.90
AARLN4885	Receive-Only Earbud	$25.00
WADN4190	Receive-Only Flexible Earpiece	$43.00

PMLN4620	Receive-Only D-shell Earpiece	$19.00
NMN6247	UHF Public Safety Microphone with 30 inch Straight Cord. Requires RF adapter.	$155.00
NMN6250	UHF Public Safety Microphone with 24 inch Straight Cord. Requires RF adapter.	$155.00
NMN6251	UHF Public Safety Microphone with 18 inch Straight Cord. Requires RF adapter.	$155.00
NTN8327	RF Adapter. Required for use with all UHF Public Safety Microphones.	$140.00
6685687A02	RF Adapter Tool	$17.00
RLN4941	Receive-Only Earpiece with Translucent Tube and Rubber Eartip	$58.00
RLN6242	Quick Disconnect Acoustic Tube replacement for RLN4941	$7.90
AARLN4885	Receive-Only Earbud	$25.00
WADN4190	Receive-Only Flexible Earpiece	$43.00
PMLN4620	Receive-Only D-shell Earpiece	$19.00
BDN6664	Receive-Only Earpiece with Standard Earphone (1-Wire), Beige	$40.00
BDN6665	Extra Loud Receive-Only Earpiece with Standard Earphone (1-Wire), Beige	$42.00
BDN6726	Receive-Only Earpiece with Standard Earphone (1-Wire), Black	$40.00
BDN6727	Extra Loud Receive-Only Earpiece with Standard Earphone (1-Wire), Black	$42.00
BDN6667	Earpiece with Microphone and Push-to-Talk Combined (2-Wire), Beige	$114.00
BDN6669	Extra Loud Earpiece with Microphone and Push-to-Talk Combined (2-Wire), Beige	$116.00
BDN6729	Earpiece with Microphone and Push-to-Talk Combined (2-Wire), Black	$114.00
BDN6731	Extra Loud Earpiece with Microphone and Push-to-Talk Combined (2-Wire), Black	$116.00
BDN6668	Earpiece with Microphone and Push-to-Talk Separate (3-Wire), Beige	$150.00
BDN6670	Extra Loud Earpiece with Microphone and Push-to-Talk Separate (3-Wire), Beige	$135.00
BDN6730	Earpiece with Microphone and Push-to-Talk Separate (3-Wire), Black	$150.00
BDN6732	Extra Loud Earpiece with Microphone and Push-to-Talk Separate (3-Wire), Black	$135.00
RLN5314	Comfort Earpiece, Receive-Only, Beige	$54.00
RLN5313	Comfort Earpiece, Receive-Only, Black	$54.00
RLN5312	Earpiece with Microphone and Push-to-Talk Combined (2-Wire), Black	$123.00
RLN6230A	Extreme Noise Kit. Includes 2 foam earplugs. For high-noise environments. Noise reduction = 24dB. Can be used with Clear Comfortable Earpieces, Black	$32.00
RLN6231A	Noise reduction = 24dB. Can be used with Clear Comfortable Earpiaces, Black Noise reduction = 24dB. Can be used with Clear Comfortable Earpieces, Beige	$32.00
RLN6232A	Low Noise Kit–Clear Acoustic Tube Assembly. Includes 1 clear rubber eartip. For low-noise environments, does not provide hearing protection, Black	$20.00
RLN6241A	Low Noise Kit–Clear Acoustic Tube Assembly. Includes 1 clear rubber eartip. For low-noise environments, does not provide hearing protection, Beige	$20.00
5060369E39	Extra Loud Earphone, Beige	$38.75
5060370E91	Extra Loud Earphone, Black	$36.75
RLN6242A	Quick Disconnect Acoustic Tube Replacement	$7.90
5080384F72	Replacement Foam Plugs. Noise reduction = 24dB. Pack of 50. For RLN6230A and RLN6231A.	$47.25
5060370E97	Replacement Standerd Clear Rubber Eartips. Pack of 25. For RLN6232A and RLN6241A.	$29.25
BDN6876D	3.5 mm Threeded edapter jack with Quick Disconnect Latch	$52.50
RLN4760A	Small Custom Earpiece–Right Ear	$20.50
RLN4761A	Medium Custom Earpiece–Right Ear	$20.50
RLN4762A	Large Custom Earpiece–Right Ear	$20.50
RLN4763A	Small Custom Earpiece–Left Ear	$20.50
RLN4764A	Medium Custom Earpiece–Left Ear	$20.50
RLN4765A	Large Custom Earpiece–Left Ear	$20.50
RLN4922A	Completely Discreet Earpiece Kit	$340.00
RLN4919A	Replacement Earguards. 5 per pack	$15.75
PMLN5464	Ear Microphone System with Bone Conduction (FM)	$395.00
0180358B38	Legacy Remote Push-to-Talk Ring Switch (FM)	$52.50
0180300E83	Legacy Remote Push-to-Talk Body Switch (FM)	$159.00
0180300E25	Earguard with Adjustable Loop	$45.75
0180358B32	Earholder. Black, size small. Secures Ear Microphone in ear.	$20.00
0180358B33	Earholder. Black, size medium. Secures Ear Microphone in ear	$20.00
0180358B34	Earholder. Black, size large. Secures Ear Microphone in ear.	$20.00
0180358B35	Earholder. Clear, size small. Secures Ear Microphone in ear.	$20.00
0180358B36	Earholder. Clear, size medium. Secures Ear Microphone in ear.	$20.00
0180358B37	Earholder. Clear, size large. Secures Ear Microphone in ear.	$20.00
4280369E44	Replacement Belt Clip with Screws	$3.50
5080358B28	Eartips. Black, size medium. Pack of 10.	$55.75
5080358B29	Eartips. Black, size large. Pack of 10.	$55.75

5080358B30	Eartips. Beige, size medium. Pack of 10.	$55.75
5080358B31	Eartips. Beige, size large. Pack of 10.	$55.75
PMLN5792	Mission Critical Wireless Adapter	$135.00
NTN2573	Mission Critical Wireless Earpiece and PTT (9.5 inch cable)	$295.00
NTN2570	Mission Critical Wireless Earpiece and PTT (12 inch cable)	$295.00
NTN2571	Mission Critical Wireless Push-to-Talk (use for remote PTT)	$139.00
RLN6379A	Bluetooth Kit. Includes H300 Bluetooth headset and adapter for radios.	$209.00
98682H	H300 Bluetooth Headset	$39.99
RMN5104A	Bluetooth adapter for radios	$179.00
BDN6719	Flexible Ear Receiver with 3.5mm threaded plug, black	$35.00
BDN6676	3.5mm jack adapter with Quick Disconnect Latch	$52.50
7580372E11	Replacement Foam Ear Cushion	$1.80
BDN6780	Earbud with Microphone and Push-to-Talk. Requires adapter BDN6676	$67.00
BDN6781	Earbud, receive-only. Requires adapter BDN6676	$27.00
BDN6676	3.5mm jack adapter with Quick Disconnect Latch	$52.50
7580372E70	Replacement Foam Cushion for Pellet Earpieces	$8.40
RMN4049	Temple Transducer–Bone Conduction Headset	$225.00
0180305J46	Training CD-ROM. For Ear Microphone System and Temple Transducer.	$5.00
RMN5049	Rugged Temple Transducer	$340.00
RMN4056	Receive-Only Dual-Muff Headband Style Headset. For use with 3.5mm threaded jack. Can be plugged directly into radio with 3.5mm adapter BDN6676D. Noise reduction = 24dB	$125.00
RMN4057	Receive-Only, Dual-Muff, Hardhat Headset. Mounts easily to hard hats with slots. Can be plugged directly into radio with 3.5mm adapter BDN6676.	$125.00
BDN6676	3.5mm jack adapter with Quick Disconnect Latch	$52.50
NMN6245	Single-Muff Lightweight Headset with In-line Push-to-Talk Switch Requires audio adapter BDN6676	$149.00
NMN6246	Ultra-Light Headset with Boom Microphone, In-line Push-to-Talk Switch. Earbud style receiver. Requires audio adapter BDN6676	$129.00
BDN6676	3.5mm jack adapter with Quick Disconnect Latch	$52.50
RMN4052	Tactical Headband Style Headset. Gray, Noise reduction = 24dB	$330.00
RMN4053	Tactical Hardhat Mount Headset. Gray, Noise reduction = 22dB	$330.00
RKN4095	Adapter Cable with In-line Push-to-Talk For use with RMN4051B/RMN4052A/RMN4053A	$247.00
RLN4923B	Replacement Earseals for RMN4051B/RMN4052A/RMN4053A Includes 2 snap-in earseals	$8.75
RMN4051	Two-way, Hardhat Mount Headset with Noise-Canceling Boom Microphone. Black	$225.00
RKN4095	Adapter cable with In-line Push-to-Talk. For use with RMN4051B/RMN4052A/RMN4053A.	$247.00
NMN6258	Medium Weight, Dual-Muff, Over-the-Head Style Headset with In-line Push-to-Talk. Noise reduction rating = 24dB.	$389.00
NMN6259	Medium Weight, Dual-Muff, Behind-the-Head Style Headset Can be worn with hardhat. Noise reduction rating = 24dB.	$425.00
PMLN5278	Push-to-Talk Headset with Boom Microphone Noise reduction rating = 24dB.	$439.00
NTN8561	Closed Face with Limited Keypad Access, Mini-UHF Connector	$1,313.00
NTN8560	Open Face with Limited Keypad Access, Mini-UHF Connector	$1,208.00
NTN1607	Closed Face, BNC Connector	$1,313.00
NTN1606	Open Face with Limited Keypad Access, BNC Connector	$1,208.00
NTN8941	XTVA Data Cable Kit. Required for additional accessories.	$47.25
NTN8943	XTVA Accessory Adapter Kit. Required for additional accessories.	$17.25
NTN8940	Trunnion. Required for operation	$55.00
6685687A02	Tool Wrench for RF Switch. Required for operation.	$17.00
NTN8327	RF Switch. Required for operation.	$140.00
HMN4069	Standard White Palm Microphone	$82.50
PLN7737	Hand Held Control Head	$367.00
HSN1006	External Speaker, Amplified, 6-Watt	$104.00
HLN9330	Emergency Foot Switch	$55.00
GLN7280	Emergency Push Button	$44.00
NKN6455	MTVA PA/Speaker Cable	$10.00

8505241U03	7 inch Flexible Whip Antenna, 806-870 MHz	$35.75
8505241U11	7 inch Flexible Whip, Dual Band Antenna, 764-870 MHz	$35.00
8505241U06	4 inch Stubby Antenna, 806-941 MHz	$25.50
NAF5039	8 inch Dipole Antenna 806-870 MHz	$35.00
NAF5037	ANTENNA, 806-870 MHZ 1/2 WAVELENGTH WHIP	$35.75
NAF5080	ANTENNA 1/2 WAVE 7" WHIP 700/800 MHZ	$35.00

XTS 1500 Portable Series
900 MHz Band

Ship Card

Features

All XTS 1500 packaged models include the following hardware features:

- 3 Programmable Side Buttons
- Orange Emergency Button
- 16 Position Mode Rotary Select Switch
- On/Off Volume
- Low Battery Alert Tone
- Antenna
- Noise Reduction Software
- 1 Top Mounted Programmable Three Position Concentric Switch
- Weather Sealed Universal Connector
- Bi-Color LED Indicator
- IMPRES Nickel Metal Hydride Battery (NTN9858)
- Detachable Belt Clip
- Audio Gain Control
- 4 line alphanumeric display

All XTS 1500 Portables are part of the FLASHport program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the same RF deck.)

General Information

The XTS 1500 Portable Line offers a Model I.5 radio:

Hardware Model	Modes	Alphanumeric Display Lines/Characters Per Line	Keypad	Navigation Pad
XTS 1500 Model 1.5	256	4 lines / 12 characters	None	No

The XTS 1500 Portable is capable of 48 modes when the programmable Concentric Top Mounted Switch is used for Zone Operation. The mode of operation is programmed on a channel-by-channel basis.

There are no maximum frequency separation conditions that must be adhered to on the XTS 1500 Portable Radio Series. Separation of frequencies can be as wide as the allowable sub-band per radio model with no degradation of any performance specifications. If an incorrect antenna is used, degraded performance may be experienced.

The XTS 1500 portable can be upgraded electronically (via RS232 cable or USB cable are required for all software upgrades) in the field with new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

Please note that the XTS 1500 does NOT support FRED.

RELATIVE RADIATED RECEIVE SENSITIVITY

The relative radiated receive sensitivity test (formerly referred to as self-quieters) measure the sensitivity from 896MHz to 940Mhz in 12.5kHz steps. The radio is set to 25kHz channel mode. These measurements were taken in a shielded environment so that degraded sensitivity at discrete frequencies is known to be due to the radio's self-interference (as opposed to extemal interference.) The following list contains frequencies which were consistently found to have severely degraded performance on all measured radios: 936 MHz, 939.3 MHz

Ordering Requirements

Ordering procedure is as follows:

1	H66WCD9PW5BN	XTS 1500 Portable
1A	Q443	System Software
1B	etc	Other options

1. Order the XTS 1500 Portable Series as the main line item (H66WCD9PW5BN).
2. The hardware model MUST be ordered with one Operating Mode. Choose between Analog conventional or 3600 Analog trunking.

Legend:
Blue=Feature to be added in a Future Release
Green=New XTS 1500 Features
Programming of the following frequencies are not allowed 936 MHz, 939.3 MHz

FCC Information

FCC IDENTIFIER: AZ489FT5849

Name of Grantee: Motorola Solutions, Inc.

Equipment Class: Licensed Non-Broadcast Transmitter Held to Face

Notes: PORTABLE 2-WAY RADIO

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance	Emission Designator
	90	**896.0 - 901.0**	**2.5**	**1.5 PM**	**11K0F3E**
	90	**935.0 - 940.0**	**2.5**	**1.5 PM**	**8K10F1E**
	90	**935.0 - 940.0**	**2.5**	**1.5 PM**	**8K10F1D**
	90	**935.0 - 940.0**	**2.5**	**1.5 PM**	**11K0F3E**
	90	**896.0 - 901.0**	**2.5**	**1.5 PM**	**8K10F1E**
	90	**896.0 - 901.0**	**2.5**	**1.5 PM**	**8K10F1D**

XTS 1500 Catalog Sheet

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on XTS 1500 Dual Display Portable radios. Advanced Messaging is NOT supported on XTS 1500 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for XTS 1500 Portable Requires:

- XTS 1500 Dual Display

- ASTRO Digital CAI Operation (Q806)
- P25 Conventional (Q811)
- Packet Data Interface (Q947)

OR

- XTS 1500 Dual Display
- ASTRO Digital CAI Operation (Q806)
- ~~ASTRO Project 25 Trunking Software (Q574)~~
- Packet Data Interface (Q947)

NOTE: There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

Models

Description	Nomenclature	APC	Price
PORTABLE XTS1500 900MHZ 1-2.5W 96 CHAN DISPLAY	H66WCD9PW5BN	687	$750.00

Options

Operation Mode

Description	Nomenclature	APC	Price
ENH: SFTWR ANALOG 3600 BAUD	Q443BL	687	$540.00
ENH: TRUNKING 9600 BAUD	Q574BJ	687	$930.00
Software Package INCLUDES: 9600 Baud, Wide Area SmartZone, OmniLink, and ASTRO Digital CAI & PTT-ID Display			

System Enhancement Software

Description	Nomenclature	APC	Price
ENH: OVER THE AIR PROVISIONING	G996	687	$100.00
Competible with P25 Trunking only. Requires W947 Data option. To do in field POP25 programming must use Advanced System Key (DVN4046A).			

Systems Enhancement Options

Description	Nomenclature	APC	Price
ADD: AUTO ROAMING CAPABILITY FOR X-SERIES SUBSCRIBERS	QA04444	655	$100.00

System Enhancement

Description	Nomenclature	APC	Price
ENH: ADP PRIVACY	Q667	687	$75.00
ENH: RADIO PACKET DATA	Q947	687	$200.00

Antenna

Description	Nomenclature	APC	Price
DEL: STANDARD 900 ANTENNA (NAF5038)	H112JS	687	($10.00)
ALT: 900MHZ DIPOLE NAF5040	H121	687	$0.00
ALT: 900 MHZ 1/4 WAVELENGTH WHIP (NAF5042) Length: 3.93"	H122	687	($5.00)

Battery

Description	Nomenclature	APC	Price
DEL: BATTERY The option will delete the XTS1500 Standard NIMH (NTN9858)for 700/800/900/UHF/VHF.	H207	687	($57.00)
ALT:BATT NIMH FM 2000 MAH (NTN9857) Deletes Standard Nickel Cadmium Battery that ships with the radio. Please Reference General Information for ordering instruction and Factory Mutual Information.	Q393	687	$47.00
ALT: XTS2500 IP67 SLIM LIION 2100 (NNTN7554)	QA01428	205	$93.00

Belt Clip(s)

Description	Nomenclature	APC	Price
DEL: BELT CLIP (HLN6853)	H301	687	$0.00

Service Options

Description	Nomenclature	APC	Price
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE Provides 2 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping cherges only with use of the Motorola dasignated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	H885BK	185	$84.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE XTS1500 LACR H885 option is MANDATORY to be selected for every order. Provides for 3 yeer of hardware repair coverage beginning from the date of shipment. Repairs will be made only at the designated Motorola authorized repair depot. Locel services are not included. Customer will pay the inbound shipping charges. Motorola will pay for the outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	H885DE	206	$84.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE Provides 3 years of extended hardwere repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	H886AQ	185	$125.00
ADD: 1 YR RSA COMPREHENSIVE	HA00020AA	185	$86.00 **Intent to Cancel Date: 15-Jan-2013**
ADD: 2 YR RSA COMPREHENSIVE	HA00021AA	185	$163.00 **Intent to Cancel Date: 15-Jan-2013**
ADD: 3 YR RSA COMPREHENSIVE Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pey for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	HA00022AB	185	$228.00
ADD: 1 YR ENCRYPT RSA COMPREHENSIVE	HA00023AA	185	$90.00 **Intent to Cancel Date: 15-Jan-2013**

ADD: 2 YR ENCRYPT RSA COMPREHENSIVE	HA00024AA	185	$171.00
		Intent to Cancel Date:	**15-Jan-2013**
ADD: 3YR REPAIR SERVICE ADVANTAGE COMPREHENSIVE (INCLUDING ENCRYPTION) Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	HA00025AA	185	$262.00
ENH: CANADA 3 YEAR EXTEND WARRANTY Upgrades the standard warranty period to a full three (3) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.	HA00042	386	$137.00
ENH: CANADA 5 YEAR EXTEND WARRANTY Upgrades the standard warranty period to a full five (5) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.	HA00043	386	$171.00
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	Q884	185	$44.00
ENH:4 YEAR REPAIR SERVICE ADVANTAGE Provides 4 years of extended hardware repair coverege beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	Q887	185	$162.00

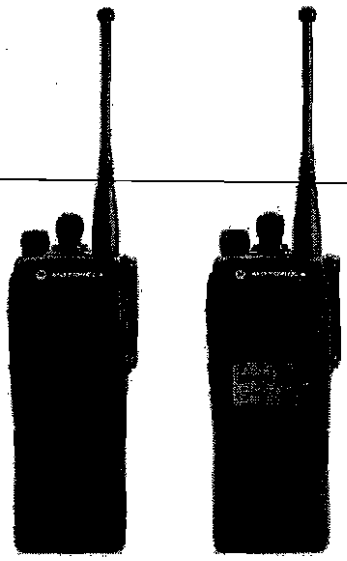
Packaging

Description	Nomenclature	APC	Price
ADD: BULK PACKAGING Ships ordes in multi-unit (10 pack) boxes.	H415	205	$0.00

Accessories

Data Compiled 16-May-2013 using DUP and all prices in USD

ASTRO® Digital XTS 1500 Portable Series
UHF Range 1 and UHF Range 2
Wide Area SmartZone® "Handle-Talkie™" Radio
Trunked Radio Systems



Special Note for United States - State & Local Markets only:

In accordance with FCC mandate, the XTS 1500 UHF R1 & UHF R2 products operating on Part 90 frequencies will be restricted to 12.5kHz or narrower operations on Jan. 1, 2013

Ship Card

Features

All ASTRO Digital XTS 1500 packaged models include the following hardware features:

- 3 Programmable Side Buttons
- Orange Emergency Button
- 16 Position Mode Rotary Select Switch
- On/Off Volume
- Low Battery Alert Tone
- Antenna (Bandsplit and Type Dependent on Band Option)
- Noise Reduction Software
- 1 Top Mounted Programmable Three Position Concentric Switch
- Weather Sealed Universal Connector
- Bi-Color LED Indicator
- IMPRES Nickel Metal Hydride Battery (NTN9858)
- Detachable Belt Clip
- ASTRO 25
- Audio Gain Control

All ASTRO Digital XTS 1500 Portables are part of the FLASHport program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the same RF deck.)

General Information

The ASTRO Digital XTS 1500 Portable Line offers a Model I radio:

Hardware Model	Modes	Alphanumeric Display Lines/Characters Per Line	Keypad	Navigation Pad

ASTRO XTS 1500 Model I	48	None	None	No
ASTRO XTS 1500 Model 1.5	256	4 lines/12 characters	None	No

Operating Modes

ASTRO *Digital* XTS 1500 Radio Model is capable of operating in three software packages listed below:

- 3.6KB ASTRO Digital/Analog Trunking
- 9.6KB ASTRO 25 Digital Trunking
- 9.6KB APCO P25 Digital Conventional

The ASTRO Digital XTS 1500 Portables are capable of 16 modes when the programmable Concentric Top Mountad Switch is used for Zone Operation. The mode of operation is programmed on a channel-by-channal basis.

Please note that the XTS 1500 does NOT support FRED.

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the ASTRO Digital XTS 1500 Portable Radio Series. Separation of frequencies can be as wide as the allowable sub-band per radio model with no degradation of any performance specifications.

The ASTRO *Digital* XTS 1500 portable can be upgraded electronically (via RS232 cable or USB cable are required for all software upgrades) in the field with new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

RELATIVE RADIATED RECEIVE SENSITIVITY

The relative radiated receive sensitivity test (formerly referred to as self-quieters) measures the sensitivity from 380-520 MHz in 12.5kHz steps. The radio is set to 25kHz channel mode. These measurements were taken in a shielded environment so that degraded sensitivity at discrete frequencies is known to be due to the radio's self-interference (as opposed to external interference). The following list contains frequencies which were consistently found to have severely degraded performance on all measured radios (secure and non-secure): 381.535 (secure), 388.400, 389.490 (secure), 393.195, 396.000, 398.300, 405.360 (secure), 413.330 (secure), 414.000, 415.500, 417.770, 420.000, 421.260 (secure), 426.600, 429.230 (secure), 432.000, 432.6125, 434.700, 436.800, 442.3438, 450.000, 453.600, 456.000, 460.800, 462.000, 466.920, 466.000, 470.400, 474.000, 480.000, 488.000, 487.200, 491.490, 492.000 (secure), 497.6950 (secure), 498.000, 502.200 (secure), 504.000, 512.400, 516.000, 516.070, 517.440, 519.120

FM INFORMATION

The XTS 1500 portable radio when properly equipped with options H223 and Q393 are Factory Mutual (FM/CSA) approved as intrinsically safe for use in, Division 1, Class I, II, III, Groups C, D, E, F, G, T3C without encryption modules.

The XTS 1500 portable radio when properly equipped with options H223 and Q393 are Factory Mutual (FM/CSA) approved as intrinsically safe for use in, Division 1, Class I, Class II, Class III, Groups D ,F, G, T3C with encryption modules.

Ordering Requirements

Ordering procedure is as follows:

1	H66QD_9PW5_N	ASTRO XTS 1500 Portable UHF R1
1	H66SD_9PW5_N	ASTRO XTS 1500 Portable UHF R2
1A	Qxxx	System Software
1B	etc	Other options

1. Order the ASTRO Digital XTS 1500 Portable Series as the main line item (H66QDC9PW5 N or H66SDC9PW5 N).
2. Each hardware model MUST be ordered with one Operating Mode. One Operating Mode Package MUST be ordered for each radio unit ordered. Choose between 9600 Trunking, 3600 Analog/ Digital Trunking, 3600 Analog only and P25 Conventional Operation.

SOFTWARE FEATURES SUPPORTED BY			
Q574 Wide Area SmartZone / Q575 Wide Area SmartZone / Q443 Wide Area Analog SmartZone/ Q811 P25 Digital Conventional			
	"ASTRO Digital"(Q575)	"ASTRO Digital"(Q574)	P25 Conventional (Q811)
	Non-Project 25	Project 25	Project 25
	(3600 Baud)	(9600 Baud)	Conventional
RADIO WIDE FEATURES			

Maximum Modes			
ASTRO Digital XTS 1500 Model 1/1.5	48/256	48/256	48/256
Analog and Digital Operation	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes
Secure Capable	No	No	No
One Touch Operation	No	No	No
Real Time Clock	No	No	No
Surveillance Mode	No	No	No
Keypad Lock	No	No	No
Radio Lock	Yes	Yes	Yes
Smart Battery	Yes	Yes	Yes
Radio Wide Transmit Inhibit	No	No	No
Time Out Timer	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES			
Conventional Features are additional radio wide features beyond those specified above.			
CSQ/PL/DPL	Yes	Yes	Yes
Adaptive Power Control	Yes	Yes	Yes
Dual Priority Channel Scan	No	No	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes
Monitor	Yes	Yes	Yes
DTMF Tone Generation	-	-	-
Adaptive Power Control	Yes	Yes	Yes
MDC-1200 Emergency Call	Yes	Yes	Yes
MDC-1200 Silent Emergency Alarm	No	No	No
MDC-1200 PTT-ID Encode	Yes	Yes	Yes
MDC Repeater Access	Yes	Yes	Yes
MDC Request to Talk (RTT)	Yes	Yes	Yes
MDC Status, Status Request, Message	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES			
These features are APCO Project 25 Conventional Interoperable Features when used in the ASTRO Digital CAI Mode (Q806).			
Unaddressed Voice Call	Yes	Yes	Yes
Talk Group Call	Yes	Yes	Yes
Group Call Alert™	Yes	Yes	Yes
Talk Group Identification (TGID)	Yes	Yes	Yes
Selective Call (Individual Voice Call)	Yes	Yes	Yes
PTT ID (Individual Identification)	Yes	Yes	Yes
Call Alert Decode	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	Yes	Yes	Yes
Telephone Interconnect Decode	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes
Radio Check	-	-	-
Status/Message	No	No	No
Trunking Type II Only Features			
Maximum Number of Trunked Systems-16	Yes	Yes	No
Talkgroup Calls	Yes	Yes	No
PTT ID (Digital Only)	Model I - Encode only Model 1.5 - Encode and Decode	Model I - Encode only Model 1.5 - Encode and Decode	Model I - Encode only Model 1.5 - Encode and Decode
Call Alert Decode	Yes	Yes	No
Dual Mode Scan	Yes	No	No
Failsoft by Talkgroup	Yes	Yes	No

Telephone Interconnect Decode	Yes	Yes	No
System Wide Call (Receive Only)	Yes	No	No
Selective Radio Inhibit	Yes	Yes	No
Priority Monitor Scan	Yes	Yes	No
Dynamic Regrouping	Yes	Yes	No
Status/Message	No	No	No
Private/Enhanced Conversation Decode	Yes	Yes	No
Radio Check	No	No	No
Remote Monitor/Radio Trace	No	No	No
Reprogram Request	No	Yes	No
SmartZone® Trunking Type II Only Featuree			
Voice on Control	Future	Future	No
SmartZone Automatic Site Registration	Yes	Yes	No
SmartZone RSSI Operation	Yes	Yes	No
SmartZone Preferred Site	Yes	Yes	No
SmartZone Forced Site Search	Yes	Yes	No
SmartZone Site Lock/Unlock	Yes	Yes	No
SmartZone Adjacent Control Channel OSW	Yes	Yes	No
Emergency Alarm Call Receive Indication	Yes	Yes	No

Legend:
Blue=Feature to be added in a Future Release
Green=New XTS 1500 Features

FCC Information

FCC IDENTIFIER: AZ489FT4865

Name of Grantee: Motorola Solutions, Inc.

Equipment Class: Licensed Non-Broadcast Transmitter Held to Face
Notes: HAND HELD PORTABLE 2-WAY RADIO

Grant Notes	FCC Rule Parts	Frequency Renge (MHZ)	Output Watts	Frequency Tolerance	Emission Designator
BE	90	380.0 - 470.0	5.9	2.0 PM	16K0F3E
BE	90	380.0 - 470.0	5.9	2.0 PM	11K0F3E
BE	90	380.0 - 470.0	5.9	2.0 PM	8K10F1E
BE	90	380.0 - 470.0	5.9	2.0 PM	8K10F1D
BE	90	380.0 - 470.0	5.9	2.0 PM	20K0F1E

FCC IDENTIFIER: AZ489FT4866

Name of Grantee: Motorola Solutions, Inc.

Equipment Class: Licensed Non-Broadcast Transmitter Held to Face
Notes: HAND HELD PORTABLE 2-WAY R4ADIO

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance	Emission Designator
BE	80, 90, 90.210	450.0 - 520.0	6.0	2.0 PM	16K0F3E
BE	80, 90, 90.210	450.0 - 450.0	6.0	2.0 PM	11K0F3E
BE	80, 90, 90.210	450.0 - 520.0	6.0	2.0 PM	8K10F1E
BE	80, 90, 90.210	450.0 - 520.0	6.0	2.0 PM	8K10F1D
BE	80, 90, 90.210	450.0 - 520.0	6.0	2.0 PM	20K0F1E

SUB-BAND PERFORMANCE	
UHF R1	380-470 MHz
UHF R2	450-520 MHz

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

ASTRO Digital XTS 1500 Catalog Sheet

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on XTS 1500 Dual Display Portable radios. Advanced Messaging is NOT supported on XTS 1500 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for XTS 1500 Portable Requires:

- XTS 1500 Dual Display
- ASTRO Digital CAI Operation (Q806)
- P25 Conventional (Q811)
- Packet Data Interface (Q947)

OR

- XTS 1500 Dual Display
- ASTRO Digital CAI Operation (Q806)
- ASTRO Project 25 Trunking Software (Q574)
- Packet Data Interface (Q947)

NOTE: There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server end radio license fees, please visit -

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

Models

Description	Nomenclature	APC	Price
ASTRO DIGITAL XTS1500 UHF M1 R1 380-470 MHZ 1-5W 48 CHANNEL BASE	H68QDC9PW5BN	687	$650.00
ASTRO DIGITAL XTS1500 UHF R1 MODEL 1.5 1-5W 96 CHANNEL (DISPLAY)	H68QDD9PW5BN	687	$750.00
ASTRO DIGITAL XTS1500 UHF MODEL I 450-520 MHZ 1-5W 48 CHANNEL BASE	H66SDC9PW5BN	687	$650.00
ASTRO DIGITAL XTS1500 UHF R2 MODEL 1.5 1-5W 96 CHANNEL (DISPLAY)	H66SDD9PW5BN	687	$750.00

Options

Operation Mode

Description	Nomenclature	APC	Price
ENH: TRUNKING 9600 BAUD Software Package INCLUDES: 9600 Baud, Wide Area SmartZone, OmniLink, and ASTRO Digital CAI & PTT-ID Display	Q574BJ	687	$930.00
ENH: TRUNKING 3600 BAUD Software Package INCLUDES: 3600 Baud, SmartZone, OmniLink, and ASTRO Digital CAI & PTT-ID Display	Q575BJ	687	$830.00
ENH: SOFTWARE P25 CONVENTIONAL	Q811	687	$344.00

System Enhancement Software

Description	Nomenclature	APC	Price
ENH: OVER THE AIR PROVISIONING Compatible with P25 Trunking only. Requires W947 Data option. To do in field POP25 programming must use Advanced System Key (DVN4046A).	G996	687	$100.00

Systems Enhancement Options

Description	Nomenclature	APC	Price
ADD: AUTO ROAMING CAPABILITY FOR X-SERIES SUBSCRIBERS	QA04444	655	$100.00

System Enhancement

Description	Nomenclature	APC	Price
ENH: ADP PRIVACY	Q867	667	$75.00
ENH: RADIO PACKET DATA	Q947	667	$200.00

Antenna

Description	Nomenclature	APC	Price
DEL: DEL: STANDARD UHF ANTENNA Deletes Standard Antenna	H112	667	($10.00)
ALT: ANTENNA UHF HELICAL (NAE6546) Deletes the standard wideband whip antenna (380-512 MHz) and adds the described antenna	H125	667	$0.00
ALT: ANTENNA UHF HELICAL 435-470 (NAE6547) Deletes the standard wideband whip antenna (403-512 MHz) and adds the described antenna.	H128	667	$0.00
ALT: ANTENNA UHF HELICAL 470-520 (NAE6548) Deletes the standard wideband whip antenna (403-512 MHz) and adds the described antenna.	H127	667	$0.00

Battery

Description	Nomenclature	APC	Price
DEL: BATTERY The option will delete the XTS1500 Standard NIMH (NTN9856)for 700/800/900/UHF/VHF.	H207	667	($57.00)
ALT:BATT NIMH FM 2000 MAH (NTN9857) Deletes Standard Nickel Cadmium Battery that ships with the radio. Please Reference General Information for ordering instruction and Factory Mutual Information.	Q393	667	$47.00

Belt Clip(s)

Description	Nomenclature	APC	Price
DEL: BELT CLIP (HLN8853)	H301	667	$0.00

Service Options

Description	Nomenclature	APC	Price
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE Provides 2 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	H865BK	185	$84.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE Provides 3 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	H868AQ	185	$125.00
ADD: 3 YR RSA COMPREHENSIVE Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	HA00022AB	185	$228.00
ENH: CANADA 3 YEAR EXTEND WARRANTY Upgrades the standard warranty period to a full three (3) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.	HA00042	388	$137.00
ENH: CANADA 5 YEAR EXTEND WARRANTY Upgrades the standard warranty period to a full five (5) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.	HA00043	388	$171.00
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	Q884	185	$44.00

Spare Parts

Description	Nomenclature	APC	Price
ADD: SPARE KNOB KIT	QA00542	407	$0.00

UNDEFINED

Description	Nomenclature	APC	Price
ADD: CHANNEL ANNOUNCEMENT	Q446	667	$100.00

Packaging

Description	Nomenclature	APC	Price
ADD: BULK PACKAGING Ships order in multi-unit (10 pack) boxes.	H415	205	$0.00

Accessories

Adapter

Description	Nomenclature	APC	Price
3.5 MM JACK ADAPTER WITH QUICK DISCONNECT LATCH For use with 1, 2 & 3 wire earpiece.	BDN6678	742	$52.50
PSM RF ADPT	RLN5918	372	$38.00

Antenna

Description	Nomenclature	APC	Price
UHF HELICAL ANTENNA, 403-435 MHZ	NAE6546 R	796	$16.00
ANTENNA, 470-520MHZ UHF HELICAL	NAE6546	402	$16.50

Battery

Description	Nomenclature	APC	Price
IMPRES NIMH, 2000 MAH, 7.5V BATTERY-INTRINS SAFE (FM) - RUGGEDIZED	NNTN8263	453	$135.00
FINAL ASSEMBLY, BATTERY, JEDRAY LIION IMPRES BATT	NNTN7335A	453	$135.00
PREM BATT NICD 1525 MAH	NTN9815B	453	$100.00
IMPRES NIMH, 2000 MAH, 7.5V BATTERY - INTRINS SAFE (FM)	NTN9857C	453	$130.00
IMPRESS NIMH, 2100 MAH, 7.5V BATTERY	NTN9858C	453	$110.00

Battery Maintenance Systems

Description	Nomenclature	APC	Price
NA FLEET MANAGEMENT LICENSE KEY	HKVN4036A	785	$469.00
FLEET MANAGEMENT CHRGR INTERFACE UNIT	NNTN7877A	785	$80.00

Multi-Unit Charger Interface Unit, attaches to an APX or XTS IMPRES multi-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for
IMPRES chargers that report data to IMPRES Battery Fleet Management.

Belt Clip(s)

Description	Nomenclature	APC	Price
BELT CLIP 2 1/4"	HLN6853	271	$11.50

Bluetooth, Mission Critical Wireless

Description	Nomenclature	APC	Price
BLUETOOTH HEADSET XTS W/ADAPTER	RLN6379A	742	$209.00
XTS BLUETOOTH ADAPTER	RMN5104A	742	$179.00

Carrying Case(s)

Description	Nomenclature	APC	Price
LEATHER CASE W/HIGH ACTIVITY 3.0" SWIVEL BELT LOOP	NNTN4115	271	$60.00
Includes swivel belt loop and t-strap. 3.0" Snap NiCad or NiMH.			
LEATHER CASE W/HIGH ACTIVITY 2.5" SWIVEL BELT LOOP	NNTN4116	271	$60.00
Includes swivel belt loop and t-strap. 2.5" Snap NiCad or NiMH.			
LEATHER CASE W/SNAP BELT LOOP & T-STRAP	NNTN4117	271	$60.00
Includes snap belt loop and t-strap. For NiCad or NiMH.			
LEATHER T-STRAP, PLAIN ACTION SNAP	NTN8383	478	$10.50
LEATHER T-STRAP, HARD ACTION SNAP WITH ADDITIONAL STRENGTH AT SNAP	NTN8384	478	$10.50

Charger

Description	Nomenclature	APC	Price
WALL MOUNT KIT FOR IMPRES MULTI-UNIT CHARGER	NLN7987	478	$21.00
CHARGER, 110 VOLT, US PLUG	NTN1667	478	$100.00
VEHICULAR TRAVEL CHARGER	RLN4884	785	$95.00
Utilizes the cigarette lighter adapter. INCLUDES: mounting bracket, custom coil cord, and charger. Travel charger is best used and compatible with 2" belt clip.			
IMPRES MULTI UNIT CHARGER - 110V US PLUG NON-DISPLAY	WPLN4108 R	785	$786.00
IMPRES CHARGER	WPLN4111AR	785	$165.00
IMPRES SINGLE-UNIT CHARGER, 220 VOLT, EURO PLUG	WPLN4112BR	785	$165.00
IMPRES MULTI UNIT CHARGER - 110V US PLUG WITH DISPLAY	WPLN4130A	785	$1,350.00
MULTI-UNIT CONDITIONING CHARGER, 4-STATION BASE, 110 VOLT	WPPN4065 R	785	$399.00

INCLUDES: 4 station conditioning charger and AC power supply. Adapter plates sold separately. Motorola Conditioning Chargers are not compatible with Li-Ion batteries or RNN4006/4007 NiMH batteries — Motorola Conditioning Chargers not compatible with NiMH batteries RNN4006B/RNN4007AR or any Li-Ion batteries.

Commport Integrated Microphone/Receiver

Description	Nomenclature	APC	Price
COMMPORT WITH PALM PTT	NTN1824	115	$419.00
CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.			
COMMPORT WITH PTT ON RADIO ADAPTER	NTN1825	115	$419.00
CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.			
COMMPORT WITH RING PTT	NTN1863	115	$429.00
CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.			
COMMPORT WITH SNAP-ON SIDE PTT	NTN1738	115	$429.00
CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.			

Earpieces

Description	Nomenclature	APC	Price
RECEIVE-ONLY FOAM EARBUD WITH 3.5MM PLUG - INTRINSICALLY SAFE (FM)	AARLN4885	742	$25.00
When used with MTP3000 models, to be used with remote speaker microphones PMMN4078A, PMMN4072A and PMMN4074A			
EAR MICROPHONE FOR STANDARD NOISE LEVELS, BLACK	BDN6677	742	$198.00

Designed to pick up the voice through bone vibrations directly in the ear canal. Complete system consists of an Ear microphone and the corresponding Radio Interface Module (PTT or VOX). For noise levels up to 95 db. Requires Interface Module.
*HT750, HT1250 & PR1500 - Intrinsically Safe (FM)
Note: VOX is not recommended for trunking operation.

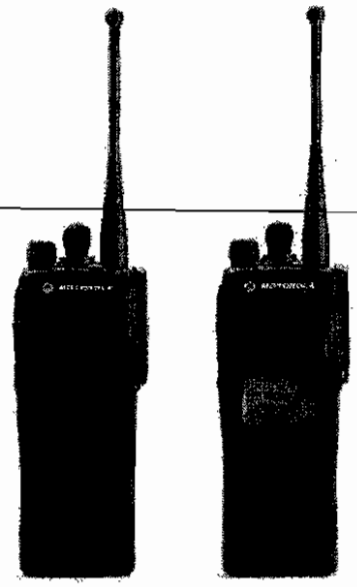
EARBUD, MINI MICROPHONE AND PTT *MTX8000 & MTX9000 - Requires BDN6676 (3.5 mm adapter jack) that attaches to the radio. Assembled with microphone & PTT. *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM).	BDN6780	742	$67.00
EARBUD, RECEIVE ONLY, BLACK (SINGLE WIRE) *HT1000, XTS 3000, requires BDN6676 (3.5mm adapter jack) that attaches to the radio. *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *XTS 5000 & XTS 2500 requires BDN6675. Intrinsically Safe (FM). Assembled (receive only) with volume control & standard urethane earloop. *PR1500 - requires BDN6676 - Intrinsically Safe (FM))	BDN6781	742	$27.00
D-SHELL RX-ONLY EARPIECE(3.5MM)	PMLN4620A	742	$19.00
BONE CONDUCTION EAR MICROPHONE (XTS3000/5000/2500/1500/MT1500/PR1500)	PMLN5464	742	$395.00
EARPLUGS FOAM/ACOUSTIC TUBE BLACK	RLN6230A	742	$32.00
RUBBER EARTIP/ACOUSTIC TUBE BEIGE	RLN6241A	742	$20.00
QUICK DISCONNECT ACOUSTIC TUBE	RLN6242A	742	$7.90
EAR RCVR W/COIL CBL&3.5MM PLUG	WADN4190B	742	$43.00

Headsets

Description	Nomenclature	APC	Price
HEADSET LIGHTWEIGHT Single Muff Lightweight Headset with In-Line PTT Switch (requires BDN6676 audio adapter)- Intrinsically Safe (FM) EX500, EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM)	NMN8245	785	$149.00
MED WEIGHT HEADSET, OVER-THE-HEAD, W/IN-LINE PTT-NRR=24DB-INTRIN (FM) Medium Weight Headset, Over the Head, with In-Line PTT - Noise Reduction Rating = 24dB	NMN8258	742	$389.00
MED DUTY HEADSET,BEHIND-THE-HEAD, W/IN-LINE PTT-NRR= 24DB-INTRIN (FM) Medium Weight Headset, Behind the Head, with In-Line PTT - Noise Reduction Rating = 24dB	NMN8259	742	$425.00
HEAVY DUTY HEADSET PMLN5278B	PMLN5278B	742	$439.00

Data Compiled 16-May-2013 using DUP and all prices in USD

ASTRO® Digital XTS 1500 Portable Series
VHF
Wide Area SmartZone® "Handie-Talkie™" Radio
Trunked Radio Systems



Special Note for United States - State & Local Markets only:

In accordance with FCC mandate, the XTS 1500 VHF products operating on Part 90 frequencies will be restricted to 12.5kHz or narrower operations on Jan. 1, 2013

Ship Card

Features

All ASTRO Digital XTS 1500 packaged models include the following hardware features:

- 3 Programmable Side Buttons
- Orange Emergency Button
- 16 Position Mode Rotary Select Switch
- On/Off Volume
- Low Battery Alert Tone
- Antenna (Bandsplit and Type Dependent on Band Option)
- Noise Reduction Software
- 1 Top Mounted Programmable Three Position Concentric Switch
- Weather Sealed Universal Connector
- Bi-Color LED Indicator
- IMPRES Nickel Metal Hydride Battery (NTN9858)
- Detachable Belt Clip
- ASTRO 25
- Audio Gain Control

All ASTRO Digital XTS 1500 Portables are part of the FLASHport program and ship standard with a FLASH *EE* Prom, which allows for feature and system upgrades (contingent upon remaining within the same RF deck.)

General Information

The ASTRO Digital XTS 1500 Portable Line offers a Model I radio:

Hardware Model	Modes	Alphanumeric Display Lines/Characters Per Line	Keypad	Navigation Pad
ASTRO XTS 1500 Model I	48	None	None	No
ASTRO XTS 1500 Model 1.5	256	4 lines/12 characters	None	No

Operating Modes

ASTRO Digital XTS 1500 Radio Model is capable of operating in three software packages listed below:

- 3.6KB ASTRO Digital/Analog Trunking
- 9.6KB ASTRO 25 Digital Trunking
- 9.6KB APCO P25 Digital Conventional

The ASTRO Digital XTS 1500 Portables are capable of 16 modes when the programmable Concentric Top Mounted Switch is used for Zone Operation. The mode of operation is programmed on a channel-by-channel basis.

Please note that the XTS 1500 does NOT support FRED.

CHANNEL SPACING

There are no maximum frequency seperation conditions that must be adhered to on the ASTRO Digital XTS 1500 Portable Radio Series. Separation of frequencies can be as wide as the allowable sub-band per radio model with no dagradation of any performance specifications.

The ASTRO Digital XTS 1500 portables can be upgraded electronically (via RS232 cable or USB cable are required for all software upgrades) in the field with new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

RELATIVE RADIATED RECEIVE SENSITIVITY

The relative radiated receive sensitivity test (formerly referred to as self-quieters) measures the sensitivity from 138.05MHz to 173.975MHz in 12.5kHz steps. The radio is set to 25kHz channel mode. These measurements were taken in a shielded environment so that degraded sensitivity at the discrete frequencies is known to be due to the radio's self-interference (as opposed to external interference.) The following list contains frequencies which were consistently found to have severely degraded performance on all measured radios: 147.4450, 147.4475, 147.4500, 151.1975, 151.2000, 153.6000, 161.9975, 162.000, 162.0025, 165.8975, 165.9000, 165.9025, 167.9975, 166.000, 168.0025, 172.0200, 172.0225.

FM INFORMATION

The XTS 1500 portable radio when properly equipped with options H223 and Q393 are Factory Mutual (FM/CSA) approved as intrinsically safe for use in, Division 1, Class I, II, III, Groups C, D, E, F, G, T3C without encryption modules.

The XTS 1500 portable radio when properly equipped with options H223 and Q393 are Factory Mutual (FM/CSA) approved as intrinsically safe for use in, Division 1, Class I, Class II, Class III, Groups D ,F, G, T3C with encryption modules.

Ordering Requirements

Ordering procedure is as follows:

1	H66KD_9PW5_N	**ASTRO XTS 1500 Portable**
1A	Qxxx	**System Software**
1B	etc	**Other options**

1. Order the ASTRO Digital XTS 1500 Portable Series as the main line item (H66KDC9PW5 N).
2. Each hardware model MUST be ordered with one Operating Mode. One Operating Mode Package MUST be ordered for each radio unit ordered. Choose between 9600 Trunking, 3600 Analog/ Digital Trunking, 3600 Analog only and P25 Conventional Operation.

SOFTWARE FEATURES SUPPORTED BY Q574 Wide Area SmartZone / Q575 Wide Area SmartZone / Q443 Wide Area Analog SmartZone/ Q811 P25 Digital Conventional	"ASTRO Digital"(Q575) Non-Project 25 (3600 Baud)	"ASTRO Digital"(Q574) Project 25 (9600 Baud)	P25 Conventional (Q811) Project 25 Conventional
RADIO WIDE FEATURES			
Maximum Modes			
ASTRO Digital XTS 1500 Model I/1.5	48/256	48/256	48/256
Analog and Digital Operation	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes

Secure Capable	No	No	No
One Touch Operation	No	No	No
Real Time Clock	No	No	No
Surveillance Mode	No	No	No
Keypad Lock	No	No	No
Radio Lock	Yes	Yes	Yes
Smart Battery	Yes	Yes	Yes
Radio Wide Transmit Inhibit	No	No	No
Time Out Timer	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES			
Conventional Features are additional radio wide features beyond those specified above.			
CSQ/PL/DPL	Yes	Yes	Yes
Adaptive Power Control	Yes	Yes	Yes
Dual Priority Channel Scan	No	No	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes
Monitor	Yes	Yes	Yes
DTMF Tone Generation	-	-	-
Adaptive Power Control	Yes	Yes	Yes
MDC-1200 Emergency Call	Yes	Yes	Yes
MDC-1200 Silent Emergency Alarm	No	No	No
MDC-1200 PTT-ID Encode	Yes	Yes	Yes
MDC Repeater Access	Yes	Yes	Yes
MDC Request to Talk (RTT)	Yes	Yes	Yes
MDC Status, Status Request. Message	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES			
These features are APCO Project 25 Conventional Interoperable Features when used in the ASTRO Digital CAI Mode (Q808).			
Unaddressed Voice Call	Yes	Yes	Yes
Talk Group Call	Yes	Yes	Yes
Group Call Alert™	Yes	Yes	Yes
Talk Group Identification (TGID)	Yes	Yes	Yes
Selective Call (Individual Voice Call)	Yes	Yes	Yes
PTT ID (Individual Identification)	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	Yes	Yes	Yes
Telephone Interconnect Decode	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes
Radio Check	-	-	-
Status/Message	No	No	No
Trunking Type II Only Features			
Maximum Number of Trunked Systems-16	Yes	Yes	No
Talkgroup Calls	Yes	Yes	No
PTT ID (Digital Only)	Model I - Encode only Model 1.5 - Encode and Decode	Model I - Encode only Model 1.5 - Encode and Decode	Model I - Encode only Model 1.5 - Encode and Decode
Call Alert Decode	Yes	Yes	No
Dual Mode Scan	Yes	No	No
Failsoft by Talkgroup	Yes	Yes	No
Telephone Interconnect Decode	Yes	Yes	No
System Wide Call (Receive Only)	Yes	No	No
Selective Radio Inhibit	Yes	Yes	No
Priority Monitor Scan	Yes	Yes	No

Dynamic Regrouping	Yes	Yes	No
Status/Message	No	No	No
Private/Enhanced Conversation Decode	Yes	Yes	No
Radio Check	No	No	No
Remote Monitor/Radio Trace	No	No	No
Reprogram Request	No	Yes	No
SmartZone® Trunking Type II Only Features			
Voice on Control	Future	Future	No
SmartZone Automatic Site Registration	Yes	Yes	No
SmartZone RSSI Operation	Yes	Yes	No
SmartZone Preferred Site	Yes	Yes	No
SmartZone Forced Site Search	Yes	Yes	No
SmartZone Site Lock/Unlock	Yes	Yes	No
SmartZone Adjacent Control Channel OSW	Yes	Yes	No
Emergency Alarm Call Receive Indication	Yes	Yes	No

Legend:
Blue=Feature to be added in a Future Release
Green=New XTS 1500 Features

FCC Information

FCC IDENTIFIER: AZ489FT3807

Name of Grantee: Motorola Solutions, Inc.

Equipment Class: Licensed Non-Broadcast Transmitter Held to Face
Notes: Astro XTS2500 Digital Portable Radio
Modular Type: Does not apply

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance	Emission Designator
BC	90.210	136.0 - 174.0	5.7	2.5 PM	11K0F3E
BC	90	136.0 - 174.0	5.7	2.5 PM	16K0F3E
BC	90.210	136.0 - 174.0	5.7	2.5 PM	8K10F1D
BC	90.210	136.0 - 174.0	5.7	2.5 PM	8K10F1E
BC	80	136.0 - 174.0	5.7	2.5 PM	11K0B3E
BC	80	136.0 - 174.0	5.7	2.5 PM	16K0F3E
BC	80	136.0 - 174.0	5.7	2.5 PM	8K10F1D
BC	80	136.0 - 174.0	5.7	2.5 PM	8K10F1E

SUB-BAND PERFORMANCE	
VHF	136-174 MHz in all models

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

ASTRO Digital XTS 1500 Catalog Sheet

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on XTS 1500 Dual Display Portable radios. Advanced Messaging is NOT supported on XTS 1500 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for XTS 1500 Portable Requires:

- XTS 1500 Dual Display
- ASTRO Digital CAI Operation (Q806)
- P25 Conventional (Q811)
- Packet Data Interface (Q947)

OR

- XTS 1500 Dual Display
- ASTRO Digital CAI Operation (Q806)
- ASTRO Project 25 Trunking Software (Q574)
- Packet Data Interface (Q947)

NOTE: There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

Models

Description	Nomenclature	APC	Price
ASTRO DIGITAL XTS1500 VHF MODEL I 136-174 MHZ 1-5W 48 CHANNEL BASE	H66KDC9PW5BN	667	$650.00
ASTRO DIGITAL XTS1500 VHF MODEL 1.5 1-5 96 CHANNEL (DISPLAY)	H66KDD9PW5BN	667	$750.00

Options

Operation Mode

Description	Nomenclature	APC	Price
ENH: TRUNKING 9600 BAUD Software Package INCLUDES: 9600 Baud, Wide Area SmartZone, OmniLink, and ASTRO Digital CAI & PTT-ID Display	Q574BJ	667	$930.00
ENH: TRUNKING 3600 BAUD Software Package INCLUDES: 3600 Baud, SmartZone, OmniLink, and ASTRO Digital CAI & PTT-ID Display	Q575BJ	667	$630.00
ENH: SOFTWARE P25 CONVENTIONAL	Q811	667	$344.00

System Enhancement Software

Description	Nomenclature	APC	Price
ENH: OVER THE AIR PROVISIONING Compatible with P25 Trunking only. Requires W947 Data option. To do in field POP25 programming must use Advanced System Key (DVN4048A).	G996	667	$100.00

Systems Enhancement Options

Description	Nomenclature	APC	Price
ADD: AUTO ROAMING CAPABILITY FOR X-SERIES SUBSCRIBERS	QA04444	655	$100.00

System Enhancement

Description	Nomenclature	APC	Price
ENH: ADP PRIVACY	Q667	667	$75.00
ENH: RADIO PACKET DATA	Q947	667	$200.00

Antenna

Description	Nomenclature	APC	Price
DEL: ANTENNA, STANDARD VHF (NAD6563) Deletes Standard Antenna	H112	667	($10.00)
ADD: ANTENNA HELICAL VHF 136-150.8 MHZ (NAD6566) Deletes the standard wideband helical antenna and adds the described antenna.	H126	667	$0.00
ADD: ANTENNA HELICAL VHF 150.8-162 MHZ (NAD6567) Deletes the standard wideband helical antenna and adds the described antenna.	H129	667	$0.00

ADD: ANTENNA VHF HELICAL 162 -174 MHZ (NAD6568) Deletes the standard wideband helical antenna and adds the described antenna.	H65	687	$0.00

Battery

Description	Nomenclature	APC	Price
DEL: BATTERY The option will delete the XTS1500 Standard NIMH (NTN9858)for 700/800/900/UHF/VHF.	H207	687	($57.00)
ALT:BATT NIMH FM 2000 MAH (NTN9857) Deletes Standard Nickel Cadmium Battery that ships with the radio. Please Reference General Information for ordering instruction and Factory Mutual Information.	Q393	687	$47.00
ALT: IMPRES BATTERY, LITH, 2700 MAH, IP67, IMMERSION (NNTN7335A) Immersibility on this battery is only available on XTS2500. If the customer requires immersion, this battery must be ordered in conjunction with the immersible housing option (QA00211AA).	QA00774	205	$83.00
ALT: XTS2500 IP67 SLIM LIION 2100 (NNTN7554)	QA01428	205	$93.00

Belt Clip(s)

Description	Nomenclature	APC	Price
DEL: BELT CLIP (HLN8853)	H301	687	$0.00

Service Options

Description	Nomenclature	APC	Price
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE Provides 2 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	H885BK	185	$84.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE Provides 3 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	H886AQ	185	$125.00
ADD: 3 YR RSA COMPREHENSIVE Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	HA00022AB	185	$228.00
ENH: CANADA 3 YEAR EXTEND WARRANTY Upgrades the standard warranty period to a full three (3) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.	HA00042	388	$137.00
ENH: CANADA 5 YEAR EXTEND WARRANTY Upgrades the standard warranty period to a full five (5) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.	HA00043	366	$171.00
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	Q884	185	$44.00

Spare Parts

Description	Nomenclature	APC	Price
ADD: SPARE KNOB KIT	QA00542	407	$0.00

Packaging

Description	Nomenclature	APC	Price
ADD: BULK PACKAGING Ships orders in multi-unit (10 pack) boxes.	H415	205	$0.00

Test Results

Description	Nomenclature	APC	Price
ADD: TEST RESULT PRINT OUT	H799	721	$0.00

Accessories

Adapter

Description	Nomenclature	APC	Price
3.5 MM JACK ADAPTER WITH QUICK DISCONNECT LATCH For use with 1, 2 & 3 wire earpiece.	BDN6676	742	$52.50

Antenna

Description	Nomenclature	APC	Price
ANTENNA, 136-150.8MHZ WIDEBAND HELICAL	NAD6566	476	$16.50
ANTENNA, 150.8-162MHZ WIDEBAND HELICAL	NAD6567	476	$16.50
ANTENNA, 162-178MHZ WIDEBAND HELICAL	NAD6568	476	$16.50

Battery

Description	Nomenclature	APC	Price
IMPRES NIMH, 2000 MAH, 7.5V BATTERY-INTRINS SAFE (FM) - RUGGEDIZED	NNTN8263	453	$135.00
FINAL ASSEMBLY, BATTERY, JEDRAY LILON IMPRES BATT	NNTN7335A	453	$135.00
PREM BATT NICD 1525 MAH	NTN9815B	453	$100.00
IMPRES NIMH, 2000 MAH, 7.5V BATTERY - INTRINS SAFE (FM)	NTN9857C	453	$130.00
IMPRESS NIMH, 2100 MAH, 7.5V BATTERY	NTN9658C	453	$110.00

Battery Maintenance Systems

Description	Nomenclature	APC	Price
NA FLEET MANAGEMENT LICENSE KEY	HKVN4036A	785	$469.00
FLEET MANAGEMENT CHRGR INTERFACE UNIT	NNTN7677A	785	$80.00
Multi-Unit Charger Interface Unit, attaches to an APX or XTS IMPRES multi-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to IMPRES Battery Fleet Management.			

Belt Clip(s)

Description	Nomenclature	APC	Price
BELT CLIP 2 1/4"	HLN6853	271	$11.50

Bluetooth, Mission Critical Wireless

Description	Nomenclature	APC	Price
XTS BLUETOOTH ADAPTER	RMN5104A	742	$179.00

Carrying Case(s)

Description	Nomenclature	APC	Price
LEATHER CASE W/HIGH ACTIVITY 3.0" SWIVEL BELT LOOP Includes swivel belt loop and t-strap. 3.0" Snap NiCad or NiMH.	NNTN4115	271	$60.00
LEATHER CASE W/HIGH ACTIVITY 2.5" SWIVEL BELT LOOP Includes swivel belt loop and t-strap. 2.5" Snap NiCad or NiMH.	NNTN4116	271	$60.00
LEATHER CASE W/SNAP BELT LOOP & T-STRAP Includes snap belt loop and t-strap. For NiCad or NiMH.	NNTN4117	271	$60.00
LEATHER T-STRAP, PLAIN ACTION SNAP	NTN8383	476	$10.50
LEATHER T-STRAP, HARD ACTION SNAP WITH ADDITIONAL STRENGTH AT SNAP	NTN8384	476	$10.50

Charger

Description	Nomenclature	APC	Price
CHARGER, 110 VOLT, US PLUG	NTN1667	476	$100.00
VEHICULAR TRAVEL CHARGER Utilizes the cigarette lighter adapter. INCLUDES: mounting bracket, custom coil cord, and charger. Travel charger is best used and compatible with 2" belt clip.	RLN4884	785	$95.00
IMPRES MULTI UNIT CHARGER - 110V US PLUG NON-DISPLAY	WPLN4106 R	785	$768.00
IMPRES CHARGER	WPLN4111AR	785	$165.00
IMPRES SINGLE-UNIT CHARGER, 220 VOLT, EURO PLUG	WPLN4112BR	785	$165.00
IMPRES MULTI UNIT CHARGER - 110V US PLUG WITH DISPLAY	WPLN4130A	785	$1,350.00

Commport Integrated Microphone/Receiver

Description	Nomenclature	APC	Price
COMMPORT WITH PALM PTT CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.	NTN1624	115	$419.00
COMMPORT WITH PTT ON RADIO ADAPTER CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.	NTN1625	115	$419.00
COMMPORT WITH RING PTT CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.	NTN1663	115	$429.00
COMMPORT WITH SNAP-ON SIDE PTT CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.	NTN1736	115	$429.00

Earpieces

Description	Nomenclature	APC	Price
RECEIVE-ONLY FOAM EARBUD WITH 3.5MM PLUG - INTRINSICALLY SAFE (FM) When used with MTP3000 models, to be used with remote speaker microphones PMMN4076A, PMMN4072A and PMMN4074A	AARLN4885	742	$25.00
EAR MICROPHONE FOR STANDARD NOISE LEVELS, BLACK Designed to pick up the voice through bone vibrations directly in the ear canal. Complete system consists of an Ear microphone and the corresponding Radio Interface Module (PTT or VOX). For noise levels up to 95 db. Requires Interface Module. *HT750, HT1250 & PR1500 - Intrinsically Safe (FM) Note: VOX is not recommended for trunking operation.	BDN6677	742	$198.00
EARBUD, RECEIVE ONLY, BLACK (SINGLE WIRE) *HT1000, XTS 3000, requires BDN6678 (3.5mm adapter jack) that attaches to the radio. *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *XTS 5000 & XTS 2500 requires BDN6679. Intrinsically Safe (FM). Assembled (receive only) with volume control & standard urethane earloop. *PR1500 - requires BDN6679 - Intrinsically Safe (FM))	BDN6761	742	$27.00
D-SHELL RX-ONLY EARPIECE(3.5MM)	PMLN4620A	742	$19.00
BONE CONDUCTION EAR MICROPHONE (XTS3000/5000/2500/1500/MT1500/PR1500)	PMLN5484	742	$395.00
EARPLUGS FOAM/ACOUSTIC TUBE BLACK	RLN6230A	742	$32.00
RUBBER EARTIP/ACOUSTIC TUBE BEIGE	RLN8241A	742	$20.00
QUICK DISCONNECT ACOUSTIC TUBE	RLN8242A	742	$7.90
EAR RCVR W/COIL CBL&3.5MM PLUG	WADN4190B	742	$43.00

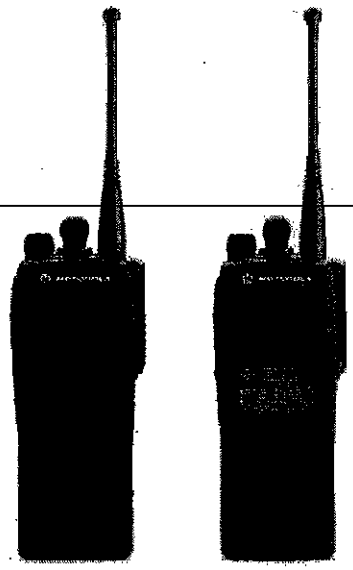
Headsets

Description	Nomenclature	APC	Price
HEADSET LIGHTWEIGHT Single Muff Lightweight Headset with In-Line PTT Switch (requires BDN6676 audio adapter)- Intrinsically Safe (FM) EX500, EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM)	NMN6245	785	$149.00
MED WEIGHT HEADSET, OVER-THE-HEAD, W/IN-LINE PTT-NRR=24DB-INTRIN (FM) Medium Weight Headset, Over the Head, with In-Line PTT - Noise Reduction Rating = 24dB	NMN6258	742	$369.00
MED DUTY HEADSET,BEHIND-THE-HEAD, W/IN-LINE PTT-NRR= 24DB-INTRIN (FM)	NMN6259	742	$425.00

Medium Weight Headset, Behind the Head, with In-Line PTT - Noise Reduction Rating = 24dB HEAVY DUTY HEADSET PMLN5278B	PMLN5278B	742	$439.00

Data Compiled 16-May-2013 using DUP and all prices in USD

ASTRO® Digital XTS 1500 Portable Series
700 / 800 MHz Band
Wide Area SmartZone® "Handie-Talkie™" Radio
Trunked Radio Systems



Ship Card

Features

All ASTRO Digital XTS 1500 packaged models include the following hardware features:

- 3 Programmable Side Buttons
- Orange Emergency Button
- 16 Position Mode Rotary Select Switch
- On/Off Volume
- Low Battery Alert Tone
- Antenna (Bandsplit and Type Dependent on Band Option)
- Noise Reduction Software
- 1 Top Mounted Programmable Three Position Concentric Switch
- Weather Sealed Universal Connector
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- 3.6KB ASTRO Digital/Analog Trunking
- 9.6KB ASTRO 25 Digital Trunking

- 9.6KB APCO P25 Digital Conventional

The ASTRO Digital XTS 1500 Portable is capable of 18 modes when the programmable Concentric Top Mounted Switch is used for Zone Operation. The mode of operation is programmed on a channel-by-channel basis.

There are no maximum frequency separation conditions that must be adhered to on the ASTRO Digital XTS 1500 Portable Radio Series. Separation of frequencies can be as wide as the allowable sub-band per radio model with no degradation of any performance specifications. Mutual Aid channels 821-824 will be supported. If an incorrect antenna is used, degraded performance may be experienced.

The ASTRO Digital XTS 1500 portable can be upgraded electronically (via RS232 cable or USB cable are required for all software upgrades) in the field with new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

Please note that the XTS 1500 does NOT support FRED.

RELATIVE RADIATED RECEIVE SENSITIVITY

The relative radiated receive sensitivity test (formerly referred to as self-quieters) measure the sensitivity from 764MHz to 870Mhz in 12.5kHz steps. The radio is set to 25kHz channel mode. These measurements were taken in a shielded environment so that degraded sensitivity at discrete frequencies is known to be due to the radio's self-interference (as opposed to external interference.) The following list contains frequencies which were consistently found to have severely degraded performance on all measured radios:858.3375, 857.7000, 860.7000, 862.2000, 863.7000, 867.3000, 864.0000.

FM INFORMATION

The XTS 1500 portable radio when properly equipped with options H223 and Q393 are Factory Mutual (FM/CSA) approved as intrinsicelly safe for use in, Division 1, Class I, II, III, Groups C, D, E, F, G, T3C without encryption modules.

The XTS 1500 portable radio when properly equipped with options H223 and Q393 are Factory Mutual (FM/CSA) approved as intrinsicelly safe for use in, Division 1, Class I, Class II, Class III, Groups D ,F, G, T3C with encryption modules.

Ordering Requirements

Ordering procedure is as follows:

1	**H66UC_9PW5_N**	**ASTRO XTS 1500 Portable**
1A	**Qxxx**	**System Software**
1B	**etc**	**Other options**

1. Order the ASTRO Digital XTS 1500 Portable Series as the main line item (H66UCC9PW5 N).
2. Each hardware model MUST be ordered with one Operating Mode. One Operating Mode Package MUST be ordered for each radio unit ordered. Choose between 9600 Trunking, 3600 Analog/ Digital Trunking, 3600 Analog only and P25 Conventional Operation.

SOFTWARE FEATURES SUPPORTED BY Q574 Wide Area SmartZone / Q575 Wide Area SmartZone / Q443 Wide Area Analog SmartZone/ Q811 P25 Digital Conventional	"ASTRO Digital"(Q575) Non-Project 25 (3600 Baud)	"ASTRO Digital"(Q574) Project 25 (9600 Baud)	P25 Conventional (Q811) Project 25 Conventional
RADIO WIDE FEATURES			
Maximum Modes			
ASTRO Digital XTS 1500 Model 1/1.5	48/256	48/256	48/256
Analog and Digital Operation	Yes	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes
Secure Capable	No	No	No
One Touch Operation	No	No	No
Real Time Clock	No	No	No
Surveillance Mode	No	No	No
Keypad Lock	No	No	No
Radio Lock	Yes	Yes	Yes
Smart Battery (NiCAD Only)	Yes	Yes	Yes
Radio Wide Transmit Inhibit	No	No	No

Time Out Timer	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES			
Conventional Features are additional radio wide features beyond those specified above.			
CSQ/PL/DPL	Yes	Yes	Yes
Adaptive Power Control	Yes	Yes	Yes
Dual Priority Channel Scan	No	No	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes
Monitor	Yes	Yes	Yes
DTMF Tone Generation	-	-	-
~~Adaptive Power Control~~	Yes	Yes	Yes
MDC-1200 Emergency Call	Yes	Yes	Yes
MDC-1200 Silent Emergency Alarm	No	No	No
MDC-1200 PTT-ID Encode	Yes	Yes	Yes
MDC Repeater Access	Yes	Yes	Yes
MDC Request to Talk (RTT)	Yes	Yes	Yes
MDC Status, Status Request, Message	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES			
These features are APCO Project 25 Conventional Interoperable Feetures when used in the ASTRO Digital CAI Mode (Q808).			
Unaddressed Voice Call	Yes	Yes	Yes
Talk Group Call	Yes	Yes	Yes
Group Call Alert™	Yes	Yes	Yes
Talk Group Identification (TGID)	Yes	Yes	Yes
Selective Call (Individual Voice Call)	Yes	Yes	Yes
PTT ID (Individual Identification)	Yes	Yes	Yes
Call Alert Decode	Yes	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	Yes	Yes	Yes
Telephone Interconnect	-	-	-
Selective Radio Inhibit	Yes	Yes	Yes
Radio Check	-	-	-
Status/Message	No	No	No
Trunking Type II Only Features			
Maximum Number of Trunked Systems-16	Yes	Yes	No
Talkgroup Calls	Yes	Yes	No
PTT ID (Digital Only)	Model I - Encode only Model 1.5 - Encode and Decode	Model I - Encode only Model 1.5 - Encode and Decode	Model I - Encode only Model 1.5 - Encode and Decode
Call Alert Decode	Yes	Yes	No
Dual Mode Scan	Yes	No	No
Failsoft by Talkgroup	Yes	Yes	No
Telephone Interconnect Decode	Yes	Yes	No
System Wide Call (Receive Only)	Yes	No	No
Selective Radio Inhibit	Yes	Yes	No
Priority Monitor Scan	Yes	Yes	No
Dynamic Regrouping	Yes	Yes	No
Status/Message	Yes	Yes	No
Private/Enhanced Conversation Decode	Yes	Yes	No
Radio Check	No	No	No
Remote Monitor/Radio Trace	No	No	No
Reprogram Request	No	Yes	No
SmartZone® Trunking Type II Only Features			

Voice on Control	Future	Future	No
SmartZone Automatic Site Registration	Yes	Yes	No
SmartZone RSSI Operation	Yes	Yes	No
SmartZone Preferred Site	Yes	Yes	No
SmartZone Forced Site Seerch	Yes	Yes	No
SmartZone Site Lock/Unlock	Yes	Yes	No
SmartZone Adjacent Control Channel OSW	Yes	Yes	No
Emergency Alarm Call Receive Indication	Yes	Yes	No

Legend:
Blue=Feature to be added in a Future Release
Green=New XTS 1500 Features
Programming of the following frequencies are not allowed 772.8000, 774.0000, 858.8000, and 864.0000 MHz

FCC Information

FCC IDENTIFIER: AZ489FT5804

Name of Grantee: Motorola Solutions, Inc.

Equipment Class: Licensed Non-Broadcast Transmitter Held to Face
Notes: ASTRO DIGITAL XTS2500 PORTABLE

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance	Emission Designator
BH	**80, 90, 90.210**	**764.0 - 870.0**	**3.0**	**1.5 PM**	**16K0F3E**
BH	**80, 90, 90.210**	**764.0 - 870.0**	**3.0**	**1.5 PM**	**11K0F3E**
BH	**80, 90, 90.210**	**764.0 - 870.0**	**3.0**	**1.5 PM**	**8K10F1E**
BH	**80, 90, 90.210**	**764.0 - 870.0**	**3.0**	**1.5 PM**	**8K10F1D**
BH	**80, 90, 90.210**	**764.0 - 870.0**	**3.0**	**1.5 PM**	**20K0F1E**

SUB-BAND PERFORMANCE	
700/800 MHz	764-870 MHz in all models

ASTRO® Digital XTS 1500 Catalog Sheet

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on XTS 1500 Dual Display Portable radios. Advanced Messaging is NOT supported on XTS 1500 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for XTS 1500 Portable Requires:

- XTS 1500 Dual Display
- ASTRO Digital CAI Operation (Q606)
- P25 Conventional (Q811)

- Packet Data Interface (Q947)

OR

- XTS 1500 Dual Display
- ASTRO Digital CAI Operation (Q808)
- ASTRO Project 25 Trunking Software (Q574)
- Packet Data Interface (Q947)

NOTE: There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

Models

Description	Nomenclature	APC	Price
ASTRO DIGITAL XTS1500 MODEL I 764-870MHZ 1-3W 48 CHANNEL BASE PORTABLE	H68UCC9PW5BN	667	$650.00
ASTRO DIGITAL XTS1500 MODEL I.5 764-870MHZ 1-3W 256 CHANNEL (DISPLAY)	H68UCD9PW5BN	667	$750.00

Options

Operation Mode

Description	Nomenclature	APC	Price
ENH: TRUNKING 9600 BAUD Software Package INCLUDES: 9600 Baud, Wide Area SmartZone, OmniLink, and ASTRO Digital CAI & PTT-ID Display	Q574BJ	667	$930.00
ENH: TRUNKING 3600 BAUD Software Package INCLUDES: 3600 Baud, SmartZone, OmniLink, and ASTRO Digital CAI & PTT-ID Display	Q575BJ	667	$830.00
ENH: SOFTWARE P25 CONVENTIONAL	Q811	667	$344.00

System Enhancement Software

Description	Nomenclature	APC	Price
ENH: OVER THE AIR PROVISIONING Compatible with P25 Trunking only. Requires W947 Data option. To do in field POP25 programming must use Advanced System Key (DVN4046A).	G998	667	$100.00

Systems Enhancement Options

Description	Nomenclature	APC	Price
ADD: AUTO ROAMING CAPABILITY FOR X-SERIES SUBSCRIBERS	QA04444	655	$100.00

System Enhancement

Description	Nomenclature	APC	Price
ENH: ADP PRIVACY	Q667	667	$75.00
ENH: RADIO PACKET DATA	Q947	667	$200.00

Antenna

Description	Nomenclature	APC	Price
DEL: STANDARD 900 ANTENNA (NAF5036)	H112JS	667	($10.00)
ALT: ANTENNA 1/2 WAVE 7" WHIP 700/800 MHZ (NAF5060)	Q696	667	$5.00

Battery

Description	Nomenclature	APC	Price
DEL: BATTERY The option will delete the XTS1500 Standard NIMH (NTN9858)for 700/800/900/UHF/VHF.	H207	667	($57.00)
ALT:BATT NIMH FM 2000 MAH (NTN9857) Deletes Standard Nickel Cadmium Battery that ships with the radio. Please Reference General Information for ordering instruction and Factory Mutual information.	Q393	667	$47.00
ALT: IMPRES BATTERY, LITH, 2700 MAH, IP67, IMMERSION (NNTN7335A) Immersibility on this battery is only available on XTS2500. If the customer requires immersion, this battery must be ordered in conjunction with the immersible housing option (QA00211AA).	QA00774	205	$93.00
ALT: XTS2500 IP67 SLIM LION 2100 (NNTN7554)	QA01428	205	$93.00

Belt Clip(s)

Description	Nomenclature	APC	Price
DEL: BELT CLIP (HLN6853)	H301	687	$0.00

Service Options

Description	Nomenclature	APC	Price
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE Provides 2 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	H885BK	185	$84.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE Provides 3 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	H886AQ	185	$125.00
ADD: 3 YR RSA COMPREHENSIVE Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	HA00022AB	185	$228.00
ENH: CANADA 3 YEAR EXTEND WARRANTY Upgrades the standard warranty period to a full three (3) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.	HA00042	388	$137.00
ENH: CANADA 5 YEAR EXTEND WARRANTY Upgrades the standard warranty period to a full five (5) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.	HA00043	388	$171.00
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	Q884	185	$44.00
ENH:4 YEAR REPAIR SERVICE ADVANTAGE Provides 4 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	Q887	185	$182.00

Spare Parts

Description	Nomenclature	APC	Price
ADD: SPARE KNOB KIT	QA00542	407	$0.00

UNDEFINED

Description	Nomenclature	APC	Price
ADD: CHANNEL ANNOUNCEMENT	Q448	887	$100.00

Packaging

Description	Nomenclature	APC	Price
ADD: BULK PACKAGING Ships orders in multi-unit (10 pack) boxes.	H415	205	$0.00

Accessories

Adapter

Description	Nomenclature	APC	Price
3.5 MM JACK ADAPTER WITH QUICK DISCONNECT LATCH For use with 1, 2 & 3 wire earpiece.	BDN6676	742	$52.50
PSM RF ADPT	RLN5916	372	$38.00

Battery

Description	Nomenclature	APC	Price
IMPRES NIMH, 2000 MAH, 7.5V BATTERY-INTRINS SAFE (FM) - RUGGEDIZED	NNTN6263	453	$135.00
FINAL ASSEMBLY, BATTERY, JEDRAY LIION IMPRES BATT	NNTN7335A	453	$135.00
IMPRES NIMH, 2000 MAH, 7.5V BATTERY - INTRINS SAFE (FM)	NTN9857C	453	$130.00
IMPRESS NIMH, 2100 MAH, 7.5V BATTERY	NTN9858C	453	$110.00

Battery Maintenance Systems

Description	Nomenclature	APC	Price
NA FLEET MANAGEMENT LICENSE KEY	HKVN4036A	785	$469.00
IMPRES BATTERY DATA READER Provides IMPRES battery users ability to access key usage data via PC. Compatible w/all IMPRES batteries (HT/PRO,TRBO & APX adapter included)	NNTN7392	785	$250.00
FLEET MANAGEMENT CHRGR INTERFACE UNIT Multi-Unit Charger Interface Unit, attaches to an APX or XTS IMPRES multi-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to IMPRES Battery Fleet Management.	NNTN7677A	785	$60.00

Bluetooth, Mission Critical Wireless

Description	Nomenclature	APC	Price
BLUETOOTH HEADSET XTS W/ADAPTER	RLN6379A	742	$209.00
XTS BLUETOOTH ADAPTER	RMN5104A	742	$179.00

Carrying Case(s)

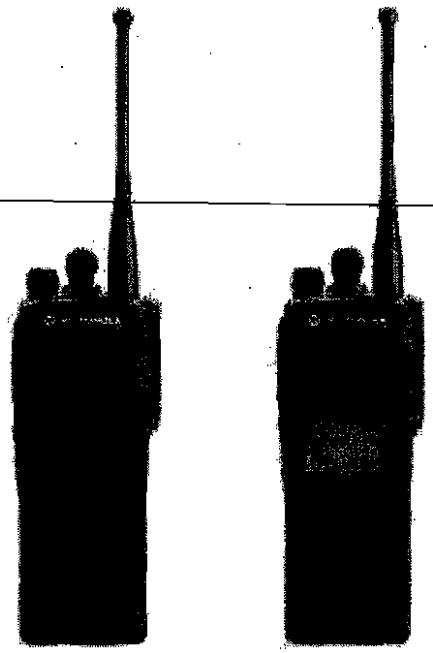
Description	Nomenclature	APC	Price
LEATHER CASE W/HIGH ACTIVITY 3.0" SWIVEL BELT LOOP Includes swivel belt loop and t-strap. 3.0" Snap NiCad or NIMH.	NNTN4115	271	$60.00
LEATHER CASE W/HIGH ACTIVITY 2.5" SWIVEL BELT LOOP Includes swivel belt loop and t-strap. 2.5" Snap NiCad or NIMH.	NNTN4116	271	$60.00
LEATHER CASE W/SNAP BELT LOOP & T-STRAP Includes snap belt loop and t-strap. For NiCad or NIMH.	NNTN4117	271	$60.00
LEATHER T-STRAP, PLAIN ACTION SNAP	NTN8383	478	$10.50
LEATHER T-STRAP, HARD ACTION SNAP WITH ADDITIONAL STRENGTH AT SNAP	NTN8384	478	$10.50

Charger

Description	Nomenclature	APC	Price
IMPRES MULTI UNIT CHARGER - 110V US PLUG NON-DISPLAY	WPLN4108 R	785	$788.00
IMPRES CHARGER	WPLN4111AR	785	$185.00

Data Compiled 16-May-2013 using DUP and all prices in USD

XTS 2500 Portable Series
900 MHz Band



Ship Card

Features

All XTS 2500 packaged models include the following hardware features:

- 3 Programmable Side Buttons
- 1 Top Mounted Programmable Three Position Concentric Switch
- Orange Emergency Button
- Weather Sealed Universal Connector
- 16 Position Mode Rotary Select Switch
- Bi-Color LED Indicator
- On/Off Volume
- IMPRES Nickel Metal Hydride Battery (NTN9858)
- Low Battery Alert Tone
- Detachable Belt Clip
- Antenna
- Audio Gain Control
- Noise Reduction Software

XTS 2500 Model I.5 and III also include:

- DTMF Telephone Interconnect Capability (Model III ONLY)
- Keypad Tone Mute (Model III ONLY)
- 4 Lines Alphanumeric Display
- Large Navigational Keypad (Model III ONLY)
- Date and Time Stamp
- Manual Clock

All XTS 2500 Portables are part of the FLASHport program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the same RF deck.). **Please note that Models 1 and 2 are not available in the Asia Pacific Region**

Physiological Monitoring Solution

Physiological Monitoring is now available on the ASTRO 25 XTS5000 and XTS2500 portable radios. The Zephyr BioHarness™ BT couples the pioneering Smart Fabric sensor technology of the comfortable and unobtrusive BioHarness™ garment with the power and ubiquity of Bluetooth®. BioHarness™ BT enables the capture and transmission of comprehensive physiological data on the wearer exclusively via MOTOROLA ASTRO RADIOS – enabling genuine remote monitoring of human performance and condition in the real world.

The BioHarness™ BT can be used in a diverse range of areas including sports, defense, first responder and healthcare. Its professional-grade BioHarness™ system monitors conditions such as heat state, dehydration or injury by measuring vital signs including heart rate, breathing rate, skin temperature, posture and activity. Using the subject's voice radio, the BioHarness communicates to monitoring software designed to give real-time alerts and post-event analysis.

BioHarness™ BT can be worn in virtually any environment – from combat situations to the training field. It maintains performance under extreme activity. Offering fast, accurate collection and analysis of high-quality, in-depth data, BioHarness™ BT is the definitive product for remote physiological monitoring in all conditions.

Zephyr Physiological Monitoring Ordering Guide

General Information

The XTS 2500 Portable Line offers two different radio hardware models:

Hardware Model	Modes	Alphanumeric Display Lines/Characters per Line	Keypad	Display	Navigation Pad
XTS 2500 Model 1.5	256	6/12/front mount	None	Yes	No
XTS 2500 Model III	870	6/12/front mount	3 x 6	Yes	Yes

OPERATING MODES

XTS 2500 900 MHz Radio Models are capable of operating in Analog Conventional or Analog Trunking communication modes. The mode of operation is programmed on a channel-by-channel basis.

Please note that the XTS 2500 does NOT support FRED.

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the XTS2500 Portable Radio Series. Separation of frequencies can be as wide as the allowable sub-band per radio model with no degradation

of any performance specifications. If an incorrect antenna is used, degraded performance may be experienced.

FLASHport® AFTERMARKET UPGRADES

The XTS 2500 Portable Series Radios are part of the FLASHport® Program. This means that XTS 2500 hardware models can be loaded with different software packages that provide the features and functionalities that your customers require.

The XTS 2500 portable can be upgraded electronically (via RS232 cable or USB cable are required for all software upgrades) in the field with new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

RELATIVE RADIATED RECEIVE SENSITIVITY

The relative radiated receive sensitivity test (formerly referred to as self-quieters) measure the sensitivity from 896MHz to 940Mhz in 12.5kHz steps. The radio is set to 25kHz channel mode. These measurements were taken in a shielded environment so that degraded sensitivity at discrete frequencies is known to be due to the radio's self-interference (as opposed to external interference.) The following list contains frequencies which were consistently found to have severely degraded performance on *all measured radios*: 936 MHz, 939.3 MHz

Ordering Requirements

Ordering procedure is as follows:

1	**H46WCD9PW5BN**	**XTS 2500 Portable**
1A	**Q443**	**3600 Analog Operation**
1B	**etc**	

1. Order the XTS 2500 Portable Series as the main line item (H46WCD9PW5BN).
2. Each hardware model MUST be ordered with one Operating Mode. One Operating Mode Package MUST be ordered for each radio unit ordered. Choose between 3600 Analog, Trunking or Conventional Operation.

Legend:
Blue=Feature to be added in a Future Release

FCC Information

FCC IDENTIFIER: AZ489FT5849

Name of Grantee: Motorola Solutions, Inc.

Equipment Class: **Licensed Non-Broadcast Transmitter Held to Face**

Notes: **PORTABLE 2-WAY RADIO**

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance	Emission Designator
	90	**896.0 - 901.0**	**2.5**	**1.5 PM**	**11K0F3E**
	90	**935.0 - 940.0**	**2.5**	**1.5 PM**	**8K10F1E**

90	935.0 - 940.0	2.5	1.5 PM	8K10F1D
90	935.0 - 940.0	2.5	1.5 PM	11K0F3E
90	896.0 - 901.0	2.5	1.5 PM	8K10F1E
90	896.0 - 901.0	2.5	1.5 PM	8K10F1D

XTS 2500 PORTABLE RADIO SPEC SHEET

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on XTS 2500 Dual Display Portable radios. Advanced Messaging is NOT supported on XTS 2500 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for XTS 2500 Portable Requires:

· XTS 2500 Dual Display

· P25 Conventional (Q811)

· Packet Data Interface (Q947)

OR

· XTS 2500 Dual Display

· ASTRO Project 25 Trunking Software (Q574/Q575)

· Packet Data Interface (Q947)

NOTE: There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding

query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

Models

Description	Nomenclature	APC	Price
PORTABLE XTS2500 900MHZ 1-2.5W 96CHAN DISPLAY	H46WCD9PW5BN	205	$950.00
PORTABLE XTS2500 900MHZ 1-2.5W 870 CHAN DISPLAY	H46WCH9PW7BN	205	$1,950.00

Options

Operation Mode

Description	Nomenclature	APC	Price
ENH: SOFTWARE ANALOG 3600 BAUD Software Package INCLUDES: 3600 Baud, SmartZone, and OmniLink; PTT-ID Display	Q443	205	$1,260.00
ENH: SOFTWARE TRUNKING 9600 BAUD Software Package Includes: 9600 Baud, Wide Area SmartZone, OmniLink, ASTRO Digital CAI, & PTT-ID Display	Q574	205	$1,675.00
ENH: TRUNKING 3600 BAUD SOFTWARE Software Package Includes: 3600 Baud, SmartZone, OmniLink, ASTRO Digital CAI, & PTT-ID Display	Q575	205	$1,675.00
ENH: ANALOG CONVENTIONAL	Q833	205	$1,060.00

Systems Enhancement Options

Description	Nomenclature	APC	Price
ENH: OVER THE AIR PROVISIONING POP25 requires UCM & AES encryption for ASTRO Conventional operation. Must have IV&D (Q947) enabled. To do in field POP25 programming must use Advanced System Key (DVN4046A)	G996	205	$100.00
ENH: REMOTE MONITOR	H43	205	$100.00
ENH:TRUNKED 1 BTN STAT/MSG XTS2500	H46	407	$150.00
ENH: RS232 PACKET INTERFACE	Q947	205	$200.00
ADD: AUTO ROAMING CAPABILITY FOR X-SERIES SUBSCRIBERS	QA04444	655	$100.00

Antenna

Description	Nomenclature	APC	Price
DEL: STANDARD 900 ANTENNA (NAF5038)	H112	205	($10.00)
ALT: 900MHZ DIPOLE NAF5040	H121	205	$0.00
ALT: 900HZ1/4 WAVELTH WHIP (NAF5042) Length: 3.93"	H122	205	($5.00)

Battery

Description	Nomenclature	APC	Price
DEL: BATTERY ALL TOGETHER The option will delete the XTS2500 Standard battery NIMH (NTN9858)	H207	205	($57.00)
ALT: BATTERY IMPRES NIMH FM 2000MAH (NTN9857)	Q393	205	$47.00

Deletes the Standard Nickel Cadmium Battery that ships with this radio. Please Reference General Information for ordering instruction and Factory Mutual Information.

ALT: XTS2500 IP67 SLIM LIION 2100 (NNTN7554)	QA01428	205	$93.00

Belt Clip(s)

Description	Nomenclature	APC	Price
DEL: BELT CLIP (HLN6853)	H301	205	($10.00)
ALT: BELT CLIP 2 INCHES (HLN9844)	H315	407	$10.75

Conventional Factory Programming

Description	Nomenclature	APC	Price
ADD:CONVENTIONAL FACTORY PROGRAMMING 160 CHANNELS	H477	205	$0.00

Service Options

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	H886AQ	185	$125.00
Provides 3 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ADD: 3 YR RSA COMPREHENSIVE	HA00022AB	185	$228.00
Provides for extended herdware rapair coverage and chemicel, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first dey the redio is put into use. Repairs will be made only at the designated Motorola repair depot. Locel services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ADD: 3YR REPAIR SERVICE ADVANTAGE COMPREHENSIVE (INCLUDING ENCRYPTION)	HA00025AA	185	$262.00
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber redios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Locel services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorole's normal shipping methods. No discounts are allowed on this option.			
ENH: XTS2500 CANADA 5 YR EXT WARR	HA00044	386	$144.00
Upgrades the standard warranty period to a full five (5) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.			
ENH: XTS2500 CANADA 3 YR EXT WARR	HA00045	386	$118.00
Upgrades the standard warranty period to a full three (3) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.			
ENH: XTS2500 CAN 3 YR ENCR EXT WARR	HA00047	386	$181.00
Upgrades the standard werranty period to a full three (3) years of herdware service coverage on the internal components of your radio equipment. Repairs will be made only et Motorola authorized service centers. No discounts are allowed on this option.			
ENH: 2 YEAR ENCRYPTED REPAIR SERVICE ADVANTAGE	Q58	185	$97.00
Provides 2 years of extended hardware repair coverege, including encryption, beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	Q884	185	$44.00
Providee 1 year of extended hardware repair coverege beginning after the standard warranty period expires. Repairs will be made only at the designeted Motorole repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated dalivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH:4 YEAR REPAIR SERVICE ADVANTAGE	Q887	185	$162.00
Providee 4 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the dssignated Motorola repeir depot. Local services are not included. Motorola will pey the inbound ahipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts ara allowed on this option.			

ENH: 3 YR ENCRY REPAIR SERVICE Provides 3 years of extended hardware repair coverage, including encryption, beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	QA01540	185	$145.00

Zone Operation

Description	Nomenclature	APC	Price
ADD: ZONE OPERATION	H371	205	$0.00

Packaging

Description	Nomenclature	APC	Price
INT: SINGLE PACKAGING Ships orders in single unit boxes.	H842	205	$0.00

Test Results

Description	Nomenclature	APC	Price
ADD: TEST RESULT PRINT OUT	H799	205	$0.00

Accessories

Enhancements

Description	Nomenclature	APC	Price
ZEPHYR PSM SYSTEM BUNDLE Motorola System bundle includes Software CD, gateway programming cable, configuration block, documentation. 1 Required per laptop	DDN1131	407	$1,920.00
ZEPHYR CARRYING CASE	DDN1132	407	$750.00
ZEPHYR PSM RSM BUNDLE XS-MED Motorola PSM bundle includes 1 BT BioHarness, 1 side strap (XS - Med), 1 remote speeker microphone	DDN1133	407	$883.00
ZEPHYR PSM RSM BUNDLE MED-XL Motorola PSM bundle includes 1 BT BioHarness, 1 side strap (med ? XL), 1 remote speaker microphone	DDN1134	407	$883.00
ZEPHYR BT REMOTE SPEAKER MIC (RSM)	DDN1135	407	$405.00
NONIN BT FINGER BLOOD OXIMITRY SPO2 Contains CNet Bluetooth V2.0 USB Adaptor containing drivers for wireless Bluetooth BP & SPO2 devices.	DDN1136	407	$650.00
ZEPHYR BIOSHIRT RESPONDER - XXL	DDN1137	407	$186.00
ZEPHYR BIOSHIRT RESPONDER - XL	DDN1138	407	$186.00
ZEPHYR BIOSHIRT RESPONDER - LARGE	DDN1139	407	$186.00
ZEPHYR BIOSHIRT RESPONDER - MED	DDN1140	407	$186.00
ZEPHYR RSM CONFIGURATION BLOCK	DDN1141	407	$200.00
ZEPHYR GATEWAY RADIO CABLE	DDN1142	407	$470.00
ZEPHYR 4 BAY CHARGER	DDN1143	407	$220.00
ZEPHYR BLOOD PRESSURE WRIST DEVICE Contains CNet Bluetooth V2.0 USB Adaptor containing drivers for wireless Bluetooth BP & SPO2 devices	DDN1144	407	$248.00
ZEPHYR BIOSHIRT RESPONDER - SMALL	DDN1146	407	$186.00
ZEPHYR BIOHARNESS SIDE STRAP M-XL	DDN1147	407	$69.00
ZEPHYR BIOHARNESS SIDE STRAP XS-M	DDN1148	407	$69.00
ZEPHYR OMNISENSE SW CD & DOCUMENTS	DDN1149	407	$1,250.00
ZEPHYR BLUETOOTH BIOMODULE	DDN1150	407	$815.00
ZEPHYR 4 BAY CHARGER W USA PLUGPACK	DDN1151	407	$220.00
ZEPHYR XTS RID	DDN1159	407	$375.00
ZEPHYR PSM RID BUNDLE XS-MED			

	DDN1160	407	$908.00
Motorola PSM bundle includes 1 BT BioHarness, 1 side strap (XS - Med), 1 RID			
ZEPHYR PSM RID BUNDLE MED-XL	DDN1161	407	$908.00
Motorola PSM bundle includes 1 BT BioHarness, 1 side strap (med ? XL), 1 RID			

Adapter

Description	Nomenclature	APC	Price
3.5 MM JACK ADAPTER WITH QUICK DISCONNECT LATCH	BDN6676	742	$52.50
For use with 1, 2 & 3 wire earpiece.			
KEYLOAD ADAPTER	NTN8613	476	$89.25
The Surveillance/KEYLOAD ADAPTER NTN8613 allows XTS2500, XTS3000, XTS3500 and XTS5000 radios to be used with a ZMN6031, ZMN6032, ZMN6036 or ZMN6039 surveillance microphone and earpiece			

Antenna

Description	Nomenclature	APC	Price
ANTENNA 896-941MHZ 1/2" WAVELENGTH WHIP	NAF5038	476	$35.75
ANTENNA, 806-941MHZ 1/4 WAVELENGTH WHIP (STUBBY)	NAF5042	476	$25.50

Battery

Description	Nomenclature	APC	Price
JEDRAY LI ION BAT 2500MAH	NNTN7032A	453	$150.00
FINAL ASSEMBLY, BATTERY, JEDRAY LIION IMPRES BATT	NNTN7335A	453	$135.00
PREM BATT NICD 1525 MAH	NTN9815B	453	$100.00

Battery Maintenance Systems

Description	Nomenclature	APC	Price
NA FLEET MANAGEMENT LICENSE KEY	HKVN4036A	785	$489.00
IMPRES BATTERY DATA READER	NNTN7392	785	$250.00
Provides IMPRES battery users ability to access key usage data via PC. Compatible w/all IMPRES batteries (HT/PRO,TRBO & APX adapter included)			

Belt Clip(s)

Description	Nomenclature	APC	Price
BELT CLIP 2 1/4"	HLN6853	271	$11.50
2" SPRING BELT CLIP	HLN9844	577	$11.50
For MTH800 - to be used in conjunction with bracket U/slot FTN6302			

Belt Loops

Description	Nomenclature	APC	Price
CARRY CASE SHOULDER STRAP	NTN5243A	795	$23.00
To be used with carry-case PMLN5323, PMLN5324, PMLN5329, PMLN5330, PMLN5328, PMLN5322, PMLN4474 or RLN4851.			

Bluetooth, Mission Critical Wireless

Description	Nomenclature	APC	Price
BLUETOOTH HEADSET XTS W/ADAPTER	RLN6379A	742	$209.00
XTS BLUETOOTH ADAPTER	RMN5104A	742	$179.00

Carrying Case(s)

Description	Nomenclature	APC	Price
LEATHER CASE W/HIGH ACTIVITY 3.0" SWIVEL BELT LOOP	NNTN4115	271	$60.00
Includes swivel belt loop and t-strap. 3.0" Snap NiCad or NiMH.			
LEATHER CASE W/HIGH ACTIVITY 2.5" SWIVEL BELT LOOP			

	NNTN4116	271	$60.00
Includes swivel belt loop and t-strap. 2.5" Snap NiCad or NiMH.			
LEATHER CASE W/SNAP BELT LOOP & T-STRAP Includes snap belt loop and t-strap. For NiCad or NiMH.	NNTN4117	271	$60.00
LEATHER T-STRAP, PLAIN ACTION SNAP	NTN8383	476	$10.50
LEATHER T-STRAP, HARD ACTION SNAP WITH ADDITIONAL STRENGTH AT SNAP	NTN8384	476	$10.50

Charger

Description	Nomenclature	APC	Price
CHARGER, 110 VOLT, US PLUG	NTN1667	476	$100.00
IMPRES MULTI UNIT CHARGER - 110V US PLUG NON-DISPLAY	WPLN4108 R	785	$788.00
IMPRES CHARGER	WPLN4111AR	785	$165.00
IMPRES MULTI UNIT CHARGER - 110V US PLUG WITH DISPLAY	WPLN4130A	785	$1,350.00

Charger Line Cords

Description	Nomenclature	APC	Price
CHARGER, 220V LINE CORD Can be used on eny of the single or multi unit chargers, or power supplies, to provide for domestic or international operation.	NTN7374	476	$17.25

Commport Integrated Microphone/Receiver

Description	Nomenclature	APC	Price
COMMPORT WITH PALM PTT CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.	NTN1624	115	$419.00
COMMPORT WITH PTT ON RADIO ADAPTER CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.	NTN1625	115	$419.00
COMMPORT WITH RING PTT CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.	NTN1663	115	$429.00
COMMPORT WITH SNAP-ON SIDE PTT CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.	NTN1736	115	$429.00

Earpieces

Description	Nomenclature	APC	Price
RECEIVE-ONLY FOAM EARBUD WITH 3.5MM PLUG - INTRINSICALLY SAFE (FM) When used with MTP3000 models, to be used with remote speaker microphones PMMN4076A, PMMN4072A and PMMN4074A	AARLN4885	742	$25.00
EAR MICROPHONE FOR STANDARD NOISE LEVELS, BLACK Designed to pick up the voice through bone vibrations directly in the ear canal. Complete system consists of an Ear microphone and the corresponding Radio Interface Module (PTT or VOX). For noise levels up to 95 db. Requires Interface Module. *HT750, HT1250 & PR1500 - Intrinsically Safe (FM) Note: VOX is not recommended for trunking operation.	BDN6677	742	$198.00
FLEXIBLE EAR RECEIVER Flexible ear loop and speaker which rests external to the ear. REQUIRE BDN6676 (3.5mm adapter jack) that attaches to the radio. *HT1000 and XTS3000 requires BDN6676 (3.5mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adapter is not required. *EX500 & EX600 XLS- Requires PMLN4455 - Intrinsically Safe (FM)	BDN6719	742	$35.00
EARBUD, MINI MICROPHONE AND PTT *MTX8000 & MTX9000 - Requires BDN6676 (3.5 mm adapter jack) that attaches to the radio. Assembled with microphone & PTT. *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM).	BDN6780	742	$67.00
EARBUD, RECEIVE ONLY, BLACK (SINGLE WIRE) *HT1000, XTS 3000, requires BDN6675 (3.5mm adapter jack) that attaches to the radio. *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *XTS 5000 & XTS 2500 requires BDN6676. Intrinsically Safe (FM). Assembled (receive only) with volume control & standard urethane earloop. *PR1500 - requires BDN6676 - Intrinsically Safe (FM))	BDN6781	742	$27.00

D-SHELL RX-ONLY EARPIECE(3.5MM)	PMLN4620A	742	$19.00
BONE CONDUCTION EAR MICROPHONE (XTS3000/5000/2500/1500/MT1500/PR1500)	PMLN5464	742	$395.00
RECEIVE ONLY EARPIECE W/TRANSLUCENT TUBE When used with MTP3000 models, to be used with remote speaker microphones PMMN4078A, PMMN4072A and PMMN4074A	RLN4941A	742	$58.00
EARPLUGS FOAM/ACOUSTIC TUBE BLACK	RLN6230A	742	$32.00
RUBBER EARTIP/ACOUSTIC TUBE BEIGE	RLN6241A	742	$20.00
QUICK DISCONNECT ACOUSTIC TUBE	RLN6242A	742	$7.90
EAR RCVR W/COIL CBL&3.5MM PLUG	WADN4190B	742	$43.00

Headsets

Description	Nomenclature	APC	Price
HEADSET LIGHTWEIGHT Single Muff Lightweight Headset with In-Line PTT Switch (requires BDN6876 audio adapter)-Intrinsically Safe (FM) EX500, EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM)	NMN6245	785	$149.00
MED WEIGHT HEADSET, OVER-THE-HEAD, W/IN-LINE PTT-NRR=24DB-INTRIN (FM) Medium Weight Headset, Over the Head, with In-Line PTT - Noise Reduction Rating = 24dB	NMN6258	742	$389.00
MED DUTY HEADSET,BEHIND-THE-HEAD, W/IN-LINE PTT-NRR= 24DB-INTRIN (FM) Medium Weight Headset, Behind the Head, with In-Line PTT - Noise Reduction Rating = 24dB	NMN6259	742	$425.00
TEMPLE TRANSDUCER W/BOOM MIC & PTT-RECEIVE AUDIO THROUGH THE TEMPLES Temple transducer-receive audio without covering the ear; behind the head style headset allows user to receive audio through the temples. Headset features a noise cancelling boom microphone and in-line PTT.	RMN4049	742	$225.00

Microphones

Description	Nomenclature	APC	Price
SPKR MIC NON-SUBMSBL,GPS RSM HMN4084 has the Earjack. Not compatible with Man-Down Side connector (NTN7660) or Clamshell Battery Holder (Q495, Q496, NTN9177, NTN9183). When used with XTS 2500, requires B version board. INCLUDES GPS RSM User guide (6881096C03).	HMN4084	372	$350.00
GPS R2 SMART/NON-SUBM RSM FM GPS R2.0 RSM, 3.5mm audio jack XTS2500 compatibility requires B tanapa version hardware and radio host cost R10.00.00 or later XTS5000 compatibility requires radio host cost R06.01.00 or later. FM compliant	HMN4112A	372	$350.00
GPS R2 SMART/SUBM RSM FM GPS R2.0 RSM, Submersible XTS2500 compatibility requires B tanapa version hardware and radio host cost R10.00.00 or later XTS5000 compatibility requires radio host cost R06.01.00 or later. FM compliant	HMN4113A	372	$350.00
REMOTE SPEAKER MICROPHONE, IP57	PMMN4038A	372	$88.50
REMOTE SPEAKER MIC, NC	PMMN4045B	372	$97.00
REMOTE SPEAKER MIC, RX-JACK	PMMN4051B	372	$89.00

Public Safety Microphone(s)

Description	Nomenclature	APC	Price
PSM STRAIGHT CABLE 30IN	RMN5072B	372	$160.00
PSM STRAIGHT CABLE 24IN	RMN5073B	372	$160.00
PSM STRAIGHT CABLE 18IN	RMN5074B	372	$160.00

Surveillance

Description	Nomenclature	APC	Price
EARPIECE RECEIVE ONLY WITH STANDARD EARPHONE - BEIGE (SINGLE WIRE)	BDN6664	742	$40.00

*HT1000, XTS 2500, XTS 3000, & XTS 5000: Requires BDN6676(3.5mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adapter is not required. Assembled (receive only) with standard urethane ear loop. *EX500 & EX600 XLS - requires PMLN4455 -Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)			
EARPIECE RECEIVE ONLY WITH EXTRA LOUD EARPHONE - BEIGE (SINGLE WIRE) *HT1000, XTS 2500, XTS 3000, & XTS 5000 -requires BDN6676(3.5mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adapter is not required. Assembled (receive only) with standard urethane ear loop. *EX500 & EX600 XLS - requires PMLN4455 -Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6665	742	$42.00
EARPIECE RECEIVE ONLY WITH VOLUME CONTROL - BEIGE (SINGLE WIRE) *HT1000, XTS 2500, XTS 3000, and XTS 5000: Requires BDN6676 (3.5mm adepter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adepter is not required. Intrinsically Safe (FM). Assembled (receive only) with standard urethane ear loop. *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6666	742	$53.00
EARPIECE WITH MICROPHONE & PTT COMBINED - BEIGE (2 WIRE) *XTS 2500, XTS 3000, and XTS 5000: Requires BDN6676(3.5mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adapter is not required. Intrinsically Safe (FM). Assembled (receive only) with standard urethane ear loop. *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6667	742	$114.00
EARPIECE WITH MICROPHONE & PTT SEPARATE - BEIGE (3 WIRE) *HT1000, XTS 2500, XTS 3000, and XTS 5000: Requires BDN6676(3.5mm adapter jack) that attaches to the radio. If being used with Remote Speakar Microphone with 3.5mm audio jack, audio adaptar is not required. Intrinsically Safe (FM). Assembled (receive only) with standard urethana ear loop. * EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6668	742	$135.00
EARPIECE, MIC & PTT COMBINED W/EXTRA LOUD EARPIECE - BEIGE (2 WIRE) *HT1000, XTS 2500, XTS 3000, and XTS 5000: Requires BDN6676(3.5mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adapter is not required. Intrinsically Safe (FM). Assembled (receive only) with standard urethane ear loop. *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6669	742	$118.00
EARPIECE W/MIC & PTT SEPARATE W/XTRA LOUD EARPIECE - BEIGE (3 WIRE) *HT1000, XTS 2500, XTS 3000, and XTS 5000: requires BDN6676(3.5mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adapter is not required. Intrinsically Safe (FM). Assembled (receive only) with standard urethane ear loop. *EX500 & EX600 XLS REQUIRES PMLN4455. *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6670	742	$150.00
EARPIECE RECEIVE ONLY WITH STANDARD EARPHONE - BLACK (SINGLE WIRE) *HT1000, XTS 3000 require BDN6676 (3.5 mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adapter is not required. *XTS 2500 and XTS 5000 requires new adaptor -Intrinsically Safe (FM) *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6726	742	$40.00
RECEIVE ONLY EARPIECE WITH EXTRA LOUD EARPHONE - BLACK (SINGLE WIRE) Exceeds OSHA Limits. *HT1000 XTS 3000 require BDN 6676 (3.5 mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adepter is not required. *XTS 2500 and XTS 5000 requires new adaptor -Intrinsically Safe (FM). *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6727	742	$42.00
EARPIECE RECEIVE ONLY WITH VOLUME CONTROL - BLACK (SINGLE WIRE) *XTS 3000 require BDN6676 (3.5 mm adapter jack) that attaches to tha radio. If being used with Remote Speeker Microphone with 3.5mm audio jack, audio adapter is not required. *XTS 2500 and XTS 5000 requires new adaptor - Intrinsically Safe (FM). *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6728	742	$53.00
EARPIECE WITH MICROPHONE & PTT COMBINED - BLACK (2 WIRE)	BDN6729	742	$114.00

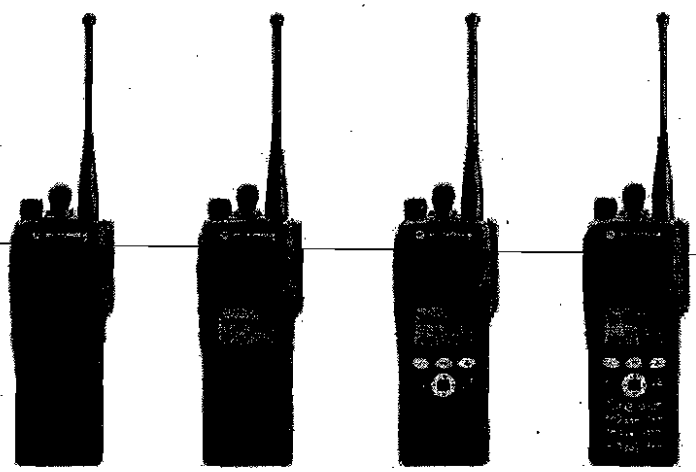
*XTS 2500, XTS 3000 and XTS 5000 require BDN6676 (3.5 mm adapter jack) that attaches to the radio. *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)			
EARPIECE WITH MICROPHONE & PTT SEPARATE - BLACK (3 WIRE) *HT1000, XTS 3000 require BDN6676 (3.5mm adapter jack) that attaches to the radio. *XTS 2500 & XTS 5000 requires new adaptor - Intrinsically Safe (FM). *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6730	742	$135.00
EARPIECE, MIC & PTT COMBINED W/EXTRA LOUD EARPIECE - BLACK (2 WIRE) *HT1000, XTS 3000, require BDN6676 (3.5mm Adapter Jack)that attaches to the radio. *XTS 2500 & XTS 5000 requires new adaptor - Intrinsically Safe (FM). *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6731	742	$118.00
EARPIECE W/MIC & PTT SEPARATE W/XTRA LOUD EARPIECE - BLACK (3 WIRE) *HT1000, XTS 3000 require BDN6676 (3.5mm adapter jack) that attaches to the radio. * *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM). *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6732	742	$150.00

UNDEFINED

Description	Nomenclature	APC	Price
ASSY,ENT/CONCTIV,HSET,98682H,BT HS 300	98682H	742	$40.00
GPS R2 SMART/SUBM RSM	HMN4106	372	$350.00
GPS R2 SMART/NON-SUBM RSM	HMN4107A	372	$350.00

Data Compiled 16-May-2013 using DUP and all prices in USD

ASTRO® Digital XTS 2500 Portable Series
UHF Range 1 and UHF Range 2
Wide Area SmartZone® "Handie-Talkie™" Radio
Trunked Radio Systems



Special Note for United States - State & Local Markets only:

In accordance with FCC mandate, the **XTS** 2500 UHF R1 & UHF R2 products operating on Part 90 frequencies will be restricted to 12.5kHz or narrower operations on Jan. 1, 2013

Ship Card

Features

All ASTRO Digital XTS 2500 packaged models include the following hardware features:

- 3 Programmable Side Buttons
- Orange Emergency Button
- 16 Position Mode Rotary Select Switch
- On/Off Volume
- Low Battery Alert Tone
- Antenna (Bandsplit and Type Dependent on Band Option)
- Noise Reduction Software
- 1 Top Mounted Programmable Three Position Concentric Switch
- Weather Sealed Universal Connector
- Bi-Color LED Indicator
- Nickel Metal Hydride Battery (NTN9858)
- Detachable Belt Clip
- ASTRO 25
- Audio Gain Control

ASTRO Digital XTS 2500 Model I.5, II and III also include:

- DTMF Telephone Interconnect Capability *(Model III ONLY)*
- 6 Lines Alphanumeric Display (NO Model I)
- Date and Time Stamp
- Hardware Encryption (Not Available on Model 1)
- Keypad Tone Mute
- Large Navigational Keypad
- Real Time Clock

All ASTRO Digital XTS 2500 Portables are part of the FLASHport program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the same RF deck.) **Please note that Models 1 and 2 are not available in the Asia Pacific Region**.

Physiological Monitoring Solution

Physiological Monitoring is now available on the ASTRO 25 XTS5000 and XTS2500 portable radios. The Zephyr BioHarness™ BT couples the pioneering

Smart Fabric sensor technology of the comfortable and unobtrusive BioHarness™ garment with the power and ubiquity of Bluetooth®. BioHarness™ BT enables the capture and transmission of comprehensive physiological data on the wearer exclusively via MOTOROLA ASTRO RADIOS – enabling genuine remote monitoring of human performance and condition in the real world.

The BioHarness™ BT can be used in a diverse range of areas including sports, defense, first responder and healthcare. Its *professional-grade BioHarness™* system monitors conditions such as heat state, dehydration or injury by measuring vital signs including heart rate, breathing rate, skin temperature, posture and activity. Using the subject's voice radio, the BioHarness communicates to monitoring software designed to give real-time alerts and post-event analysis.

BioHarness™ BT can be worn in virtually any environment – from combat situations to the training field. It maintains performance under extreme activity. Offering fast, accurate collection and analysis of high-quality, in-depth data, BioHarness™ BT is the definitive product for remote physiological monitoring in all conditions.

Zephyr Physiological Monitoring Ordering Guide

General Information

The ASTRO Digital XTS 2500 Portable Line offers three different radio hardware models:

Hardware Modal	Modes	Alphanumeric Display	Keypad	Navigation Pad
		Lines/Characters per Line		
ASTRO XTS 2500 Model I	48	None	None	No
ASTRO XTS 2500 Model 1.5	256	6/12/front mount	None	No
ASTRO XTS 2500 Model II	870	6/12/front mount	3 x 2	Yes
ASTRO XTS 2500 Model III	870	6/12/front mount	3 x 6	Yes

Operating Modes

ASTRO Digital XTS 2500 Radio Models are capable of operating in three different voice communication modes:

• Normal Analog (clear voice) • 3.6KB ASTRO Digital (clear voice) • 9.6KB ASTRO 25 Digital (clear voice)

The ASTRO Digital XTS 2500 Portable is capable of 48 modes when the programmable Concentric Top Mounted Switch is used for Zone Operation. The mode of operation is programmed on a channel-by-channel basis.

Please note that the XTS 2500 does NOT support FRED.

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the ASTRO Digital XTS 2500 Portable Radio Series. Separation of frequencies can be as wide as the allowable sub-band per radio model with no degradation of any performance specifications. If an incorrect antenna is used, degraded performance may be experienced.

FIPS 140-2 Compliance

Encryption Modules equipped with AES are FIPS 140-2 compliant. Further information regarding FIPS 140-2 certification may be found using the following links:

FIPS 140-2 Crypto Module Validation Program (CMVP)

NIST Cryptographic Module Validation Lists

FLASHport® AFTERMARKET UPGRADES

The ASTRO Digital XTS 2500 Portable Series Radios are part of the FLASHport Program. This means that ASTRO Digital XTS 2500 hardware models can be loaded with different software packages that provide the features and functionalities that your customers require. Three different hardware models are available in each band split.

The ASTRO Digital XTS 2500 portable can be upgraded electronically (via RS232 cable or USB cable are required for all software upgrades) in the field with new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

FM INFORMATION

The XTS 2500 portable radio when properly equipped with options H223, Q393 or Q393SUBM are Factory Mutual (FM/CSA) approved as intrinsically safe for use in, Division 1, Class I, II, III, Groups C, D, E, F, G, T3 without encryption modules.

The XTS 2500 portable radio when properly equipped with options H223, Q393 or Q393SUBM are Factory Mutual (FM/CSA) approved as intrinsically safe for use in, Division 1, Class I, Class II, Class III, Groups D ,F, G, T3C with encryption modules.

ASTRO TEXT MESSAGING SERVICE

ASTRO Text Messaging Service will be available on ASTRO 25 XTS 5000, XTS 2500 Portable radios and ASTRO 25 XTL 5000, XTL 2500 Mobile radios. Text Messaging Service (TMS) allows subscriber users to send and receive text messages to other subscribers or dispatch operators. Users can select messages and addresses from a predefined list or enter freeform text messages and addresses via the keypad. Text Messaging Service is available on ASTRO Trunked IV&D Systems and Subscribers. Subscribers must have version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software.

For full Text Messaging functionality, including freeform text messaging and addressing, must order Model III XTS2500 portables. Model II versions support Limited Text Messaging functionality such as selecting predefined messages or addresses from a list programmed in the radio. Text messaging service is NOT supported on Model I Portables.
Ordering requirements for XTS 2500 Portable:

- Requires Model II or Model III XTS 2500
- Software Trunking 9600 Baud (Q574)
- Packet Data Interface (Q947)

NOTE: There is no specific option to order for the Text Messaging Service on the subscribers as the functionality is included in the Packet Data option.

RELATIVE RADIATED RECEIVE SENSITIVITY

The relative radiated receive sensitivity test (formerly referred to as self-quieters) measures the sensitivity from 380-520 MHz in 12.5kHz steps. The radio is set to 25kHz channel mode. These measurements were taken in a shielded environment so that degraded sensitivity at discrete frequencies is known to be due to the radio's self-interference (as opposed to external interference). The following list contains frequencies which were consistently found to have severely degraded performance on all measured radios (secure and non-secure): 381.535 (secure), 388.400, 389.490 (secure), 393.195, 396.000, 396.300, 405.380 (secure), 413.330 (secure), 414.000, 415.500, 417.770, 420.000, 421.280 (secure), 428.800, 429.230 (secure), 432.000, 432.8125, 434.700, 436.800, 442.3438, 450.000, 453.600, 456.000, 460.800, 482.000, 486.920, 468.000, 470.400, 474.000, 480.000, 486.000, 487.200, 491.490, 492.000 (secure), 497.6950 (secure), 498.000, 502.200 (secure), 504.000, 512.400, 516.000, 516.070, 517.440, 519.120

UPDATED LIST OF FREQUENCIES NOT ALLOWED

When a Platform A radio is repaired with a Platform B RF board there will be additional frequencies that are not recommended to be used. The following list contains frequencies which were consistently found to have severely degraded performance on all measured radios (secure and non-secure):

VHF (136 to 174 MHz) 140.5, 144, 147.4475, 147.4575, 151.2*, 151.735*, 153.6*, 159.745, 162, 162.295, 165.9, 169*, 170.3975, 172.02

UHF Range 1 (380 to 470 MHz) 381.535, 384, 389.49, 393.195, 396*, 397.4375, 405.38, 413.33, 414*, 415.5, 417.77, 420*, 421.28, 429.23, 429.544, 431.1, 432*, 432.613, 437.18125, 442.344, 445.13125, 450*, 460.8, 466.92, 468*

UHF Range 2 (450 to 520 MHz) 450, 453.6*, 456*, 460.8*, 462, 466.91875, 468*, 469.425, 470.4*, 474, 475.5*, 480, 486*, 487.2*, 491.49375, 492, 497.705, 496, 502.2, 504, 510, 516, 516.065

700/800 MHz (764 – 776 MHz, 851 MHz – 870 MHz) 856.3375, 857.7000, 860.7000, 862.2000, 863.7000, 864.0000, 867.3000

Ordering Requirements

Ordering procedure is as follows:

1 H46QDC9PW7BN ASTRO XTS 2500 Portable

1A Q574 9600 Trunking Digital Operation

1B etc

1. Order the ASTRO Digital XTS 2500 Portable Series as the main line item (H46QDC9PW7_N).
2. Each hardware model MUST be ordered with one Operating Mode. One Operating Mode Package MUST be ordered for each radio unit ordered. Choose between 9600 Trunking, 3600 Analog/ Digital Trunking, 3600 Analog and P25 Conventional Operation.

SOFTWARE FEATURES SUPPORTED BY Q574 Wide Area SmartZone / Q575 Wide Area SmartZone / Q443 Wide Area Analog SmartZone/ Q811 P25 Digital Conventional				
	"ASTRO Digital"(Q575)	"ASTRO Digital"(Q574)	3600 Analog (Q443)	P25 Conventionel (Q811)
	Non-Project 25	Project 25	Type II	Project 25
	(3600 Baud)	(9600 Baud)	(3600 Baud)	Conventional
RADIO WIDE FEATURES				
Maximum Modes				
ASTRO Digital XTS 2500 Model 1	16/48	16/48	16/48	16/48
ASTRO Digital XTS 2500 Model 1.5	256	256	256	256
ASTRO Digital XTS 2500 Model II & III	870	870	870	870
Analog and Digital Operation	Yes	Yes	Analog Only	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable (Hardware Encryption Not Available on Model 1 Radios)	Yes	Yes	All but ADP	Yes
One Touch Operation	Yes	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes	Yes

Surveillance Mode	Yes	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes	Yes
Radio Lock	Yes	Yes	Yes	Yes
Smart (IMPRES) Battery	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified above.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	No	No	No	No
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
MDC-1200™ Call Lists (Call Alert/Select Call)	Yes	Yes	Yes	Yes
MDC-1200 Call Alert Encode/Decode	Yes	Yes	Yes	Yes
MDC-1200 Emergency Call	Yes	Yes	Yes	Yes
MDC-1200 Voice Selective Call Encode/Decode	Yes	Yes	Yes	Yes
MDC-1200 Remote Monitor Decode	Decode Only	Decode Only	Decode Only	Decode Only
MDC-1200 Silent Emergency Alarm	Yes	Yes	Yes	Yes
MDC-1200 Selective Radio Inhibit Decode	Decode Only	Decode Only	Decode Only	Decode Only
MDC-1200 Radio Check Decode	Decode Only	Decode Only	Decode Only	Decode Only
MDC-1200 PTT-ID Decode/Encode	Yes	Yes	Yes	Yes
MDC Repeater Access	Yes	Yes	Yes	Yes
MDC Request to Talk (RTT)	Yes	Yes	Yes	Yes
MDC Status, Status Request, Message	Yes	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Conventional *Interoperable Features when used in the ASTRO Digital* CAI Mode (Q806).				
Unaddressed Voice Call	Yes	Yes	No	Yes
Talk Group Call	Yes	Yes	No	Yes
Group Call Alert™	Yes	Yes	No	Yes
Talk Group Identification (TGID)	Yes	Yes	No	Yes
Selective Call (Individual Voice Call)	Yes	Yes	No	Yes
PTT ID (Individual Identification)	Yes	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	No	Yes
Emergency Alarm w/Channel Revert & Ack.	Yes	Yes	No	Yes
Telephone Interconnect	Yes	Yes	No	Yes
Selective Radio Inhibit	Yes	Yes	No	Yes
Radio Check	-	-	No	-
Status/Message	Yes	Yes	No	Yes
Trunking Type II Only Features				
Maximum Number of Trunked Systems-20	Yes	Yes	Yes	No
Talkgroup Calls	Yes	Yes	Yes	No
PTT ID (Digital Only)	Yes	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes	No
Dual Mode Scan	Yes	No	Yes	No
Failsoft by Talkgroup	Yes	Yes	Yes	No
Telephone Interconnect Encode/Decode	Yes	Yes	Yes	No
System Wide Call (Receive Only)	Yes	No	Yes	No
Selective Radio Inhibit	Yes	Yes	Yes	No
Priority Monitor Scan	Yes	Yes	Yes	No
Dynamic Regrouping	Yes	Yes	Yes	No
Status/Message	No	No	No	No
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes	No
Radio Check	No	No	No	No

Remote Monitor/Radio Trace	Yes	No	Yes	Yes
Reprogram Request	No	No	No	No
SmartZone Trunking Type II Only Features				
Adaptive Power Control	Yes	Yes	Yes	No
Voice on Control	Future	Future	Future	No
SmartZone Automatic Site Registration	Yes	Yes	Yes	No
SmartZone RSSI Operation	Yes	Yes	Yes	No
SmartZone Preferred Site	Yes	Yes	Yes	No
SmartZone Forced Site Search	Yes	Yes	Yes	No
SmartZone Site Lock/Unlock	Yes	Yes	Yes	No
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	No
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	No

Legend:
~~Blue=Feature to be added in a Future Release~~

FCC Information

FCC IDENTIFIER: AZ489FT4865

Name of Grantee: Motorola Solutions, Inc.

Equipment Class: Licensed Non-Broadcast Transmitter Held to Face
Notes: HAND HELD PORTABLE 2-WAY RADIO

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance	Emission Designator
BE	90	380.0 - 470.0	5.9	2.0 PM	16K0F3E
BE	90	380.0 - 470.0	5.9	2.0 PM	11K0F3E
BE	90	380.0 - 470.0	5.9	2.0 PM	8K10F1E
BE	90	380.0 - 470.0	5.9	2.0 PM	8K10F1D
BE	90	380.0 - 470.0	5.9	2.0 PM	20K0F1E

FCC IDENTIFIER: AZ489FT4866

Name of Grantee: Motorola Solutions, Inc.

Equipment Class: Licensed Non-Broadcast Transmitter Held to Face
Notes: HAND HELD PORTABLE 2-WAY R4ADIO

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance	Emission Designator
BE	80, 90, 90.210	450.0 - 520.0	8.0	2.0 PM	16K0F3E
BE	80, 90, 90.210	450.0 - 450.0	8.0	2.0 PM	11K0F3E
BE	80, 90, 90.210	450.0 - 520.0	6.0	2.0 PM	8K10F1E
BE	80, 90, 90.210	450.0 - 520.0	8.0	2.0 PM	8K10F1D
BE	80, 90, 90.210	450.0 - 520.0	6.0	2.0 PM	20K0F1E

SUB-BAND PERFORMANCE	
UHF R1	380-470 MHz in all models
UHF R2	450-520 MHz in all models

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

XTS 2500 PORTABLE RADIO SPEC SHEET

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core

messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on XTS 2500 Dual Display Portable radios. Advanced Messaging is NOT supported on XTS 2500 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for XTS 2500 Portable Requires:

- XTS 2500 Dual Display
- P25 Conventional (Q811)
- Packet Data Interface (Q947)

OR

- XTS 2500 Dual Display
- ASTRO Project 25 Trunking Software (Q574/Q575)
- Packet Data Interface (Q947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

Models

Description	Nomenclature	APC	Price
XTS2500 380-470MHZ R1/ 1-5W/ 48 CHANNELS/ NO KEYPAD/ MODEL 1	H46QDC9PW5BN	407	$850.00
XTS2500 380-470MHZ R1/ 1-5W/ 96 CHANNELS/ NO KEYPAD/ MODEL 1.5	H46QDD9PW5BN	407	$950.00
XTS2500 380-470MHZ UHF1/ 1-5W/ 870 CHANNELS/ 3X2 KEYPAD/MODEL 2	H46QDF9PW6BN	407	$1,550.00
XTS2500 380-470MHZ R1/ 1-5W/ 870 CHANNELS/ 3X6 KEYPAD/ MODEL 3	H46QDH9PW7BN	407	$1,950.00
XTS2500 450-520MHZ R2/ 1-5W/ 48 CHANNELS/ NO KEYPAD/ MODEL 1	H46SDC9PW5BN	407	$850.00
XTS2500 450-520 MHZ R2/ 1-5W/ 96 CHANNELS/ NO KEYPAD/ MODEL 1.5	H46SDD9PW5BN	407	$950.00
XTS2500 450-520MHZ R2/ 1-5W/ 870 CHANNELS/ 3X2 KEYPAD/ MODEL 2	H46SDF9PW6BN	407	$1,550.00
XTS2500 450-520MHZ R2/ 1-5W/ 870 CHANNELS/ 3X6 KEYPAD/ MODEL 3	H46SDH9PW7BN	407	$1,950.00

Options

Operation Mode

Description	Nomenclature	APC	Price
ENH: SOFTWARE ANALOG 3600 BAUD Software package INCLUDES: 3600 baud, Smartzone, and Omnilink; PTT-ID Display	Q443	407	$1,260.00
ENH: SOFTWARE TRUNKING 9600 BAUD Software Package INCLUDES: 9600 Baud, Wide Area SmartZone, OmniLink, and ASTRO Digital CAI & PTT-ID Display	Q574	407	$1,675.00
ENH: TRUNKING 3600 BAUD SOFTWARE Software Package INCLUDES: 3600 Baud, SmartZone, OmniLink, and ASTRO Digital CAI & PTT-ID Display	Q575	407	$1,675.00
ENH: SOFTWARE P25 CONVENTIONAL (Also includes ASTRO Digital CAI; PTT-ID Display	Q811	407	$660.00
ENH: 3600/ 9600 INTEROPERABILITY COMPATIBLE with Q574 9600 Trunking only.	Q683	407	$500.00

System Enhancement Software

Description	Nomenclature	APC	Price
ADD: LINK LAYER RADIO AUTHENTICATION	H345	205	$100.00
ENH: CONVENTIONAL VOTE SCAN	Q387	205	$200.00

Systems Enhancement Options

Description	Nomenclature	APC	Price
ENH: OVER THE AIR PROVISIONING POP25 requires UCM & AES encryption for ASTRO Conventional operation. Must have IV&D (Q947) enabled. To do in field POP25 programming must use Advanced System Key (DVN4046A)	G996	205	$100.00
ENH: REMOTE MONITOR	H43	205	$100.00
ENH:TRUNKED 1 BTN STAT/MSG XTS2500	H46	407	$150.00
ENH: RADIO PACKET DATA This option is only capable of being used on P25 Digital Conventional and 9600 Trunking Systems. This option is required for IV & D operation. SHOULD order	Q947	407	$200.00

a cable for data connectivity

ADD: AUTO ROAMING CAPABILITY FOR X-SERIES SUBSCRIBERS	QA04444	655	$100.00

Algorithm Options

Description	Nomenclature	APC	Price
ENH: CONVENTIONAL TACTICAL REKEY WITH MULTIKEY Must order IV&D (Q947)	H04	407	$500.00
ADD: DVI-XL ENCRYPTION Requires Q159. (Analog 25 khz Only)	H793	205	$520.00
ADD: DVP-XL ENCRYPTION Q159 MUST BE ORDERED. (Analog 25 khz Only)	H797	407	$467.00
ADD: MULTI KEY	H868	407	$330.00
ADD: XTS2500 UCM HARDWARE ENCRYPTION *REQUIRED for ALL Encryption Algorithms listed on page. Not available on Model 1 radios.*	Q159	407	$150.00
ADD: ADP PRIVACY NOT AVAILABLE with Q443 software package. INCLUDES Multikey. REQUIRES Q159. ADP Privacy is not FIPS compliant - ADP Privacy not supported by OTAR - ADP is digital P25 conventional / P25 trunking only	Q406	407	$349.00
ADD: DES, DES-XL, DES-OFB ENCRYPTION Q159 MUST BE ORDERED(Analog 25 khz) / DES-OFB (Digital 12.5 khz Only)	Q625	407	$599.00
ADD: AES ENCRYPTION Q159 REQUIRED.	Q629	407	$475.00
ADD: ADP WITH DES, DES-XL, DES-OFB Q159 REQUIRED. NOT AVAILABLE with Q443. Includes MultiKey.	Q668	407	$799.00

Antenna

Description	Nomenclature	APC	Price
DEL: STANDARD UHF ANTENNA (NAE6549) Deletes Standard Antenna	H112	407	($10.00)
ALT: ANT HELICAL UHF 403-435MZ (NAE6546) Deletes the standard wideband whip antenna (360-512 MHz) and adds the described antenna.	H125	407	$0.00
ALT: ANTENNA UHF HELICAL 435-470 MHZ (NAE6547) Deletes the standard wideband whip antenna (403-512 MHz) and adds the described antenna.	H126	407	$0.00
ALT: ANTENNA UHF HELICAL 470-512 MHZ (NAE6548) Deletes the standard wideband whip antenna (403-512 MHz) and adds the described antenna.	H127	407	$0.00

Battery

Description	Nomenclature	APC	Price
DEL: BATTERY ALL TOGETHER The option will delete the XTS2500 Standard battery NIMH (NTN9858) for 700/800/900/UHF/VHF.	H207	407	($57.00)
ALT:BATT NIMH FM 2000 MAH (NTN9857) Deletes Standard Nickel Cadmium Battery that ships with the radio. Please Reference General Information for ordering instruction and Factory Mutual Information.	Q393	687	$47.00
ALT: IMPRES BATTERY FM NIMH IMMERSIBLE 2000 MAH(NNTN6263) Provides the immersible radio with FM Certification. Please reference general ordering instruction for additional Factory Mutual Information. Requires QA00211AA	Q393SUBM	205	$47.00
ALT: IMPRES BATTERY, LITH, 2700 MAH, IP67, IMMERSION (NNTN7335A) Immersibility on this battery is only available on XTS2500. If the customer requires immersion, this battery must be ordered in conjunction with the immersible housing option (QA00211AA).	QA00774	205	$93.00
ALT: XTS2500 IP67 SLIM LION 2100 (NNTN7554)	QA01426	205	$93.00

Belt Clip(s)

Description	Nomenclature	APC	Price
DEL: BELT CLIP (HLN6653)	H301	407	($12.00)
ALT: BELT CLIP 2 INCHES (HLN9844)	H315	407	$10.75

Conventional Factory Programming

Description	Nomenclature	APC	Price
ADD:CONVENTIONAL FACTORY PROGRAMMING 160 CHANNELS	H477	407	$0.00

Data Cable (s)

Description	Nomenclature	APC	Price
ADD: DATA CABLE This option gives you the RS232 programming cable (RKN4106) and requires Q947 Option.	Q157	205	$150.00

Housing

Description	Nomenclature	APC	Price
ALT: IP67 IMMERSIBLE OPTION If you also need the Intrinsically Safe Certification you must order the Q393SUBM for XTS2500. If FM is NOT required a NON FM Immersible battery will be automatically generated.	QA00211AA	407	$150.00

Programming

Description	Nomenclature	APC	Price
ENH: FCC CONV FPP AND CLONE Compatible with Digital Conventional Operation only - requires Q611. Only compatible with Model 3 radios. The connector accessory key (PMTN4113) is required for utilizing FPP. *When ordering the FPP option you only get 240 channels.	Q53AE	407	$150.00

Service Options

Description	Nomenclature	APC	Price

	H885BK	185	$84.00
Provides 2 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	H886AQ	185	$125.00
Provides 3 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ADD: 3 YR RSA COMPREHENSIVE	HA00022AB	185	$226.00
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ADD: 3YR REPAIR SERVICE ADVANTAGE COMPREHENSIVE (INCLUDING ENCRYPTION)	HA00025AA	185	$282.00
Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: XTS2500 CANADA 5 YR EXT WARR	HA00044	388	$144.00
Upgrades the standard warranty period to a full five (5) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.			
ENH: XTS2500 CANADA 3 YR EXT WARR	HA00045	388	$118.00
Upgrades the standard warranty period to a full three (3) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.			
ENH: XTS2500 CAN 5 YR ENCR EXT WARR	HA00046	388	$143.00
Upgrades the standard warranty period to a full five (5) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.			
ENH: XTS2500 CAN 3 YR ENCR EXT WARR	HA00047	388	$181.00
Upgrades the standard warranty period to a full three (3) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.			
ENH: 1 YR ENCRYPTED REPAIR SERVICE ADVANTAGE	Q57	185	$51.00
Provides for extended hardware repair coverage, including encryption, beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: 2 YEAR ENCRYPTED REPAIR SERVICE ADVANTAGE	Q58	185	$97.00
Provides 2 years of extended hardware repair coverage, including encryption, beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	Q884	185	$44.00
Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH:4 YEAR REPAIR SERVICE ADVANTAGE	Q887	185	$162.00
Provides 4 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: 3 YR ENCRY REPAIR SERVICE	QA01540	185	$145.00
Provides 3 years of extended hardware repair coverage, including encryption, beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			

Software Encryption

Description	Nomenclature	APC	Price
ENH: ADP PRIVACY	Q667	407	$10.00
NOT AVAILABLE with 3600 Trunking and Analog Conventional Software Packages. COMPATIBLE with the Q574 (P25 Trunking), Q611 (Digital Conventional), and Q575 (in the Digital Conventional Mode ONLY). ADP Privacy is not FIPS compliant - ADP Privacy not supported by OTAR - ADP is digital P25 conventional / P25 trunking only.			

Spare Parts

Description	Nomenclature	APC	Price
ADD: SPARE KNOB KIT	QA00542	407	$0.00

UNDEFINED

Description	Nomenclature	APC	Price
ENH: ENCRYPTED TACTICAL INHIBIT	H02	407	$75.00

Zone Operation

Description	Nomenclature	APC	Price
ENH: PROGRAMMED ZONE OPERATION	H371	407	$0.00
H477 is required when H371 is ordered			

Packaging

Description	Nomenclature	APC	Price
ADD: SPECIAL PACKAGING SINGLE	H842	407	$0.00
Ships orders in single unit boxes.			

Test Results

Description	Nomenclature	APC	Price
ADD: TEST RESULT PRINT OUT	H799	205	$0.00

Accessories

Enhancements

Description	Nomenclature	APC	Price

	DDN1131	407	$1,920.00
Motorola System bundle includes Software CD, gateway programming cable, configuration block, documentation. 1 Required per laptop			
ZEPHYR CARRYING CASE	DDN1132	407	$750.00
ZEPHYR PSM RSM BUNDLE XS-MED	DDN1133	407	$883.00
Motorola PSM bundle includes 1 BT BioHarness, 1 side strap (XS - Med), 1 remote speaker microphone			
ZEPHYR PSM RSM BUNDLE MED-XL	DDN1134	407	$883.00
Motorola PSM bundle includes 1 BT BioHarness, 1 side strap (med ? XL), 1 remote speaker microphone			
ZEPHYR BT REMOTE SPEAKER MIC (RSM)	DDN1135	407	$405.00
NONIN BT FINGER BLOOD OXIMITRY SPO2	DDN1136	407	$650.00
Contains CNet Bluetooth V2.0 USB Adaptor containing drivers for wireless Bluetooth BP & SPO2 devices.			
ZEPHYR BIOSHIRT RESPONDER - XXL	DDN1137	407	$186.00
ZEPHYR BIOSHIRT RESPONDER - XL	DDN1138	407	$186.00
ZEPHYR BIOSHIRT RESPONDER - LARGE	DDN1139	407	$186.00
ZEPHYR BIOSHIRT RESPONDER - MED	DDN1140	407	$186.00
ZEPHYR RSM CONFIGURATION BLOCK	DDN1141	407	$200.00
ZEPHYR GATEWAY RADIO CABLE	DDN1142	407	$470.00
ZEPHYR 4 BAY CHARGER	DDN1143	407	$220.00
ZEPHYR BLOOD PRESSURE WRIST DEVICE	DDN1144	407	$248.00
Contains CNet Bluetooth V2.0 USB Adaptor containing drivers for wireless Bluetooth BP & SPO2 devices			
ZEPHYR BIOSHIRT RESPONDER - SMALL	DDN1146	407	$186.00
ZEPHYR BIOHARNESS SIDE STRAP M-XL	DDN1147	407	$89.00
ZEPHYR BIOHARNESS SIDE STRAP XS-M	DDN1148	407	$89.00
ZEPHYR OMNISENSE SW CD & DOCUMENTS	DDN1149	407	$1,250.00
ZEPHYR BLUETOOTH BIOMODULE	DDN1150	407	$815.00
ZEPHYR 4 BAY CHARGER W USA PLUGPACK	DDN1151	407	$220.00
ZEPHYR XTS RID	DDN1159	407	$375.00
ZEPHYR PSM RID BUNDLE XS-MED	DDN1160	407	$908.00
Motorola PSM bundle includes 1 BT BioHarness, 1 side strap (XS - Med), 1 RID			
ZEPHYR PSM RID BUNDLE MED-XL	DDN1161	407	$908.00
Motorola PSM bundle includes 1 BT BioHarness, 1 side strap (med ? XL), 1 RID			

Algorithm Kits

Description	Nomenclature	APC	Price
SECURE BOARD M1.5 AES	PMLN4924A	205	$749.00
Includes both UCM Hardware Module & Software Encryption Algorithm. Requires Host/DSP, R07.00.00, version or later.			
SECURE BRD M1.5 DES,DES-XL,DES-OFB	PMLN4925A	205	$811.00
Includes both UCM Hardware Module & Software Encryption Algorithm. Requires Host/DSP, R07.00.00, version or later.			
SECURE BOARD M1.5 ADP	PMLN4926A	205	$637.00
Includes both UCM Hardware Module & Software Encryption Algorithm. Requires Host/DSP, R07.00.00, version or later.			
SECURE BOARD M2 AES	PMLN4927A	205	$611.00
Includes both UCM Hardware Module & Software Encryption Algorithm. Requires Host/DSP, R07.00.00, version or later.			
SECURE BRD M2 DES,DES-XL,DES-OFB	PMLN4928A	205	$749.00
Includes both UCM Hardware Module & Software Encryption Algorithm. Requires Host/DSP, R07.00.00, version or later.			
SECURE BOARD M2 ADP	PMLN4929A	205	$637.00
Includes both UCM Hardware Module & Software Encryption Algorithm. Requires Host/DSP, R07.00.00, version or later.			
SECURE BOARD M3 AES	PMLN4930A	205	$749.00
Includes both UCM Hardware Module & Software Encryption Algorithm. Requires Host/DSP, R07.00.00, version or later.			
SECURE BRD M3 DES,DES-XL,DES-OFB	PMLN4931A	205	$749.00
Includes both UCM Hardware Module & Software Encryption Algorithm. Requires Host/DSP, R07.00.00, version or later.			
SECURE BOARD M3 ADP	PMLN4932A	205	$637.00
Includes both UCM Hardware Module & Software Encryption Algorithm. Requires Host/DSP, R07.00.00, version or later.			
SECURE BOARD M1.5 DVP-XL	PMLN5062A	456	$637.00
SECURE BRD M2 DVP-XL	PMLN5063A	456	$637.00
SECURE BRD M3 DVP-XL	PMLN5064A	456	$637.00

Antenna

Description	Nomenclature	APC	Price
ANTENNA, 360-435MHZ UHF HELICAL	NAE6546	402	$16.50
ANTENNA, 470-520MHZ UHF HELICAL	NAE6548	402	$16.50

Battery

Description	Nomenclature	APC	Price
IMPRES NIMH, 2000 MAH, 7.5V BATTERY-INTRINS SAFE (FM) - RUGGEDIZED	NNTN6263	453	$135.00
JEDRAY LI ION BAT 2500MAH	NNTN7032A	453	$150.00
FINAL ASSEMBLY, BATTERY, JEDRAY LIION IMPRES BATT	NNTN7335A	453	$135.00
IMPRES NIMH, 2000 MAH, 7.5V BATTERY - INTRINS SAFE (FM)	NTN9857C	453	$130.00
IMPRESS NIMH, 2100 MAH, 7.5V BATTERY	NTN9858C	453	$110.00

Battery Maintenance Systems

Description	Nomenclature	APC	Price
NA FLEET MANAGEMENT LICENSE KEY	HKVN4036A	785	$489.00
FLEET MANAGEMENT CHRGR INTERFACE UNIT	NNTN7677A	785	$80.00
Multi-Unit Charger Interface Unit, attaches to an APX or XTS IMPRES multi-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to IMPRES Battery Fleet Management.			

Belt Clip(s)

Description	Nomenclature	APC	Price

	HLN6853	271	$11.50

Bluetooth, Mission Critical Wireless

Description	Nomenclature	APC	Price
BLUETOOTH HEADSET XTS W/ADAPTER	RLN6379A	742	$209.00
XTS BLUETOOTH ADAPTER	RMN5104A	742	$179.00

Cable(s)

Description	Nomenclature	APC	Price
CABLE- PROGRAMMING USB DOES NOT require Smart Rib. This cable MUST be ordered or the RKN4108 when you order the RVN4186 to program the Portable Radios. * PR1500 - uses RVN4181 CPS - No RIB Box required.	RKN4105	261	$237.00
CABLE- PROGRAMMING, RS232 This cable MUST be ordered or the RKN4105 when you order the RVN4186 to program the Portable Radios. * PR1500 - uses RVN4181 CPS - No RIB Boxrequired.	RKN4106	261	$251.00

Carrying Case(s)

Description	Nomenclature	APC	Price
LEATHER CASE W/HIGH ACTIVITY 3.0" SWIVEL BELT LOOP Includes swivel belt loop and t-strap, 3.0" Snap NiCad or NiMH.	NNTN4115	271	$60.00
LEATHER CASE W/HIGH ACTIVITY 2.5" SWIVEL BELT LOOP Includes swivel belt loop and t-strap, 2.5" Snap NiCad or NiMH.	NNTN4116	271	$60.00
LEATHER CASE W/SNAP BELT LOOP & T-STRAP Includes snap belt loop and t-strap. For NiCad or NiMH.	NNTN4117	271	$60.00
LEATHER T-STRAP, PLAIN ACTION SNAP	NTN6383	476	$10.50
LEATHER T-STRAP, HARD ACTION SNAP WITH ADDITIONAL STRENGTH AT SNAP	NTN6384	476	$10.50

Charger

Description	Nomenclature	APC	Price
CHARGER, 110 VOLT, US PLUG	NTN1687	476	$100.00
CHARGER, IMPRES RAPID RATE, 220V EURO PLUG Rapid charger, NiCad, NiMH, & Lithium batteries are for ALL XTS, MTS, MT, JT, and HT (WPLN4114AR, 2 prong Euro 3004208T01 Cord)	NTN1674	785	$185.00
VEHICULAR TRAVEL CHARGER Utilizes the cigarette lighter adapter. INCLUDES: mounting bracket, custom coil cord, and charger. Travel charger is best used and compatible with 2" belt clip.	RLN4884	785	$95.00
IMPRES MULTI UNIT CHARGER - 110V US PLUG NON-DISPLAY	WPLN4108 R	785	$788.00
IMPRES SINGLE-UNIT CHARGER, 220 VOLT, EURO PLUG	WPLN4112BR	785	$185.00
SINGLE BASE ONLY	WPLN4114AR	785	$180.00
IMPRES SINGLE-UNIT CHARGER, 240 VOLT, AUST/NZ PLUG	WPLN4115 R	785	$185.00
SINGLE UNIT ADAPTIVE CHG-ARGEN	WPLN4116 R	785	$185.00
IMPRES SINGLE CHARGER 110-230V US PLUG, EURO MANUAL	WPLN4117 R	785	$185.00
MULTI-UNIT CONDITIONING CHARGER, 4-STATION BASE, 110 VOLT INCLUDES: 4 station conditioning charger and AC power supply. Adapter plates sold separately. Motorola Conditioning Chargers are not compatible with Li-Ion batteries or RNN4008/4007 NiMH batteries *** Motorola Conditioning Chargers not compatible with NiMH batteries RNN4008B/RNN4007AR or any Li-ion batteries.	WPPN4065 R	785	$399.00

Commport Integrated Microphone/Receiver

Description	Nomenclature	APC	Price
COMMPORT WITH PALM PTT CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.	NTN1624	115	$419.00
COMMPORT WITH PTT ON RADIO ADAPTER CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.	NTN1625	115	$419.00
COMMPORT WITH RING PTT CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.	NTN1663	115	$429.00
COMMPORT WITH SNAP-ON SIDE PTT CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.	NTN1738	115	$429.00

Earpieces

Description	Nomenclature	APC	Price
RECEIVE-ONLY FOAM EARBUD WITH 3.5MM PLUG - INTRINSICALLY SAFE (FM) When used with MTP3000 models, to be used with remote speaker microphones PMMN4078A, PMMN4072A and PMMN4074A	AARLN4885	742	$25.00
EARBUD, RECEIVE ONLY, BLACK (SINGLE WIRE) *HT1000, XTS 3000, requires BDN6676 (3.5mm adapter jack) that attaches to the radio. *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *XTS 5000 & XTS 2500 requires BDN6676, Intrinsically Safe (FM). Assembled (receive only) with volume control & standard urethane earloop. *PR1500 - requires BDN6676 - Intrinsically Safe (FM))	BDN6781	742	$27.00
D-SHELL RX-ONLY EARPIECE(3.5MM)	PMLN4620A	742	$19.00
BONE CONDUCTION EAR MICROPHONE (XTS3000/5000/2500/1500/MT1500/PR1500)	PMLN5464	742	$395.00
EARPLUGS FOAM/ACOUSTIC TUBE BLACK	RLN6230A	742	$32.00
RUBBER EARTIP/ACOUSTIC TUBE BEIGE	RLN6241A	742	$20.00
QUICK DISCONNECT ACOUSTIC TUBE	RLN6242A	742	$7.90
EAR RCVR W/COIL CBL&3.5MM PLUG	WADN4190B	742	$43.00

Hardware

Description	Nomenclature	APC	Price
FPP CONNECTOR PROGRAMMING KEY This connector key (dongle) is required while utilizing FPP.	PMTN4113	407	$150.00

Headsets

Description	Nomenclature	APC	Price
HEADSET LIGHTWEIGHT Single Muff Lightweight Headset with In-Line PTT Switch (requires BDN6676 audio adapter)- Intrinsically Safe (FM) EX500, EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM)	NMN6245	785	$149.00
MED WEIGHT HEADSET, OVER-THE-HEAD, W/IN-LINE PTT-NRR=24DB-INTRIN (FM) Medium Weight Headset, Over the Head, with In-Line PTT - Noise Reduction Rating = 24dB -	NMN6256	742	$389.00
MED DUTY HEADSET,BEHIND-THE-HEAD, W/IN-LINE PTT-NRR= 24DB-INTRIN (FM) Medium Weight Headset, Behind the Head, with In-Line PTT - Noise Reduction Rating = 24dB	NMN6259	742	$425.00
TEMPLE TRANSDUCER W/BOOM MIC & PTT-RECEIVE AUDIO THROUGH THE TEMPLES Temple transducer-receive audio without covering the ear; behind the head style headset allows user to receive audio through the temples. Headset features a noise cancelling boom microphone and in-line PTT.	RMN4049	742	$225.00
RUGGED TEMPLE TRANSDUCER HEADSET Features a noise cancelling boom microphone and In-Line PTT	RMN5049	742	$340.00

Microphones

Description	Nomenclature	APC	Price
SPKR MIC NON-SUBMSBL,GPS RSM HMN4084 has the Earjack. Not compatible with Man-Down Side connector (NTN7660) or Clamshell Battery Holder (Q495, Q496, NTN9177, NTN9183). When used with XTS 2500, requires B version board. INCLUDES GPS RSM User guide (6881098C03)	HMN4084	372	$350.00
REMOTE SPEAKER MICROPHONE, IP57	PMMN4038A	372	$88.50
REMOTE SPEAKER MIC, NC	PMMN4046B	372	$97.00
REMOTE SPEAKER MIC, RX-JACK	PMMN4051B	372	$89.00

Multi Unit Chargers

Description	Nomenclature	APC	Price
IMPRES MULTI UNIT CHARGER - 230V EURO PLUG NON-DISPLAY	WPLN4109 R	765	$788.00
IMPRES MULTI CHARGER 230V UK 3 PIN PLUG NON DISPLAY	WPLN4110 R	785	$766.00

Public Safety Microphone(s)

Description	Nomenclature	APC	Price
PSM STRAIGHT CABLE 30IN	RMN5072B	372	$160.00
PSM STRAIGHT CABLE 24IN	RMN5073B	372	$160.00
PSM STRAIGHT CABLE 18IN	RMN5074B	372	$160.00

Surveillance

Description	Nomenclature	APC	Price
EARPIECE RECEIVE ONLY WITH STANDARD EARPHONE - BEIGE (SINGLE WIRE) *HT1000, XTS 2500, XTS 3000, & XTS 5000: Requires BDN6676(3.5mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adapter is not required. Assembled (receive only) with standard urethane ear loop. *EX500 & EX600 XLS - requires PMLN4455 -Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6664	742	$40.00
EARPIECE RECEIVE ONLY WITH EXTRA LOUD EARPHONE - BEIGE (SINGLE WIRE) *HT1000, XTS 2500, XTS 3000, & XTS 5000 -requires BDN6676(3.5mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adapter is not required. Assembled (receive only) with standard urethane ear loop. *EX500 & EX600 XLS - requires PMLN4455 -Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6665	742	$42.00
EARPIECE RECEIVE ONLY WITH VOLUME CONTROL - BEIGE (SINGLE WIRE) *HT1000, XTS 2500, XTS 3000, and XTS 5000: Requires BDN6676 (3.5mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adapter is not required. Intrinsically Safe (FM). Assembled (receive only) with standard urethane ear loop. *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6666	742	$53.00
EARPIECE WITH MICROPHONE & PTT COMBINED - BEIGE (2 WIRE) *XTS 2500, XTS 3000, and XTS 5000: Requires BDN6676(3.5mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adapter is not required. Intrinsically Safe (FM). Assembled (receive only) with standard urethane ear loop. *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6667	742	$114.00
EARPIECE WITH MICROPHONE & PTT SEPARATE - BEIGE (3 WIRE) *HT1000, XTS 2500, XTS 3000, and XTS 5000: Requires BDN6676(3.5mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adapter is not required. Intrinsically Safe (FM). Assembled (receive only) with standard urethane ear loop. * EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6668	742	$135.00
EARPIECE, MIC & PTT COMBINED W/EXTRA LOUD EARPIECE - BEIGE (2 WIRE) *HT1000, XTS 2500, XTS 3000, and XTS 5000: Requires BDN6676(3.5mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adapter is not required. Intrinsically Safe (FM). Assembled (receive only) with standard urethane ear loop. *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6669	742	$116.00
EARPIECE W/MIC & PTT SEPARATE W/XTRA LOUD EARPIECE - BEIGE (3 WIRE) *HT1000, XTS 2500, XTS 3000, and XTS 5000: requires BDN6676(3.5mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adapter is not required. Intrinsically Safe (FM). Assembled (receive only) with standard urethane ear loop. *EX500 & EX600 XLS REQUIRES PMLN4455. *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6670	742	$150.00
EARPIECE RECEIVE ONLY WITH STANDARD EARPHONE - BLACK (SINGLE WIRE) *HT1000, XTS 3000 require BDN6676 (3.5 mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adapter is not required. *XTS 2500 and XTS 5000 requires new adaptor -Intrinsically Safe (FM) *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6726	742	$40.00
EARPIECE RECEIVE ONLY WITH VOLUME CONTROL - BLACK (SINGLE WIRE) *XTS 3000 require BDN6676 (3.5 mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adapter is not required. *XTS 2500 and XTS 5000 requires new adaptor - Intrinsically Safe (FM). *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6728	742	$53.00
EARPIECE WITH MICROPHONE & PTT COMBINED - BLACK (2 WIRE) *XTS 2500, XTS 3000 and XTS 5000 require BDN6676 (3.5 mm adapter jack) that attaches to the radio. *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6729	742	$114.00
EARPIECE WITH MICROPHONE & PTT SEPARATE - BLACK (3 WIRE)			

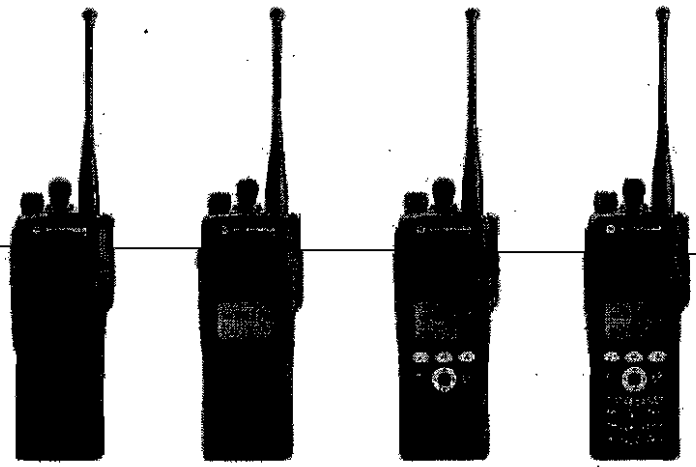
	BDN6730	742	$135.00
*HT1000, XTS 3000 require BDN6676 (3.5mm adapter jack) that attaches to the radio. *XTS 2500 & XTS 5000 requires new adaptor - Intrinsically Safe (FM). *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)			
EARPIECE, MIC & PTT COMBINED W/EXTRA LOUD EARPIECE - BLACK (2 WIRE) *HT1000, XTS 3000, require BDN6676 (3.5mm Adapter Jack)that attaches to the radio. *XTS 2500 & XTS 5000 requires new adaptor - Intrinsically Safe (FM). *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6731	742	$118.00
EARPIECE W/MIC & PTT SEPARATE W/XTRA LOUD EARPIECE - BLACK (3 WIRE) *HT1000, XTS 3000 require BDN6676 (3.5mm adapter jack) that attaches to the radio. * *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM). *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6732	742	$150.00
COMPLETELY DISCREET EARPIECE KIT Wireless earpiece-communicates to the radio through an inductive neckloop. Neckloop must be used with any standard 2 or 3 wire surveillance kit.	RLN4922	742	$340.00

Manual(s)

Description	Nomenclature	APC	Price
MANUAL USER GUIDE XTS2500 MODEL I Operations/User's manual PAPER.	6881094C04	205	$11.25
~~USER GUIDES CD XTS2500~~	~~9985898D01~~	~~001~~	~~$10.50~~
MANUAL CD SERVICE ENGLISH XTS 1500, 2500, AND MT 1500 XTS2500, XTS1500, MT1500 BASIC SERVICE MANUAL PAPER	9985899D01	001	$10.50
MANUAL CD SERVICE AND THEORY ENGLISH XTS 1500, 2500, AND MT 1500 XTS2500, XTS1500, MT1500 BASIC SERVICE MANUAL PAPER	9985900D01	207	$31.75

Date Compiled 16-May-2013 using DUP and all prices in USD

ASTRO® Digital XTS 2500 Portable Series
VHF
Wide Area SmartZone® "Handie-Talkie™" Radio
Trunked Radio Systems



Special Note for United States - State & Local Markets only:

In accordance with FCC mandate, the XTS 2500 VHF products operating on Part 90 frequencies will be restricted to 12.5kHz or narrower operations on Jan. 1, 2013

Ship Card

Features

All ASTRO Digital XTS 2500 packaged models include the following hardware features:

- 3 Programmable Side Buttons
- Orange Emergency Button
- 16 Position Mode Rotary Select Switch
- On/Off Volume
- Low Battery Alert Tone
- Antenna (Bandsplit and Type Dependent on Band Option)
- Noise Reduction Software
- 1 Top Mounted Programmable Three Position Concentric Switch
- Weather Sealed Universal Connector
- Bi-Color LED Indicator
- IMPRES Nickel Metal Hydride Battery (NTN9858)
- Detachable Belt Clip
- ASTRO 25
- Audio Gain Control

ASTRO Digital XTS 2500 Model I,5, II and III also include:

- DTMF Telephone Interconnect Capability (Model III ONLY)
- 8 Lines Alphanumeric Display (No Model I)
- Date and Time Stamp
- Hardware Encryption (Not Available on Model 1)
- Keypad Tone Mute (Model II and III only)
- Large Navigational Keypad (Model II and III only)
- Real Time Clock

All ASTRO Digital XTS 2500 Portables are part of the FLASHport program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the same RF deck.) **Please note that Models 1 and 2 are not available in the Asia Pacific Region**

Physiological Monitoring Solution

Physiological Monitoring is now available on the ASTRO 25 XTS5000 and XTS2500 portable radios. The Zephyr BioHarness™ BT couples the pioneering Smart Fabric sensor technology of the comfortable and unobtrusive BioHarness™ garment with the power and ubiquity of Bluetooth®. BioHarness™ BT enables the capture and transmission of comprehensive physiological data on the wearer exclusively via MOTOROLA ASTRO RADIOS – enabling genuine remote monitoring of human performance and condition in the real world.

The BioHarness™ BT can be used in a diverse range of areas including sports, defense, first responder and healthcare. Its professional-grade BioHarness™ system monitors conditions such as heat state, dehydration or injury by measuring vital signs including heart rate, breathing rate, skin temperature, posture and activity. Using the subject's voice radio, the BioHarness communicates to monitoring software designed to give real-time alerts and post-event analysis.

BioHarness™ BT can be worn in virtually any environment – from combat situations to the training field. It maintains performance under extreme activity. Offering fast, accurate collection and analysis of high-quality, in-depth data, BioHarness™ BT is the definitive product for remote physiological monitoring in all conditions.

Zephyr Physiological Monitoring Ordering Guide

General Information

The ASTRO Digital XTS 2500 Portable Line offers three different radio hardware models:

Hardware Model	Modes	Alphanumeric Display	Keypad	Navigation Pad
		Lines/Characters per Line		
ASTRO XTS 2500 Model I	48	None	None	No
ASTRO XTS 2500 Model I.5	256	6/12/front mount	None	No
ASTRO XTS 2500 Model II	870	6/12/front mount	3 x 2	Yes
ASTRO XTS 2500 Model III	870	6/12/front mount	3 x 6	Yes

Operating Modes

ASTRO Digital XTS 2500 Radio Models are capable of operating in three different voice communication modes:

- Normal Analog (clear voice) • 3.6KB ASTRO Digital (clear voice) • 9.6KB ASTRO 25 Digital (clear voice)

The ASTRO Digital XTS 2500 Portable is capable of 48 modes when the programmable Concentric Top Mounted Switch is used for Zone Operation. The mode of operation is programmed on a channel-by-channel basis.

Please note that the XTS 2500 does NOT support FRED.

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the ASTRO Digital XTS 2500 Portable Radio Series. Separation of frequencies can be as wide as the allowable sub-band per radio model with no degradation of any performance specifications. If an incorrect antenna is used, degraded performance may be experianced.

FIPS 140-2 Compliance

Encryption Modules equipped with AES are FIPS 140-2 compliant. Further information regarding FIPS 140-2 certification may be found using the following links:

FIPS 140-2 Crypto Module Validation Program (CMVP)

NIST Cryptographic Module Validation Lists

FLASHport® AFTERMARKET UPGRADES

The ASTRO Digital XTS 2500 Portable Series Radios are part of the FLASHport Program. This means that ASTRO Digital XTS 2500 hardware models can be loaded with different software packages that provide the features and functionalities that your customers require. Three different hardware models are available in each band split.

The ASTRO Digital XTS 2500 portable can be upgraded electronically (via RS232 cable or USB cable are required for all software upgrades) in the field with new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

FM INFORMATION

The XTS 2500 portable radio when properly equipped with options H223, Q393 or Q393SUBM are Factory Mutual (FM/CSA) approved as intrinsically safe for use in, Division 1, Class I, II, III, Groups C, D, E, F, G, T3 without encryption modules.

The XTS 2500 portable radio when properly equipped with options H223, Q393 or Q393SUBM are Factory Mutual (FM/CSA) approved as intrinsically safe for use in, Division 1, Class I, Class II, Class III, Groups D ,F, G, T3C with encryption modules.

ASTRO TEXT MESSAGING SERVICE

ASTRO Text Messaging Service will be available on ASTRO 25 XTS 5000, XTS 2500 Portable radios and ASTRO 25 XTL 5000, XTL 2500 Mobile radios. Text

Messaging Service (TMS) allows subscriber users to send and receive text messages to other subscribers or dispatch operators. Users can select messages and addresses from a predefined list or enter freeform text messages and addresses via the keypad. Text Messaging Service is available on ASTRO Trunked IV&D Systems and Subscribers. Subscribers must have version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software.

For full Text Messaging functionality, including freeform text messaging and addressing, must order Model III XTS2500 portables. Model II versions support Limited Text Messaging functionality such as selecting predefined messages or addresses from a list programmed in the radio. Text messaging service is NOT supported on Model I Portables.
Ordering requirements for XTS 2500 Portable:

- Requires Model II or Model III XTS 2500
- Software Trunking 9600 Baud (Q574)
- Packet Data Interface (Q947)

NOTE: There is no specific option to order for the Text Messaging Service on the subscribers as the functionality is included in the Packet Data option.

RELATIVE RADIATED RECEIVE SENSITIVITY

The relative radiated receive sensitivity test (formerly referred to as self-quieters) measures the sensitivity from 136.05MHz to 173.975MHz in 12.5kHz steps. The radio is set to 25kHz channel mode. These measurements were taken in a shielded environment so that degraded sensitivity at the discrete frequencies is known to be due to the radio's self-interference (as opposed to external interference.) The following list contains frequencies which were consistently found to have severely degraded performance on all measured radios: 147.4450, 147.4475, 147.4500, 151.1975, 151.2000, 153.6000, 161.9975, 162.000, 162.0025, 165.8975, 165.9000, 165.9025, 167.9975, 168.000, 168.0025, 172.0200, 172.0225.

UPDATED LIST OF FREQUENCIES NOT ALLOWED

When a Platform A radio is repaired with a Platform B RF board there will be additional frequencies that are not recommended to be used. The following list contains frequencies which were consistently found to have severely degreded performance on all measured radios (secure and non-secure):

VHF (136 to 174 MHz) 140.5, 144, 147.4475, 147.4575, 151.2*, 151.735*, 153.6*, 159.745, 162, 162.295, 165.9, 166*, 170.3975, 172.02

UHF Range 1 (380 to 470 MHz) 381.535, 384, 389.49, 393.195, 398*, 397.4375, 405.38, 413.33, 414*, 415.5, 417.77, 420*, 421.26, 429.23, 429.544, 431.1, 432*, 432.613, 437.16125, 442.344, 445.13125, 450*, 460.6, 466.92, 466*

UHF Range 2 (450 to 520 MHz) 450, 453.6*, 456*, 460.6*, 462, 466.91875, 466*, 469.425, 470.4*, 474, 475.5*, 480, 486*, 487.2*, 491.49375, 492, 497.705, 498, 502.2, 504, 510, 516, 516.065

700/800 MHz (764 – 776 MHz, 851 MHz – 870 MHz) 858.3375, 857.7000, 860.7000, 862.2000, 863.7000, 864.0000, 867.3000

Ordering Requirements

Ordering procedure is as follows:

1	**H46KDC9PW7BN**	**ASTRO XTS 2500 Portable**
1A	**Q574**	**9600 Trunking Digital Operation**
1B	***etc***	

1. Order the ASTRO Digital XTS 2500 Portable Series as the main line item (H46KDC9PW7_N).
2. Each hardware model **MUST** be ordered with one Operating Mode. One Operating Mode Package MUST be ordered for each radio unit ordered. Choose between 9600 Trunking and 3600 Analog/ Digital Trunking Operation.

SOFTWARE FEATURES SUPPORTED BY Q574 Wide Area SmartZone / Q575 Wide Area SmartZone / Q443 Wide Area Analog SmartZone/ Q811 P25 Digital Conventional	"ASTRO Digital"(Q575)	"ASTRO Digital"(Q574)	3600 Analog (Q443)	P25 Conventional (Q811)
	Non-Project 25	Project 25	Type II	Project 25
	(3600 Baud)	(9600 Baud)	(3600 Baud)	Conventional
RADIO WIDE FEATURES				
Maximum Modes				
ASTRO Digital XTS 2500 Model 1	16/48	16/48	16/48	16/48
ASTRO Digital XTS 2500 Model 1.5	256	256	256	256
ASTRO Digital XTS 2500 Model II & III	870	870	870	870
Analog and Digital Operation	Yes	Yes	Analog Only	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable (Hardware Encryption Not Available on Model 1 Radios)	Yes	Yes	All but ADP	Yes
One Touch Operation	Yes	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes	Yes
Surveillance Mode	Yes	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes	Yes

Radio Lock	Yes	Yes	Yes	Yes
Smart (IMPRES) Battery	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	May 04'	May 04'	May 04'	May 04'
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified above.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	No	No	No	No
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes	Yes
MDC-1200™ Call Lists (Call Alert/Select Call)	Yes	Yes	Yes	Yes
MDC-1200 Call Alert Encode/Decode	Yes	Yes	Yes	Yes
MDC-1200 Emergency Call	Yes	Yes	Yes	Yes
MDC-1200 Voice Selective Call Encode/Decode	Yes	Yes	Yes	Yes
MDC-1200 Remote Monitor Decode	Decode Only	Decode Only	Decode Only	Decode Only
MDC-1200 Silent Emergency Alarm	Yes	Yes	Yes	Yes
MDC-1200 Selective Radio Inhibit Decode	Decode Only	Decode Only	Decode Only	Decode Only
MDC-1200 Radio Check Decode	Decode Only	Decode Only	Decode Only	Decode Only
MDC-1200 PTT-ID Decode/Encode	Yes	Yes	Yes	Yes
MDC Repeater Access	Yes	Yes	Yes	Yes
MDC Request to Talk (RTT)	Yes	Yes	Yes	Yes
MDC Status, Status Request, Message	Yes	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Conventional Interoperable Features when used in the ASTRO Digital CAI Mode (Q806).				
Unaddressed Voice Call	Yes	Yes	No	Yes
Talk Group Call	Yes	Yes	No	Yes
Group Call Alert™	Yes	Yes	No	Yes
Talk Group Identification (TGID)	Yes	Yes	No	Yes
Selective Call (Individual Voice Call)	Yes	Yes	No	Yes
PTT ID (Individual Identification)	Yes	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	No	Yes
Emergency Alarm w/Channel Revert & Ack.	Yes	Yes	No	Yes
Telephone Interconnect	Yes	Yes	No	Yes
Selective Radio Inhibit	Yes	Yes	No	Yes
Radio Check	-	-	No	-
Status/Message	Yes	Yes	No	Yes
Trunking Type II Only Features				
Maximum Number of Trunked Systems-20	Yes	Yes	Yes	No
Talkgroup Calls	Yes	Yes	Yes	No
PTT ID (Digital Only)	Yes	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes	No
Dual Mode Scan	Yes	No	Yes	No
Failsoft by Talkgroup	Yes	Yes	Yes	No
Telephone Interconnect Encode/Decode	Yes	Yes	Yes	No
System Wide Call (Receive Only)	Yes	No	Yes	No
Selective Radio Inhibit	Yes	Yes	Yes	No
Priority Monitor Scan	Yes	Yes	Yes	No
Dynamic Regrouping	Yes	Yes	Yes	No
Status/Message	No	No	No	No
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes	No
Radio Check	No	No	No	No

Remote Monitor/Radio Trace	Yes	No	Yes	Yes
Reprogram Request	No	No	No	No
SmartZone Trunking Type II Only Features				
Adaptive Power Control	Yes	Yes	Yes	No
Voice on Control	Future	Future	Future	No
SmartZone Automatic Site Registration	Yes	Yes	Yes	No
SmartZone RSSI Operation	Yes	Yes	Yes	No
SmartZone Preferred Site	Yes	Yes	Yes	No
SmartZone Forced Site Search	Yes	Yes	Yes	No
SmartZone Site Lock/Unlock	Yes	Yes	Yes	No
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	No
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	No

Legend:
Blue=Feature to be added in a Future Release

FCC Information

FCC IDENTIFIER: AZ489FT3807

Name of Grantee: Motorola Solutions, Inc.

Equipment Class: Licensed Non-Broadcast Transmitter Held to Face
Notes: Astro XTS2500 Digital Portable Radio
Modular Type: Does not apply

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance	Emission Designator
BC	90.210	136.0 - 174.0	5.7	2.5 PM	11K0F3E
BC	90	136.0 - 174.0	5.7	2.5 PM	16K0F3E
BC	90.210	136.0 - 174.0	5.7	2.5 PM	8K10F1D
BC	90.210	136.0 - 174.0	5.7	2.5 PM	6K10F1E
BC	80	136.0 - 174.0	5.7	2.5 PM	11K083E
BC	80	136.0 - 174.0	5.7	2.5 PM	16K0F3E
BC	80	136.0 - 174.0	5.7	2.5 PM	8K10F1D
BC	80	136.0 - 174.0	5.7	2.5 PM	8K10F1E

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

XTS 2500 PORTABLE RADIO SPEC SHEET

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on XTS 2500 Dual Display Portable radios. Advanced Messaging is NOT supported on XTS 2500 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for XTS 2500 Portable Requires:

· XTS 2500 Dual Display

· P25 Conventional (Q811)

· Packet Data Interface (Q947)

OR

· XTS 2500 Dual Display

· ASTRO Project 25 Trunking Software (Q574/Q575)

· Packet Data Interface (Q947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

Models

Description	Nomenclature	APC	Price
XTS2500 136-174MHZ/ 1-5W/ 48 CHANNELS/ NO KEYPAD/ MODEL 1	H46KDC9PW5BN	407	$650.00
XTS2500 136-174MHZ/ 1-5W/ 96 CHANNELS/ NO KEY PAD/ MODEL 1.5	H46KDD9PW5BN	407	$950.00
XTS2500 136-174MHZ/ 1-5W/ 870 CHANNELS/ 3X2 KEYPAD/ MODEL 2	H46KDF9PW6BN	407	$1,550.00
XTS2500 136-174MHZ/ 1-5W/ 870 CHANNELS/ 3X6 KEYPAD/ MODEL 3	H46KDH9PW7BN	407	$1,950.00

Options

Operation Mode

Description	Nomenclature	APC	Price
ENH: SOFTWARE ANALOG 3600 BAUD Software package INCLUDES: 3600 baud, Smartzone, and Omnilink; PTT-ID Display	Q443	407	$1,280.00
ENH: SOFTWARE TRUNKING 9600 BAUD Software Package INCLUDES: 9600 Baud, Wide Area SmartZone, OmniLink, and ASTRO Digital CAI & PTT-ID Display	Q574	407	$1,675.00
ENH: TRUNKING 3600 BAUD SOFTWARE Software Package INCLUDES: 3600 Baud, SmartZone, OmniLink, and ASTRO Digital CAI & PTT-ID Display	Q575	407	$1,675.00
ENH: SOFTWARE P25 CONVENTIONAL (Also Includes ASTRO Digital CAI; PTT-ID Display	Q811	407	$660.00
ENH: 3600/ 9600 INTEROPERABILITY COMPATIBLE with Q574 9600 Trunking only.	Q683	407	$500.00

System Enhancement Software

Description	Nomenclature	APC	Price
ADD: LINK LAYER RADIO AUTHENTICATION	H345	205	$100.00
ENH: CONVENTIONAL VOTE SCAN	Q387	407	$200.00

Systems Enhancement Options

Description	Nomenclature	APC	Price
ENH: OVER THE AIR PROVISIONING P0P25 requires UCM & AES encryption for ASTRO Conventional operation. Must have IV&D (Q947) enabled. To do in field P0P25 programming must use Advanced System Key (DVN4048A)	G996	205	$100.00
ENH: REMOTE MONITOR	H43	407	$100.00
ENH:TRUNKED 1 BTN STAT/MSG XTS2500	H46	407	$150.00
ENH: RADIO PACKET DATA This option is only capable of being used on P25 Digital Conventional and 9600 Trunking Systems. This option is required for IV & D operation. SHOULD order a cable for data connectivity	Q947	407	$200.00
ADD: AUTO ROAMING CAPABILITY FOR X-SERIES SUBSCRIBERS	QA04444	655	$100.00

Algorithm Options

Description	Nomenclature	APC	Price
ENH: CONVENTIONAL TACTICAL REKEY WITH MULTIKEY Must order IV&D (Q947)	H04	407	$500.00
ADD: DVI-XL ENCRYPTION Requires Q159. (Analog 25 khz Only)	H793	205	$520.00
ADD: DVP-XL ENCRYPTION Q159 MUST BE ORDERED. (Analog 25 khz Only)	H797	407	$467.00
ADD: MULTI KEY	H869	407	$330.00
ADD: XTS2500 UCM HARDWARE ENCRYPTION REQUIRED for ALL Encryption Algorithms listed on page. Not available on Model 1 radios.	Q159	407	$150.00
ADD: ADP PRIVACY	Q406	407	$349.00

NOT AVAILABLE with Q443 software package. INCLUDES Multikey. REQUIRES Q159. ADP Privacy is not FIPS compliant - ADP Privacy not supported by OTAR - ADP is digital P25 conventional / P25 trunking only			
ADD: DES, DES-XL, DES-OFB ENCRYPTION Q159 MUST BE ORDERED(Analog 25 khz) / DES-OFB (Digital 12.5 khz Only)	Q625	407	$599.00
ADD: AES ENCRYPTION Q159 REQUIRED.	Q629	407	$475.00
ADD: ADP WITH DES, DES-XL, DES-OFB Q159 REQUIRED. NOT AVAILABLE with Q443. Includes MultiKey.	Q666	407	$799.00

Antenna

Description	Nomenclature	APC	Price
DEL: STANDARD VHF ANTENNA (NAD6563) Deletes Standard Antenna	H112	407	($10.00)
ALT: ANTENNA HELICAL VHF 136-150.9 (NAD6566) Deletes the standard wideband helical antenna and adds the described antenna.	H126	407	$0.00
ALT: ANTENNA HELICAL VHF 150.8-162 MHZ (NAD6567) Deletes the standard wideband helical antenna and adds the described antenna.	H129	407	$0.00
ALT: ANTENNA VHF HELICAL 162-174 MHZ (NAD6566) Deletes the standard wideband helical antenna and adds the described antenna.	H65	407	$0.00

Battery

Description	Nomenclature	APC	Price
DEL: BATTERY ALL TOGETHER The option will delete the XTS2500 Standard battery NIMH (NTN9858) for 700/800/900/UHF/VHF.	H207	407	($57.00)
ALT: BATTERY IMPRES NIMH FM 2000MAH (NTN9657) Deletes the Standard Nickel Cadmium Battery that ships with this radio. Please Reference General Information for ordering instruction and Factory Mutual Information.	Q393	205	$47.00
ALT: IMPRES BATTERY FM NIMH IMMERSIBLE 2000 MAH(NNTN6263) Provides the immersible radio with FM Certification. Please reference general ordering instruction for additional Factory Mutual Information. Requires QA00211AA	Q393SUBM	205	$47.00
ALT:BATTERY HOLDER CLAMSHELL BLACK Clamshells do not ship with a clip, clip must be ordered separate. The NTN8288B belt clip will work with the clam shell battery.	Q495	407	$0.00
ALT: IMPRES BATTERY, LITH, 2700 MAH, IP67, IMMERSION (NNTN7335A) Immersibility on this battery is only available on XTS2500. If the customer requires immersion, this battery must be ordered in conjunction with the immersible housing option (QA00211AA).	QA00774	205	$93.00
ALT: XTS2500 IP67 SLIM LIION 2100 (NNTN7554)	QA01426	205	$93.00

Belt Clip(s)

Description	Nomenclature	APC	Price
DEL: BELT CLIP (HLN6653)	H301	407	($12.00)
ALT: BELT CLIP 2 INCHES (HLN9644)	H315	407	$10.75

Conventional Factory Programming

Description	Nomenclature	APC	Price
ADD:CONVENTIONAL FACTORY PROGRAMMING 160 CHANNELS	H477	407	$0.00

Data Cable (s)

Description	Nomenclature	APC	Price
ADD: DATA CABLE This option gives you the RS232 programming cable (RKN4106) and requires Q947 Option.	Q157	205	$150.00

Housing

Description	Nomenclature	APC	Price
ALT: IP67 IMMERSIBLE OPTION If you also need the Intrinsically Safe Certification you must order the Q393SUBM for XTS2500. If FM is NOT required a NON FM immersible battery will be automatically generated.	QA00211AA	407	$150.00

Programming

Description	Nomenclature	APC	Price
ENH: FCC CONV FPP AND CLONE Compatible with Digital Conventional Operation only - requires Q811. Only compatible with Model 3 radios. The connector accessory key (PMTN4113) is required for utilizing FPP. *When ordering the FPP option you only get 240 channels.	Q53AE	407	$150.00

Service Options

Description	Nomenclature	APC	Price
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE Provides 2 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	H685BK	165	$84.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE Provides 3 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	H686AQ	185	$125.00
ADD: 1 YR RSA COMPREHENSIVE	HA00020AA	185	$86.00
	Intent to Cancel Date:		15-Jan-2013
ADD: 2 YR RSA COMPREHENSIVE	HA00021AA	185	$163.00
	Intent to Cancel Date:		15-Jan-2013
ADD: 3 YR RSA COMPREHENSIVE	HA00022AB	185	$228.00

Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios.

Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ADD: 1 YR ENCRYPT RSA COMPREHENSIVE	HA00023AA	185	$90.00
	Intent to Cancel Date:		15-Jan-2013
ADD: 2 YR ENCRYPT RSA COMPREHENSIVE	HA00024AA	185	$171.00
	Intent to Cancel Date:		15-Jan-2013
ADD: 3YR REPAIR SERVICE ADVANTAGE COMPREHENSIVE (INCLUDING ENCRYPTION)	HA00025AA	185	$262.00

Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ENH: 1 YR ENCRYPTED REPAIR SERVICE ADVANTAGE	Q57	185	$51.00

Provides for extended hardware repair coverage, including encryption, beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ENH: 2 YEAR ENCRYPTED REPAIR SERVICE ADVANTAGE	Q58	185	$97.00

Provides 2 years of extended hardware repair coverage, including encryption, beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

3 YR ENCRYPTED REPAIR SERVICE ADVANTAGE	Q58AK	185	$145.00

Provides for extended hardware repair coverage, including encryption, beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	Q884	185	$44.00

Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ENH:4 YEAR REPAIR SERVICE ADVANTAGE	Q887	185	$162.00

Provides 4 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ENH: 3 YR ENCRY REPAIR SERVICE	QA01540	185	$145.00

Provides 3 years of extended hardware repair coverage, including encryption, beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Software Encryption

Description	Nomenclature	APC	Price
ENH: ADP PRIVACY	Q687	407	$10.00

NOT AVAILABLE with 3600 Trunking and Analog Conventional Software Packages. COMPATIBLE with the Q574 (P25 Trunking), Q611 (Digital Conventional), and Q575 (in the Digital Conventional Mode ONLY). ADP Privacy is not FIPS compliant - ADP Privacy not supported by OTAR - ADP is digital P25 conventional / P25 trunking only.

Spare Parts

Description	Nomenclature	APC	Price
ADD: SPARE KNOB KIT	QA00542	407	$0.00

Packaging

Description	Nomenclature	APC	Price
ADD: SPECIAL PACKAGING SINGLE	H642	407	$0.00

Ships orders in single unit boxes.

Test Results

Description	Nomenclature	APC	Price
ADD: TEST RESULT PRINT OUT	H799	205	$0.00

Accessories

Enhancements

Description	Nomenclature	APC	Price
ZEPHYR PSM SYSTEM BUNDLE	DDN1131	407	$1,920.00

Motorola System bundle includes Software CD, gateway programming cable, configuration block, documentation. 1 Required per laptop

ZEPHYR CARRYING CASE	DDN1132	407	$750.00
ZEPHYR PSM RSM BUNDLE XS-MED	DDN1133	407	$863.00

Motorola PSM bundle includes 1 BT BioHarness, 1 side strap (XS - Med), 1 remote speaker microphone

ZEPHYR PSM RSM BUNDLE MED-XL	DDN1134	407	$863.00

Motorola PSM bundle includes 1 BT BioHarness, 1 side strap (med ? XL), 1 remote speaker microphone

ZEPHYR BT REMOTE SPEAKER MIC (RSM)	DDN1135	407	$405.00
NONIN BT FINGER BLOOD OXIMITRY SPO2	DDN1136	407	$650.00

Contains CNet Bluetooth V2.0 USB Adaptor containing drivers for wireless Bluetooth BP & SPO2 devices.

ZEPHYR BIOSHIRT RESPONDER - XXL	DDN1137	407	$186.00
ZEPHYR BIOSHIRT RESPONDER - XL	DDN1138	407	$186.00
ZEPHYR BIOSHIRT RESPONDER - LARGE	DDN1139	407	$186.00
ZEPHYR BIOSHIRT RESPONDER - MED	DDN1140	407	$186.00
ZEPHYR RSM CONFIGURATION BLOCK	DDN1141	407	$200.00
ZEPHYR GATEWAY RADIO CABLE	DDN1142	407	$470.00
ZEPHYR 4 BAY CHARGER	DDN1143	407	$220.00
ZEPHYR BLOOD PRESSURE WRIST DEVICE	DDN1144	407	$248.00

Contains CNet Bluetooth V2.0 USB Adaptor containing drivers for wireless Bluetooth BP & SPO2 devices

ZEPHYR BIOSHIRT RESPONDER - SMALL	DDN1146	407	$186.00
ZEPHYR BIOHARNESS SIDE STRAP M-XL	DDN1147	407	$69.00

ZEPHYR BIOHARNESS SIDE STRAP XS-M	DDN1146	407	$89.00
ZEPHYR OMNISENSE SW CD & DOCUMENTS	DDN1149	407	$1,250.00
ZEPHYR BLUETOOTH BIOMODULE	DDN1150	407	$615.00
ZEPHYR 4 BAY CHARGER W USA PLUGPACK	DDN1151	407	$220.00
ZEPHYR XTS RID	DDN1159	407	$375.00
ZEPHYR PSM RID BUNDLE XS-MED Motorola PSM bundle includes 1 BT BioHarness, 1 side strap (XS - Med), 1 RID	DDN1160	407	$908.00
ZEPHYR PSM RID BUNDLE MED-XL Motorola PSM bundle includes 1 BT BioHarness, 1 side strap (med ? XL), 1 RID	DDN1161	407	$908.00

Adapter

Description	Nomenclature	APC	Price
3.5 MM JACK ADAPTER WITH QUICK DISCONNECT LATCH For use with 1, 2 & 3 wire earpiece.	BDN6676	742	$52.50

Antenna

Description	Nomenclature	APC	Price
ANTENNA, 136-174MHZ WIDEBAND DIPOLE	NAD6563	476	$24.00
ANTENNA, 136-150.8MHZ WIDEBAND HELICAL	NAD6566	476	$16.50
ANTENNA, 150.8-162MHZ WIDEBAND HELICAL	NAD6567	476	$16.50
ANTENNA, 162-176MHZ WIDEBAND HELICAL	NAD6568	476	$16.50

Battery

Description	Nomenclature	APC	Price
IMPRES NIMH, 2000 MAH, 7.5V BATTERY-INTRINS SAFE (FM) - RUGGEDIZED	NNTN8263	453	$135.00
JEDRAY LI ION BAT 2500MAH	NNTN7032A	453	$150.00
FINAL ASSEMBLY, BATTERY, JEDRAY LIION IMPRES BATT	NNTN7335A	453	$135.00
IMPRES NIMH, 2000 MAH, 7.5V BATTERY - INTRINS SAFE (FM)	NTN9857C	453	$130.00
IMPRESS NIMH, 2100 MAH, 7.5V BATTERY	NTN9858C	453	$110.00

Battery Maintenance Systems

Description	Nomenclature	APC	Price
NA FLEET MANAGEMENT LICENSE KEY	HKVN4036A	765	$469.00
IMPRES BATTERY DATA READER Provides IMPRES battery users ability to access key usage data via PC. Compatible w/all IMPRES batteries (HT/PRO,TRBO & APX adapter included)	NNTN7392	765	$250.00
FLEET MANAGEMENT CHRGR INTERFACE UNIT Multi-Unit Charger Interface Unit, attaches to an APX or XTS IMPRES multi-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to IMPRES Battery Fleet Management.	NNTN7677A	765	$60.00

Belt Clip(s)

Description	Nomenclature	APC	Price
BELT CLIP 2 1/4"	HLN6853	271	$11.50

Bluetooth, Mission Critical Wireless

Description	Nomenclature	APC	Price
BLUETOOTH HEADSET XTS W/ADAPTER	RLN6379A	742	$209.00
XTS BLUETOOTH ADAPTER	RMN5104A	742	$179.00

Cable(s)

Description	Nomenclature	APC	Price
CABLE- PROGRAMMING USB DOES NOT require Smart Rib. This cable MUST be ordered or the RKN4108 when you order the RVN4186 to program the Portable Radios. * PR1500 - uses RVN4161 CPS - No RIB Box required.	RKN4105	261	$237.00
CABLE- PROGRAMMING, RS232 This cable MUST be ordered or the RKN4105 when you order the RVN4186 to program the Portable Radios. * PR1500 - uses RVN4161 CPS - No RIB Box required.	RKN4108	261	$251.00

Carrying Case(s)

Description	Nomenclature	APC	Price
LEATHER CASE W/HIGH ACTIVITY 3.0" SWIVEL BELT LOOP Includes swivel belt loop and t-strap. 3.0" Snap NiCad or NiMH.	NNTN4115	271	$60.00
LEATHER CASE W/HIGH ACTIVITY 2.5" SWIVEL BELT LOOP Includes swivel belt loop and t-strap. 2.5" Snap NiCad or NiMH.	NNTN4116	271	$60.00
LEATHER CASE W/SNAP BELT LOOP & T-STRAP Includes snap belt loop and t-strap. For NiCad or NiMH.	NNTN4117	271	$60.00
LEATHER T-STRAP, PLAIN ACTION SNAP	NTN8383	476	$10.50
LEATHER T-STRAP, HARD ACTION SNAP WITH ADDITIONAL STRENGTH AT SNAP	NTN8384	476	$10.50

Charger

Description	Nomenclature	APC	Price
WALL MOUNT KIT FOR IMPRES MULTI-UNIT CHARGER	NLN7987	476	$21.00
CHARGER, 110 VOLT, US PLUG	NTN1687	476	$100.00
VEHICULAR TRAVEL CHARGER Utilizes the cigarette lighter adapter. INCLUDES: mounting bracket, custom coil cord, and charger. Travel charger is best used and compatible with 2" belt clip.	RLN4884	765	$95.00

	WPLN4108 R	785	$788.00
SINGLE BASE ONLY	WPLN4114AR	785	$180.00
MULTI-UNIT CONDITIONING CHARGER, 4-STATION BASE, 110 VOLT	WPPN4085 R	785	$399.00

INCLUDES: 4 station conditioning charger and AC power supply. Adapter plates sold separately. Motorola Conditioning Chargers are not compatible with Li-Ion batteries or RNN4006/4007 NiMH batteries *** Motorola Conditioning Chargers not compatible with NiMH batteries RNN4006B/RNN4007AR or any Li-ion batteries.

Charger Line Cords

Description	Nomenclature	APC	Price
CHARGER, 220V LINE CORD	NTN7374	476	$17.25

Can be used on any of the single or multi unit chargers, or power supplies, to provide for domestic or international operation.

Commport Integrated Microphone/Receiver

Description	Nomenclature	APC	Price
COMMPORT WITH PALM PTT	NTN1824	115	$419.00

CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.

COMMPORT WITH PTT ON RADIO ADAPTER	NTN1625	115	$419.00

CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.

COMMPORT WITH RING PTT	NTN1663	115	$429.00

CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.

COMMPORT WITH SNAP-ON SIDE PTT	NTN1736	115	$429.00

CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.

Earpieces

Description	Nomenclature	APC	Price
RECEIVE-ONLY FOAM EARBUD WITH 3.5MM PLUG - INTRINSICALLY SAFE (FM)	AARLN4885	742	$25.00

When used with MTP3000 models, to be used with remote speaker microphones PMMN4078A, PMMN4072A and PMMN4074A

EARBUD, MINI MICROPHONE AND PTT	BDN6760	742	$67.00

*MTX8000 & MTX9000 - Requires BDN6676 (3.5 mm adapter jack) that attaches to the radio. Assembled with microphone & PTT. *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM).

EARBUD, RECEIVE ONLY, BLACK (SINGLE WIRE)	BDN6761	742	$27.00

*HT1000, XTS 3000, requires BDN6676 (3.5mm adapter jack) that attaches to the radio.
*EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM)
*XTS 5000 & XTS 2500 requires BDN6676. Intrinsically Safe (FM). Assembled (receive only) with volume control & standard urethane earloop.
*PR1500 - requires BDN6676 - Intrinsically Safe (FM))

D-SHELL RX-ONLY EARPIECE(3.5MM)	PMLN4620A	742	$19.00
BONE CONDUCTION EAR MICROPHONE (XTS3000/5000/2500/1500/MT1500/PR1500)	PMLN5464	742	$395.00
EARPLUGS FOAM/ACOUSTIC TUBE BLACK	RLN6230A	742	$32.00
RUBBER EARTIP/ACOUSTIC TUBE BEIGE	RLN6241A	742	$20.00
QUICK DISCONNECT ACOUSTIC TUBE	RLN6242A	742	$7.90
EAR RCVR W/COIL CBL&3.5MM PLUG	WADN4190B	742	$43.00

Headsets

Description	Nomenclature	APC	Price
HEADSET LIGHTWEIGHT	NMN6245	785	$149.00

Single Muff Lightweight Headset with In-Line PTT Switch (requires BDN6676 audio adapter)- Intrinsically Safe (FM)
EX500, EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM)

MED WEIGHT HEADSET, OVER-THE-HEAD, W/IN-LINE PTT-NRR=24DB-INTRIN (FM)	NMN6256	742	$369.00

Medium Weight Headset, Over the Head, with In-Line PTT - Noise Reduction Rating = 24dB

MED DUTY HEADSET,BEHIND-THE-HEAD, W/IN-LINE PTT-NRR= 24DB-INTRIN (FM)	NMN8259	742	$425.00

Medium Weight Headset, Behind the Head, with In-Line PTT - Noise Reduction Rating = 24dB

TEMPLE TRANSDUCER W/BOOM MIC & PTT-RECEIVE AUDIO THROUGH THE TEMPLES	RMN4049	742	$225.00

Temple transducer-receive audio without covering the ear; behind the head style headset allows user to receive audio through the temples. Headset features a noise cancelling boom microphone and in-line PTT.

RUGGED TEMPLE TRANSDUCER HEADSET	RMN5049	742	$340.00

Features a noise cancelling boom microphone and in-Line PTT

Microphones

Description	Nomenclature	APC	Price
SPKR MIC NON-SUBMSBL,GPS RSM	HMN4084	372	$350.00

HMN4084 has the Earlock. Not compatible with Man-Down Side connector (NTN7660) or Clamshell Battery Holder (Q495, Q496, NTN8177, NTN9183).
When used with XTS 2500, requires S version board. INCLUDES GPS RSM User guide (6861098C03).

GPS R2 SMART/NON-SUBM RSM FM	HMN4112A	372	$350.00

GPS R2.0 RSM, 3.5mm audio jack
XTS2500 compatibility requires B tanapa version hardware and radio host cost R10.00.00 or later
XTS5000 compatibility requires radio host cost R08.01.00 or later.
FM compliant

GPS R2 SMART/SUBM RSM FM	HMN4113A	372	$350.00

GPS R2.0 RSM, Submersible
XTS2500 compatibility requires B tanapa version hardware and radio host cost R10.00.00 or later
XTS5000 compatibility requires radio host cost R08.01.00 or later.
FM compliant

RSM ADAPTER	NNTN4285A	205	$5.00
REMOTE SPEAKER MICROPHONE, IP57	PMMN4038A	372	$66.50
RSM W/MAN DOWN BUTTON	RMN5038	372	$120.00

Multi Unit Chargers

Description	Nomenclature	APC	Price
IMPRES MULTI CHARGER 230V UK 3 PIN PLUG NON DISPLAY	WPLN4110 R	765	$768.00

Public Safety Microphone(s)

Description

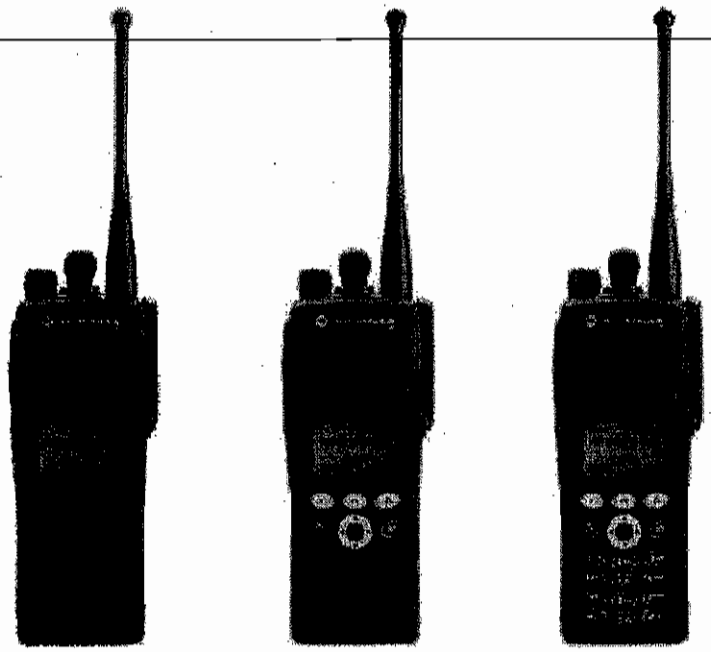
Description	Nomenclature	APC	Price
PSM STRAIGHT CABLE 30IN	RMN5072B	372	$160.00
PSM STRAIGHT CABLE 24IN	RMN5073B	372	$160.00
PSM STRAIGHT CABLE 18IN	RMN5074B	372	$160.00

Surveillance

Description	Nomenclature	APC	Price
EARPIECE RECEIVE ONLY WITH STANDARD EARPHONE - BEIGE (SINGLE WIRE) *HT1000, XTS 2500, XTS 3000, & XTS 5000: Requires BDN6676(3.5mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adapter is not required. Assembled (receive only) with standerd urethane ear loop. *EX500 & EX600 XLS - requires PMLN4455 -Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6684	742	$40.00
COMPLETELY, DISCREET EARPIECE KIT Wireless earplace-communicates to the radio through an inductive neckloop. Neckloop must be used with any standard 2 or 3 wire surveillance kit.	RLN4922	742	$340.00

Date Compiled 16-May-2013 using DUP and all prices in USD

ASTRO® Digital XTS 2500 Portable Series
700/800MHz Band
Wide Area SmartZone® "Handie-Talkie™" Radio
Trunked Radio Systems



Ship Card

Features

All ASTRO Digital XTS 2500 packaged models include the following hardware features:

- 3 Programmable Side Buttons
- Orange Emergency Button
- 16 Position Mode Rotary Select Switch
- On/Off Volume
- Low Battery Alert Tone
- Antenna (Bandsplit and Type Dependent on Band Option)
- Noise Reduction Software
- 1 Top Mounted Programmable Three Position Concentric Switch
- Weather Sealed Universal Connector
- Bi-Color LED Indicator
- IMPRES Nickel Metal Hydride Battery (NTN9858)
- Detachable Belt Clip
- ASTRO 25
- Audio Gain Control

ASTRO Digital XTS 2500 Model I.5, II and III also include:

- DTMF Telephone Interconnect Capability (Model III ONLY)
- 6 Lines Alphanumeric Display (No Model I)
- Date and Time Stamp
- Hardware Encryption (Not Available on Model 1)
- Keypad Tone Mute (Model II and III ONLY)
- Large Navigational Keypad (Model II and III ONLY)
- Real Time Clock

All ASTRO Digital XTS 2500 Portables are part of the FLASHport program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the same RF deck.)
Please note that Models 1 and 2 are not available in the Asia Pacific Region

Physiological Monitoring Solution

Physiological Monitoring is now available on the ASTRO 25 XTS5000 and XTS2500 portable radios. The Zephyr BioHarness™ BT couples the pioneering Smart Fabric sensor technology of the comfortable and unobtrusive BioHarness™ garment with the power and ubiquity of Bluetooth®. BioHarness™ BT enables the capture and transmission of comprehensive physiological data on the wearer exclusively via MOTOROLA ASTRO RADIOS – enabling genuine remote monitoring of human performance and condition in the real world.

The BioHarness™ BT can be used in a diverse range of areas including sports, defense, first responder and healthcare. Its professional-grade BioHarness™ system monitors conditions such as heat state, dehydration or injury by measuring vital signs including heart rate, breathing rate, skin temperature, posture and activity. Using the subject's voice radio, the BioHarness communicates to monitoring software designed to give real-time alerts and post-event analysis.

BioHarness™ BT can be worn in virtually any environment – from combat situations to the training field. It maintains performance under extreme activity. Offering fast, accurate collection and analysis of high-quality, in-depth data, BioHarness™ BT is the definitive product for remote physiological monitoring in all conditions.

Zephyr Physiological Monitoring Ordering Guide

General Information

The ASTRO Digital XTS 2500 Portable Line offers four different radio hardware models:

Hardware Model	Modes	Alphanumeric Display Lines/Characters per Line	Keypad	Navigation Pad
ASTRO XTS 2500 Model I	48	None	None	No
ASTRO XTS 2500 Model 1.5	256	6/12/front mount	None	No
ASTRO XTS 2500 Model II	870	6/12/front mount	3 x 2	Yes
ASTRO XTS 2500 Model III	870	6/12/front mount	3 x 6	Yes

OPERATING MODES

ASTRO Digital XTS 2500 Radio Models are capable of operating in three different voice communication modes:

• Normal Analog (clear voice) • 3.6KB ASTRO Digital (clear voice) • 9.6KB ASTRO 25 Digital (clear voice)

The ASTRO Digital XTS 2500 Portable is capable of 48 modes when the programmable Concentric Top Mounted Switch is used for Zone Operation. The mode of operation is programmed on a channel-by-channel basis.

Please note that the XTS 2500 does NOT support FRED.

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the ASTRO Digital XTS2500 Portable Radio Series. Separation of frequencies can be as wide as the allowable sub-band per radio model with no degradation of any performance specifications. If an incorrect antenna is used, degraded performance may be experienced.

FIPS 140-2 Compliance

Encryption Modules equipped with AES are FIPS 140-2 compliant. Further information regarding FIPS 140-2 certification may be found using the following links:

FIPS 140-2 Crypto Module Validation Program (CMVP)

NIST Cryptographic Module Validation Lists

FLASHport® AFTERMARKET UPGRADES

The ASTRO Digital XTS 2500 Portable Series Radios are part of the FLASHport® Program. This means that ASTRO Digital XTS 2500 hardware models can be loaded with different software packages that provide the features and functionalities that your customers require. Three different hardware models are available in each band split.

The ASTRO Digital XTS 2500 portable can be upgraded electronically (via RS232 cable or USB cable are required for all software upgrades) in the field with new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

FM INFORMATION

The XTS 2500 portable radio when properly equipped with options H223, Q393 or Q393SUBM are Factory Mutual (FM/CSA) approved as intrinsically safe for use in, Division 1, Class I, II, III, Groups C, D, E, F, G, T3 without encryption modules.

The XTS 2500 portable radio when properly equipped with options H223, Q393 or Q393SUBM are Factory Mutual (FM/CSA) approved as intrinsically safe for use in, Division 1, Class I, Class II, Class III, Groups D ,F, G, T3C with encryption modules.

ASTRO TEXT MESSAGING SERVICE

ASTRO Text Messaging Service will be available on ASTRO 25 XTS 5000, XTS 2500 Portable radios and ASTRO 25 XTL 5000, XTL 2500 Mobile radios. Text Messaging Service (TMS) allows subscriber users to send and receive text messages to other subscribers or dispatch operators. Users can select messages and addresses from a predefined list or enter freeform text messages and addresses via the keypad. Text Messaging Service is available on ASTRO Trunked IV&D Systems and Subscribers. Subscribers must have version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software.

For full Text Messaging functionality, including freeform text messaging and addressing, must order Model III XTS2500 portables. Model II versions support Limited Text Messaging functionality such as selecting predefined messages or addresses from a list programmed in the radio. Text messaging service is NOT supported on Model I Portables.
Ordering requirements for XTS 2500 Portable:

- Requires Model II or Model III XTS 2500
- Software Trunking 9600 Baud (Q574)
- Packet Data Interface (Q947)

***NOTE**: There is no specific option to order for the Text Messaging Service on the subscribers as the functionality is included in the Packet Data option.*

RELATIVE RADIATED RECEIVE SENSITIVITY

The relative radiated receive sensitivity test (formerly referred to as self-quieters) measure the sensitivity from 764MHz to 870Mhz in 12.5kHz steps. The radio is set to 25kHz channel mode. These measurements were taken in a shielded environment so that degraded sensitivity at discrete frequencies is known to be due to the radio's self-interference (as opposed to external interference.) The following list contains frequencies which were consistently found to have severely degraded performance on all measured radios: 856.3375, 857.7000, 860.7000, 862.2000, 863.7000, 867.3000, 864.0000.

UPDATED LIST OF FREQUENCIES NOT ALLOWED

When a Platform A radio is repaired with a Platform B RF board there will be additional frequencies that are not recommended to be used. The following list contains frequencies which were consistently found to have severely degraded performance on all measured radios (secure and non-secure):

VHF (136 to 174 MHz) 140.5, 144, 147.4475, 147.4575, 151.2*, 151.735*, 153.6*, 159.745, 162, 162.295, 165.9, 168*, 170.3975, 172.02

UHF Range 1 (380 to 470 MHz) 381.535, 384, 389.49, 393.195, 396*, 397.4375, 405.38, 413.33, 414*, 415.5, 417.77, 420*, 421.28, 429.23, 429.544, 431.1, 432*, 432.613, 437.18125, 442.344, 445.13125, 450*, 460.8, 466.92, 468*

UHF Range 2 (450 to 520 MHz) 450, 453.6*, 456*, 460.8*, 462, 466.91875, 468*, 469.425, 470.4*, 474, 475.5*, 480, 486*, 487.2*, 491.49375, 492, 497.705, 498, 502.2, 504, 510, 516, 516.065

700/800 MHz (764 – 776 MHz, 851 MHz – 870 MHz) 856.3375, 857.7000, 860.7000, 862.2000, 863.7000, 864.0000, 867.3000

Ordering Requirements

Ordering procedure is as follows:

1	**H46UCH9PW7BN**	**ASTRO XTS 2500 Portable**
1A	**Q574**	**9600 Trunking Digital**

Operation

1B etc

1. Order the ASTRO Digital XTS 2500 Portable Series as the main line item (H46UCH9PW7_N).
2. Each hardware model MUST be ordered with one Operating Mode. One Operating Mode Package MUST be ordered for each radio unit ordered. Choose between 9600 Trunking, 3600 Analog/ Digital Trunking, 3600 Analog or P25 Conventional Operation.

SOFTWARE FEATURES SUPPORTED BY Q574 Wide Area SmartZone / Q575 Wide Area SmartZone / Q443 Wide Area Analog SmartZone/ Q811 P25 Digital Conventional				
	"ASTRO Digital"(Q575)	"ASTRO Digital"(Q574)	3600 Analog (Q443)	P25 Conventional (Q811)
	Non-Project 25	Project 25	Type II	Project 25
	(3600 Baud)	(9600 Baud)	(3600 Baud)	Conventional
RADIO WIDE FEATURES				
Maximum Modes				
ASTRO Digital XTS 2500 Model 1	16/48	16/48	16/48	16/48
ASTRO Digital XTS 2500 Model 1.5	256	256	256	256
ASTRO Digital XTS 2500 Model II & III	870	870	870	870
Analog and Digital Operation	Yes	Yes	Analog Only	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes	Yes
Secure Capable (Hardware Encryption Not Available on Model 1 Radios)	Yes	Yes	All but ADP	Yes
One Touch Operation	Yes	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes	Yes
Surveillance Mode	Yes	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes	Yes
Radio Lock	Yes	Yes	Yes	Yes
Smart (IMPRES) Battery	Yes	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES				
Conventional Features are additional radio wide features beyond those specified above.				
CSQ/PL/DPL	Yes	Yes	Yes	Yes
Dual Priority Channel Scan	No	No	No	No
Repeater/Talkaround Operation	Yes	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes	Yes
Monitor	Yes	Yes	Yes	Yes

DTMF Tone Generation	Yes	Yes	Yes	Yes
MDC-1200 Call Lists (Call Alert/Select Call)	Yes	Yes	Yes	Yes
MDC-1200 Call Alert Encode/Decode	Yes	Yes	Yes	Yes
MDC-1200 Emergency Call	Yes	Yes	Yes	Yes
MDC-1200 Voice Selective Call Encode/Decode	Yes	Yes	Yes	Yes
MDC-1200 Remote Monitor Decode	Decode Only	Decode Only	Decode Only	Decode Only
MDC-1200 Silent Emergency Alarm	Yes	Yes	Yes	Yes
MDC-1200 Selective Radio Inhibit Decode	Decode Only	Decode Only	Decode Only	Decode Only
MDC-1200 Radio Check Decode	Decode Only	Decode Only	Decode Only	Decode Only
MDC-1200 PTT-ID Decode/Encode	Yes	Yes	Yes	Yes
MDC Repeater Access	Yes	Yes	Yes	Yes
MDC Request to Talk (RTT)	Yes	Yes	Yes	Yes
MDC Status, Status Request, Message	Yes	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES				
These features are APCO Project 25 Conventional Interoperable Features when used in the ASTRO Digital CAI Mode (Q806).				
Unaddressed Voice Call	Yes	Yes	No	Yes
Talk Group Call	Yes	Yes	No	Yes
Group Call Alert™	Yes	Yes	No	Yes
Talk Group Identification (TGID)	Yes	Yes	No	Yes
Selective Call (Individual Voice Call)	Yes	Yes	No	Yes
PTT ID (Individual Identification)	Yes	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	No	Yes
Emergency Alarm w/Channel Revert & Ack.	Yes	Yes	No	Yes
Telephone Interconnect	Yes	Yes	No	Yes
Selective Radio Inhibit	Yes	Yes	No	Yes
Radio Check	-	-	No	-
Status/Message	Yes	Yes	No	Yes
Trunking Type II Only Features				
Maximum Number of Trunked Systems-20	Yes	Yes	Yes	No
Talkgroup Calls	Yes	Yes	Yes	No
PTT ID (Digital Only)	Yes	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes	No
Dual Mode Scan	Yes	No	Yes	No
Failsoft by Talkgroup	Yes	Yes	Yes	No
Telephone Interconnect Encode/Decode	Yes	Yes	Yes	No

System Wide Call (Receive Only)	Yes	No	Yes	No
Selective Radio Inhibit	Yes	Yes	Yes	No
Priority Monitor Scan	Yes	Yes	Yes	No
Multi System Scan	Yes	Yes	Yes	N/A
Dynamic Regrouping	Yes	Yes	Yes	No
Status/Message	No	No	No	No
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes	No
Radio Check	No	No	No	No
Remote Monitor/Radio Trace	Yes	No	Yes	Yes
Reprogram Request	No	No	No	No
SmartZone Trunking Type II Only Features				
Adaptive Power Control	Yes	Yes	Yes	No
Voice on Control	Future	Future	Future	No
SmartZone Automatic Site Registration	Yes	Yes	Yes	No
SmartZone RSSI Operation	Yes	Yes	Yes	No
SmartZone Preferred Site	Yes	Yes	Yes	No
SmartZone Forced Site Search	Yes	Yes	Yes	No
SmartZone Site Lock/Unlock	Yes	Yes	Yes	No
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes	No
Emergency Alarm Call Receive Indication	Yes	Yes	Yes	No

Legend:
Blue=Feature to be added in a Future Release

FCC Information

FCC IDENTIFIER: AZ489FT5804

Name of Grantee: Motorola Solutions, Inc.

Equipment Class: **Licensed Non-Broadcast Transmitter Held to Face**

Notes: **ASTRO DIGITAL XTS2500 PORTABLE**

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance	Emission Designator
BH	**80, 90, 90.210**	**764.0 - 870.0**	**3.0**	**1.5 PM**	**16K0F3E**
BH	**80, 90, 90.210**	**764.0 - 870.0**	**3.0**	**1.5 PM**	**11K0F3E**
BH	**80, 90, 90.210**	**764.0 - 870.0**	**3.0**	**1.5 PM**	**8K10F1E**
BH	**80, 90, 90.210**	**764.0 - 870.0**	**3.0**	**1.5 PM**	**8K10F1D**

BH	**80, 90, 90.210**	**764.0 - 870.0**	**3.0**	**1.5 PM**	**20K0F1E**

XTS 2500 PORTABLE RADIO SPEC SHEET

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on XTS 2500 Dual Display Portable radios. Advanced Messaging is NOT supported on XTS 2500 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for XTS 2500 Portable Requires:

· XTS 2500 Dual Display

· P25 Conventional (Q811)

· Packet Data Interface (Q947)

OR

· XTS 2500 Dual Display

· ASTRO Project 25 Trunking Software (Q574/Q575)

· Packet Data Interface (Q947)

NOTE: There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server

and radio license fees, please visit -

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

Models

Description	Nomenclature	APC	Price
XTS 2500 762-870MHZ /1-3W/48 CHANNELS/ NO KEYPAD MODEL 1	H46UCC9PW5BN	205	$850.00
XTS2500 762-870MHZ/ 1-3W/ 96 CHANNELS/ NO KEY PAD / MODEL 1.5	H46UCD9PW5BN	205	$950.00
XTS2500 762-870MHZ/ 1-3W/ 870 CHANNELS/ 3X2 KEYPAD/ MODEL 2	H46UCF9PW6BN	205	$1,550.00
XTS2500 762-870MHZ/ 1-3W/ 870 CHANNELS/ 3X6 KEYPAD/ MODEL 3	H46UCH9PW7BN	205	$1,950.00

Options

Operation Mode

Description	Nomenclature	APC	Price
ENH: SOFTWARE ANALOG 3600 BAUD Software Package INCLUDES: 3600 Buad, SmartZone, and OmniLink; PTT-ID Display	Q443	205	$1,260.00
ENH: SOFTWARE TRUNKING 9600 BAUD Software Package Includes: 9600 Baud, Wide Area SmartZone, OmniLink, ASTRO Digital CAI, & PTT-ID Display	Q574	205	$1,675.00
ENH: TRUNKING 3600 BAUD SOFTWARE Software Package Includes: 3600 Baud, SmartZone, OmniLink, ASTRO Digital CAI, & PTT-ID Display	Q575	205	$1,675.00
ENH: SOFTWARE P25 CONVENTIONAL (Also includes ASTRO Digital CAI; PTT-ID Display	Q811	205	$660.00
ENH: 3600/9600 INTEROPERABILITY COMPATIBLE with Q574 9600 trunking only.	Q883	205	$500.00

System Enhancement Software

Description	Nomenclature	APC	Price
ADD: LINK LAYER RADIO AUTHENTICATION	H345	205	$100.00
ENH: CONVENTIONAL VOTE SCAN	Q387	205	$200.00

Systems Enhancement Options

Description	Nomenclature	APC	Price
ENH: OVER THE AIR PROVISIONING POP25 requires UCM & AES encryption for ASTRO Conventional operation. Must have IV&D (Q947) enabled. To do in field POP25 programming must use Advanced System Key (DVN4046A)	G996	205	$100.00
ENH: REMOTE MONITOR	H43	205	$100.00

ENH:TRUNKED 1 BTN STAT/MSG XTS2500	H46	407	$150.00
ENH: RADIO PACKET DATA This option is only capable of being used on P25 Digital Conventional and 9600 Trunking Systems. This option is required for IV & D operetion. SHOULD order a cable for data connectivity	Q947	205	$200.00
ADD: AUTO ROAMING CAPABILITY FOR X-SERIES SUBSCRIBERS	QA04444	655	$100.00

Algorithm Options

Description	Nomenclature	APC	Price
ENH: CONVENTIONAL TACTICAL REKEY WITH MULTIKEY Must order IV&D (Q947)	H04	407	$500.00
ADD: DVI-XL ENCRYPTION Requires Q159. (Analog 25 khz Only)	H793	205	$520.00
ADD: DVP-XL ENCRYPTION Q159 MUST BE ORDERED. (Analog 25 khz Only)	H797	407	$487.00
ADD: MULTI KEY	H869	407	$330.00
ADD: XTS2500 UCM HARDWARE ENCRYPTION REQUIRED for ALL Encryption Algorithms listed on page. Not availeble on Model 1 radios.	Q159	407	$150.00
ADD: ADP PRIVACY NOT AVAILABLE with Q443 software package. INCLUDES Multikey. REQUIRES Q159. ADP Privacy is not FIPS compliant - ADP Privacy not supported by OTAR - ADP is digital P25 conventional / P25 trunking only	Q406	407	$349.00
ADD: DES, DES-XL, DES-OFB ENCRYPTION Q159 MUST BE ORDERED(Analog 25 khz) / DES-OFB (Digital 12.5 khz Only)	Q625	407	$599.00
ADD: AES ENCRYPTION Q159 REQUIRED.	Q629	407	$475.00
ADD: ADP WITH DES, DES-XL, DES-OFB Q159 REQUIRED. NOT AVAILABLE with Q443. Includes MultiKey.	Q668	407	$799.00

Antenna

Description	Nomenclature	APC	Price
DEL: ANTENNA, 800MHZ (NAF5037) Deletes Standard Antenna. The standard antenna is 800MHz only, for 700 and 800 MHz operation please order the H123 or Q698 options.	H112	205	($10.00)
ADD: 806-870 MHZ DIPOLE (NAF5039A) The standard antenna is 800MHz only, for 700 and 800 MHz operation please order the H123 or Q898 options	H121	205	$0.00
ALT: ANTENNA QUARTER-WAVE 800MHZ (NAF5042) Deletes the standard 806-870 MHz 1/2 wavelength whip antenna and adds this antenna. Length: 3.93". The standard antenna is 800MHz only, for 700 and 800 MHz operation please order the H123 or Q898 options	H122	205	($5.00)
ALT: ANTENNA 1/4 WAVE 700/800MH The standard antenna is 800MHz only, for 700 and 800 MHz operation please order the H123 or Q898 options	H123	205	($5.00)
ALT: ANTENNA 1/2 WAVE 7" WHIP 700/800 MHZ (NAF5080) Deletes the standard 806-870 MHz 1/2 wavelength whip antenna and adds this antenna. The standard antenna is 800MHz only, for 700 and 800 MHz oparation please order the H123 or Q696 options	Q696	205	$5.00

Battery

Description	Nomenclature	APC	Price
DEL: BATTERY ALL TOGETHER The option will delete the XTS2500 Standerd battery NIMH (NTN9858)	H207	205	($57.00)
ALT: BATTERY IMPRES NIMH FM 2000MAH (NTN9857) Deletes the Standard Nickel Cadmium Battery that ships with this radio. Please Referance General Information for ordering instruction end Factory Mutual Information.	Q393	205	$47.00
ALT: IMPRES BATTERY FM NIMH IMMERSIBLE 2000 MAH (NNTN6263) Provides the Immersible radio with FM Certification. Please reference genaral ordering instruction for additional Factory Mutual Information. Requires QA00211AA	Q393SUBM	205	$47.00

ALT:BATTERY HOLDER CLAMSHELL BLACK Clamshells do not ship with a clip, clip must be ordered separate. The NTN8266B belt clip will work with the clam shell battery.	Q495	407	$0.00
ALT: IMPRES BATTERY, LITH, 2700 MAH, IP67, IMMERSION (NNTN7335A) Immersibility on this battery is only available on XTS2500. If the customer requires immersion, this battery must be ordered in conjunction with the immersible housing option (QA00211AA).	QA00774	205	$93.00
ALT: XTS2500 IP67 SLIM LIION 2100 (NNTN7554)	QA01428	205	$93.00

Belt Clip(s)

Description	Nomenclature	APC	Price
DEL: BELT CLIP (HLN6853)	H301	205	($10.00)
ALT: BELT CLIP 2 INCHES (HLN9844)	H315	407	$10.75

Conventional Factory Programming

Description	Nomenclature	APC	Price
ADD:CONVENTIONAL FACTORY PROGRAMMING 160 CHANNELS	H477	205	$0.00

Data Cable (s)

Description	Nomenclature	APC	Price
ADD: DATA CABLE This option gives you the RS232 programming cable (RKN4106) and requires Q947 Option.	Q157	205	$150.00

Housing

Description	Nomenclature	APC	Price
ALT: IP67 IMMERSIBLE OPTION If you also need the Intrinsically Safe Certification you must order the Q393SUBM for XTS2500. If FM is NOT required a NON FM immersible battery will be autometically generated.	QA00211AA	407	$150.00

Programming

Description	Nomenclature	APC	Price
ENH: FCC CONV FPP AND CLONE Compatible with Digital Conventional Operation only - raquires Q811. Only compatible with Model 3 radios. The connector accessory key (PMTN4113) is required for utilizing FPP. *When ordering the FPP option you only get 240 channels.	Q53AE	407	$150.00

Service Options

Description	Nomenclature	APC	Price
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE Provides 2 years of extended hardware repair coverage beginning after the standard warranty period expiree. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	H885BK	185	$84.00
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE Provides 3 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	H886AQ	185	$125.00
ADD: 1 YR RSA COMPREHENSIVE	HA00020AA	185	$86.00
		Intent to Cancel Date:	**15-Jan-2013**
ADD: 2 YR RSA COMPREHENSIVE	HA00021AA	185	$163.00
		Intent to Cancel Date:	**15-Jan-2013**
ADD: 3 YR RSA COMPREHENSIVE	HA00022AB	185	$228.00

Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage

starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ADD: 1 YR ENCRYPT RSA COMPREHENSIVE	HA00023AA	185	$90.00
		Intent to Cancel Date:	**15-Jan-2013**
ADD: 2 YR ENCRYPT RSA COMPREHENSIVE	HA00024AA	185	$171.00
		Intent to Cancel Date:	**15-Jan-2013**
ADD: 3YR REPAIR SERVICE ADVANTAGE COMPREHENSIVE (INCLUDING ENCRYPTION)	HA00025AA	185	$262.00

Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ENH: XTS2500 CANADA 5 YR EXT WARR	HA00044	386	$144.00

Upgrades the standard warranty period to a full five (5) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.

ENH: XTS2500 CANADA 3 YR EXT WARR	HA00045	386	$118.00

Upgrades the standard warranty period to a full three (3) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.

ENH: XTS2500 CAN 5 YR ENCR EXT WARR	HA00046	386	$143.00

Upgrades the standard warranty period to a full five (5) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.

ENH: XTS2500 CAN 3 YR ENCR EXT WARR	HA00047	386	$181.00

Upgrades the standard warranty period to a full three (3) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.

ENH: 1 YR ENCRYPTED REPAIR SERVICE ADVANTAGE	Q57	185	$51.00

Provides for extended hardware repair coverage, including encryption, beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ENH: 2 YEAR ENCRYPTED REPAIR SERVICE ADVANTAGE	Q58	185	$97.00

Provides 2 years of extended hardware repair coverage, including encryption, beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	Q884	185	$44.00

Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ENH:4 YEAR REPAIR SERVICE ADVANTAGE	Q887	185	$162.00

Provides 4 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ENH: 3 YR ENCRY REPAIR SERVICE	QA01540	185	$145.00

Provides 3 years of extended hardware repair coverage, including encryption, beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Software Encryption

Description	Nomenclature	APC	Price
ENH: ADP PRIVACY	Q667	205	$10.00

NOT AVAILABLE with 3600 Trunking and Analog Conventional Software Packages.

COMPATIBLE with the Q574 (P25 Trunking), Q811 (Digital Conventional), and Q575 (in the Digital Conventional Mode ONLY). ADP Privacy is not FIPS compliant - ADP Privacy not supported by OTAR - ADP is digital P25 conventional / P25 trunking only.

Spare Parts

Description	Nomenclature	APC	Price
ADD: SPARE KNOB KIT	QA00542	407	$0.00

UNDEFINED

Description	Nomenclature	APC	Price
ENH: ENCRYPTED TACTICAL INHIBIT	H02	407	$75.00
ENH: 4 YR ENCRYPTED REPAIR SERVICE	QA02191	185	$195.00

Zone Operation

Description	Nomenclature	APC	Price
ADD: ZONE OPERATION	H371	205	$0.00

Packaging

Description	Nomenclature	APC	Price
INT: SINGLE PACKAGING Ships orders in single unit boxes.	H842	205	$0.00

Test Results

Description	Nomenclature	APC	Price
ADD: TEST RESULT PRINT OUT	H799	205	$0.00

Accessories

Enhancements

Description	Nomenclature	APC	Price
ZEPHYR PSM SYSTEM BUNDLE Motorola System bundle includes Software CD, gateway programming cable, configuration block, documentation. 1 Required per laptop	DDN1131	407	$1,920.00
ZEPHYR CARRYING CASE	DDN1132	407	$750.00
ZEPHYR PSM RSM BUNDLE XS-MED Motorola PSM bundle includes 1 BT BioHarness, 1 side strap (XS - Med), 1 remote speaker microphone	DDN1133	407	$883.00
ZEPHYR PSM RSM BUNDLE MED-XL Motorola PSM bundle includes 1 BT BioHarness, 1 side strap (med ? XL), 1 remote speaker microphone	DDN1134	407	$883.00
ZEPHYR BT REMOTE SPEAKER MIC (RSM)	DDN1135	407	$405.00
NONIN BT FINGER BLOOD OXIMITRY SPO2 Contains CNet Bluetooth V2.0 USB Adaptor containing drivers for wireless Bluetooth BP & SPO2 devices.	DDN1136	407	$650.00
ZEPHYR BIOSHIRT RESPONDER - XXL	DDN1137	407	$186.00
ZEPHYR BIOSHIRT RESPONDER - XL	DDN1138	407	$186.00
ZEPHYR BIOSHIRT RESPONDER - LARGE	DDN1139	407	$186.00
ZEPHYR BIOSHIRT RESPONDER - MED	DDN1140	407	$186.00
ZEPHYR RSM CONFIGURATION BLOCK	DDN1141	407	$200.00
ZEPHYR GATEWAY RADIO CABLE	DDN1142	407	$470.00
ZEPHYR 4 BAY CHARGER	DDN1143	407	$220.00
ZEPHYR BLOOD PRESSURE WRIST DEVICE Contains CNet Bluetooth V2.0 USB Adaptor containing drivers for wireless Bluetooth BP & SPO2 devices	DDN1144	407	$248.00

	DDN1146	407	$186.00
ZEPHYR BIOHARNESS SIDE STRAP M-XL	DDN1147	407	$69.00
ZEPHYR BIOHARNESS SIDE STRAP XS-M	DDN1148	407	$69.00
ZEPHYR OMNISENSE SW CD & DOCUMENTS	DDN1149	407	$1,250.00
ZEPHYR BLUETOOTH BIOMODULE	DDN1150	407	$815.00
ZEPHYR 4 BAY CHARGER W USA PLUGPACK	DDN1151	407	$220.00
ZEPHYR XTS RID	DDN1159	407	$375.00
ZEPHYR PSM RID BUNDLE XS-MED Motorola PSM bundle includes 1 BT BioHarness, 1 side strap (XS - Med), 1 RID	DDN1160	407	$908.00
ZEPHYR PSM RID BUNDLE MED-XL Motorola PSM bundle includes 1 BT BioHarness, 1 side strap (med ? XL), 1 RID	DDN1161	407	$908.00

Adapter

Description	Nomenclature	APC	Price
3.5 MM JACK ADAPTER WITH QUICK DISCONNECT LATCH For use with 1, 2 & 3 wire earpiece.	BDN6676	742	$52.50
PSM RF ADPT	RLN5918	372	$36.00

Algorithm Kits

Description	Nomenclature	APC	Price
SECURE BOARD M1.5 AES Includes both UCM Hardware Module & Software Encryption Algorithm. Requires Host/DSP, R07.00.00, version or later.	PMLN4924A	205	$749.00
SECURE BRD M1.5 DES,DES-XL,DES-OFB Includes both UCM Hardware Module & Software Encryption Algorithm. Requires Host/DSP, R07.00.00, version or later.	PMLN4925A	205	$811.00
SECURE BOARD M1.5 ADP Includes both UCM Hardware Module & Software Encryption Algorithm. Requires Host/DSP, R07.00.00, version or later.	PMLN4926A	205	$637.00
SECURE BOARD M2 AES Includes both UCM Hardware Module & Software Encryption Algorithm. Requires Host/DSP, R07.00.00, version or later.	PMLN4927A	205	$811.00
SECURE BRD M2 DES,DES-XL,DES-OFB Includes both UCM Hardware Module & Software Encryption Algorithm. Requires Host/DSP, R07.00.00, version or later.	PMLN4928A	205	$749.00
SECURE BOARD M2 ADP Includes both UCM Hardware Module & Software Encryption Algorithm. Requires Host/DSP, R07.00.00, version or later.	PMLN4929A	205	$637.00
SECURE BOARD M3 AES Includes both UCM Hardware Module & Software Encryption Algorithm. Requires Host/DSP, R07.00.00, version or later.	PMLN4930A	205	$749.00
SECURE BRD M3 DES,DES-XL,DES-OFB Includes both UCM Hardware Module & Software Encryption Algorithm. Requires Host/DSP, R07.00.00, version or later.	PMLN4931A	205	$749.00
SECURE BOARD M3 ADP Includes both UCM Hardware Module & Software Encryption Algorithm. Requires Host/DSP, R07.00.00, version or later.	PMLN4932A	205	$637.00
SECURE BOARD M1.5 DVP-XL	PMLN5062A	456	$637.00
SECURE BRD M2 DVP-XL	PMLN5063A	456	$637.00
SECURE BRD M3 DVP-XL	PMLN5064A	456	$637.00

Antenna

Description	Nomenclature	APC	Price
ANTENNA, 806-870 MHZ 1/2 WAVELENGTH WHIP	NAF5037	476	$35.75
ANTENNA, DIPOLE 806-870MHZ	NAF5039	476	$35.75
ANTENNA 1/2 WAVE 7" WHIP 700/800 MHZ	NAF5080	555	$35.00

Battery

	Nomenclature	APC	Price
BATTERY IMPRES NIMH, 1700 MAH. INTRINSICALLY SAFE, RUGGEDIZED IMPRES batteries provide for automatic and adaptive reconditioning in IMPRES chargers, provide end of service life display, and real-time battery information when used with the IMPRES MUC with display.	NNTN4437B	453	$145.00
IMPRES NIMH, 2000 MAH, 7.5V BATTERY-INTRINS SAFE (FM) - RUGGEDIZED	NNTN6263	453	$135.00
JEDRAY LI ION BAT 2500MAH	NNTN7032A	453	$150.00
FINAL ASSEMBLY, BATTERY, JEDRAY LIION IMPRES BATT	NNTN7335A	453	$135.00
PREM BATT NICD 1525 MAH	NTN9815B	453	$100.00
IMPRES NIMH, 2000 MAH, 7.5V BATTERY - INTRINS SAFE (FM)	NTN9857C	453	$130.00
IMPRESS NIMH, 2100 MAH, 7.5V BATTERY	NTN9858C	453	$110.00

Battery Maintenance Systems

Description	Nomenclature	APC	Price
NA FLEET MANAGEMENT LICENSE KEY	HKVN4036A	785	$489.00
IMPRES BATTERY DATA READER Provides IMPRES battery users ability to access key usage data via PC. Compatible w/all IMPRES batteries (HT/PRO,TRBO & APX adapter included)	NNTN7392	785	$250.00
FLEET MANAGEMENT CHRGR INTERFACE UNIT Multi-Unit Charger Interface Unit, attaches to an APX or XTS IMPRES multi-unit charger to enable the data transfer to IMPRES Battery Fleet Management. A CIU is required for IMPRES chargers that report data to IMPRES Battery Fleet Management.	NNTN7677A	785	$80.00

Belt Clip(s)

Description	Nomenclature	APC	Price
BELT CLIP 2 1/4"	HLN6853	271	$11.50

Bluetooth, Mission Critical Wireless

Description	Nomenclature	APC	Price
BLUETOOTH HEADSET XTS W/ADAPTER	RLN6379A	742	$209.00
XTS BLUETOOTH ADAPTER	RMN5104A	742	$179.00

Cable(s)

Description	Nomenclature	APC	Price
CABLE- PROGRAMMING USB DOES NOT require Smart Rib. This cable MUST be ordered or the RKN4106 when you order the RVN4186 to program the Portable Radios. * PR1500 - uses RVN4181 CPS - No RIB Box required.	RKN4105	261	$237.00
CABLE- PROGRAMMING, RS232 This cable MUST be ordered or the RKN4105 when you order the RVN4186 to program the Portable Radios. * PR1500 - uses RVN4181 CPS - No RIB Box required.	RKN4106	261	$251.00

Carrying Case(s)

Description	Nomenclature	APC	Price
LEATHER CASE W/HIGH ACTIVITY 3.0" SWIVEL BELT LOOP Includes swivel belt loop and t-strap. 3.0" Snap NiCad or NiMH.	NNTN4115	271	$60.00
LEATHER CASE W/HIGH ACTIVITY 2.5" SWIVEL BELT LOOP Includes swivel belt loop and t-strap. 2.5" Snap NiCad or NiMH.	NNTN4116	271	$60.00
LEATHER CASE W/SNAP BELT LOOP & T-STRAP Includes snap belt loop and t-strap. For NiCad or NiMH.	NNTN4117	271	$60.00
LEATHER T-STRAP, PLAIN ACTION SNAP	NTN8383	476	$10.50
LEATHER T-STRAP, HARD ACTION SNAP WITH ADDITIONAL STRENGTH AT SNAP	NTN8384	476	$10.50

Charger

Description	Nomenclature	APC	Price
WALL MOUNT KIT FOR IMPRES MULTI-UNIT CHARGER	NLN7967	476	$21.00
CHARGER, 110 VOLT, US PLUG	NTN1667	476	$100.00
VEHICULAR TRAVEL CHARGER Utilizes tha cigarette lighter adapter. INCLUDES: mounting bracket, custom coil cord, and charger. Travel charger is best used and compatible with 2" belt clip.	RLN4884	785	$95.00
IMPRES MULTI UNIT CHARGER - 110V US PLUG NON-DISPLAY	WPLN4108 R	785	$788.00
IMPRES CHARGER	WPLN4111AR	785	$165.00
IMPRES MULTI UNIT CHARGER - 110V US PLUG WITH DISPLAY	WPLN4130A	785	$1,350.00
MULTI-UNIT CONDITIONING CHARGER, 4-STATION BASE, 110 VOLT INCLUDES: 4 station conditioning charger and AC power supply. Adapter plates sold separately. Motorola Conditioning Chargers ere not compatible with Li-Ion batteries or RNN4006/4007 NiMH batteries *** Motorola Conditioning Chargers not compatible with NiMH batteries.RNN4006B/RNN4007AR or any Li-ion batteries.	WPPN4065 R	785	$399.00

Charger Line Cords

Description	Nomenclature	APC	Price
CHARGER, 220V LINE CORD Can be used on any of the single or multi unit chergers, or power supplies, to provide for domestic or international operation.	NTN7374	476	$17.25

Commport Integrated Microphone/Receiver

Description	Nomenclature	APC	Price
COMMPORT WITH PALM PTT CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.	NTN1624	115	$419.00
COMMPORT WITH PTT ON RADIO ADAPTER CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.	NTN1625	115	$419.00
COMMPORT WITH RING PTT CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.	NTN1663	115	$429.00
COMMPORT WITH SNAP-ON SIDE PTT CommPort Integrated Receiver Ear Microphone is intelligible in high noise levels up to 100dB.	NTN1736	115	$429.00

Earpieces

Description	Nomenclature	APC	Price
RECEIVE-ONLY FOAM EARBUD WITH 3.5MM PLUG - INTRINSICALLY SAFE (FM) When used with MTP3000 models, to be used with remote speaker microphones PMMN4076A, PMMN4072A and PMMN4074A	AARLN4885	742	$25.00
EAR MICROPHONE FOR STANDARD NOISE LEVELS, BLACK Designed to pick up the voice through bone vibrations directly in the ear canal. Complete system consists of an Ear microphone and the corresponding Radio Interface Module (PTT or VOX). For noise levels up to 95 db. Requires Interface Module. *HT750, HT1250 & PR1500 - Intrinsically Safe (FM) Note: VOX is not recommended for trunking operation.	BDN6677	742	$198.00
EARBUD, MINI MICROPHONE AND PTT *MTX8000 & MTX9000 - Requires BDN6676 (3.5 mm adapter jack) that attaches to the radio. Assembled with microphone & PTT. *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM).	BDN6780	742	$67.00
EARBUD, RECEIVE ONLY, BLACK (SINGLE WIRE) *HT1000, XTS 3000, requires BDN6676 (3.5mm adapter jack) that attaches to the radio. *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *XTS 5000 & XTS 2500 requires BDN6676. Intrinsically Safe (FM). Assembled (receive only) with volume control & standerd urethane earloop. *PR1500 - requires BDN6676 - Intrinsically Safe (FM))	BDN6781	742	$27.00

D-SHELL RX-ONLY EARPIECE(3.5MM)	PMLN4620A	742	$19.00
BONE CONDUCTION EAR MICROPHONE (XTS3000/5000/2500/1500/MT1500/PR1500)	PMLN5464	742	$395.00
RECEIVE ONLY EARPIECE W/TRANSLUCENT TUBE When used with MTP3000 models, to be used with remote speaker microphones PMMN4078A, PMMN4072A and PMMN4074A	RLN4941A	742	$58.00
EARPLUGS FOAM/ACOUSTIC TUBE BLACK	RLN6230A	742	$32.00
RUBBER EARTIP/ACOUSTIC TUBE BEIGE	RLN6241A	742	$20.00
QUICK DISCONNECT ACOUSTIC TUBE	RLN6242A	742	$7.90
EAR RCVR W/COIL CBL&3.5MM PLUG	WADN4190B	742	$43.00

Headsets

Description	Nomenclature	APC	Price
~~HEADSET LIGHTWEIGHT~~ Single Muff Lightweight Headset with In-Line PTT Switch (requires BDN6676 audio adapter)-Intrinsically Safe (FM) EX500, EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM)	~~NMN6245~~	~~785~~	~~$149.00~~
MED WEIGHT HEADSET, OVER-THE-HEAD, W/IN-LINE PTT-NRR=24DB-INTRIN (FM) Medium Weight Headset, Over the Head, with In-Line PTT - Noise Reduction Rating = 24dB	NMN6258	742	$389.00
MED DUTY HEADSET,BEHIND-THE-HEAD, W/IN-LINE PTT-NRR= 24DB-INTRIN (FM) Medium Weight Headset, Behind the Head, with In-Line PTT - Noise Reduction Rating = 24dB	NMN6259	742	$425.00
HEAVY DUTY HEADSET PMLN5278B	PMLN5278B	742	$439.00
TEMPLE TRANSDUCER W/BOOM MIC & PTT-RECEIVE AUDIO THROUGH THE TEMPLES Temple transducer-receive audio without covering the ear; behind the head style headset allows user to receive audio through the temples. Headset features a noise cancelling boom microphone and in-line PTT.	RMN4049	742	$225.00
RUGGED TEMPLE TRANSDUCER HEADSET Features a noise cancelling boom microphone and In-Line PTT	RMN5049	742	$340.00

Microphones

Description	Nomenclature	APC	Price
SPKR MIC NON-SUBMSBL,GPS RSM HMN4084 has the Earjack. Not compatible with Man-Down Side connector (NTN7660) or Clamshell Battery Holder (Q495, Q496, NTN9177, NTN9183). When used with XTS 2500, requires B version board. INCLUDES GPS RSM User guide (6881098C03).	HMN4084	372	$350.00
REMOTE SPEAKER MICROPHONE, IP57	PMMN4038A	372	$88.50
REMOTE SPEAKER MIC, NC	PMMN4045B	372	$97.00
REMOTE SPEAKER MIC, RX-JACK	PMMN4051B	372	$89.00
RSM W/MAN DOWN BUTTON	RMN5038	372	$120.00

Multi Unit Chargers

Description	Nomenclature	APC	Price
IMPRES MULTI CHARGER 230V UK 3 PIN PLUG NON DISPLAY	WPLN4110 R	785	$788.00

Public Safety Microphone(s)

Description	Nomenclature	APC	Price
PSM STRAIGHT CABLE 30IN	RMN5072B	372	$160.00
PSM STRAIGHT CABLE 24IN	RMN5073B	372	$160.00
PSM STRAIGHT CABLE 18IN	RMN5074B	372	$160.00

Surveillance

Description	Nomenclature	APC	Price
EARPIECE RECEIVE ONLY WITH STANDARD EARPHONE - BEIGE	BDN6664	742	$40.00

(SINGLE WIRE) *HT1000, XTS 2500, XTS 3000, & XTS 5000: Requires BDN6676(3.5mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adaptar is not required. Assembled (receive only) with standard urethene ear loop. *EX500 & EX600 XLS - requires PMLN4455 -Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)			
EARPIECE RECEIVE ONLY WITH EXTRA LOUD EARPHONE - BEIGE (SINGLE WIRE) *HT1000, XTS 2500, XTS 3000, & XTS 5000 -requires BDN6676(3.5mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adapter is not required. Assembled (receive only) with standard urethane ear loop. *EX500 & EX600 XLS - requires PMLN4455 -Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6665	742	$42.00
EARPIECE RECEIVE ONLY WITH VOLUME CONTROL - BEIGE (SINGLE WIRE) *HT1000, XTS 2500, XTS 3000, and XTS 5000: Requires BDN6676 (3.5mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adapter is not required. Intrinsically Safe (FM). Assembled (receive only) with standard urethane ear loop. *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6666	742	$53.00
EARPIECE WITH MICROPHONE & PTT COMBINED - BEIGE (2 WIRE) *XTS 2500, XTS 3000, and XTS 5000: Requires BDN6676(3.5mm adapter jack) thet attachas to the radio. If being used with Remote Speeker Microphone with 3.5mm audio jack, audio adapter is not required Intrinsically Safe (FM). Assembled (receive only) with standard urethane ear loop. *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6667	742	$114.00
EARPIECE WITH MICROPHONE & PTT SEPARATE - BEIGE (3 WIRE) *HT1000, XTS 2500, XTS 3000, and XTS 5000: Requires BDN6676(3.5mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adapter is not required. Intrinsically Safe (FM). Assembled (receive only) with standard urethane ear loop. * EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6668	742	$135.00
EARPIECE, MIC & PTT COMBINED W/EXTRA LOUD EARPIECE - BEIGE (2 WIRE) *HT1000, XTS 2500, XTS 3000, and XTS 5000: Requires BDN6676(3.5mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adapter is not required. Intrinsically Safe (FM). Assembled (receive only) with standard urethane ear loop. *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6669	742	$118.00
EARPIECE W/MIC & PTT SEPARATE W/XTRA LOUD EARPIECE - BEIGE (3 WIRE) *HT1000, XTS 2500, XTS 3000, and XTS 5000: requires BDN6676(3.5mm adapter jack) thet attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adapter is not required. Intrinsically Safe (FM). Assembled (receive only) with standard urethane ear loop. *EX500 & EX600 XLS REQUIRES PMLN4455. *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6670	742	$150.00
EARPIECE RECEIVE ONLY WITH STANDARD EARPHONE - BLACK (SINGLE WIRE) *HT1000, XTS 3000 require BDN6676 (3.5 mm adapter jack) that attaches to the radio. If being used with Remote Speaker Microphone with 3.5mm audio jack, audio adapter is not required. *XTS 2500 and XTS 5000 requires new adaptor -Intrinsically Safe (FM) *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6726	742	$40.00
EARPIECE RECEIVE ONLY WITH VOLUME CONTROL - BLACK (SINGLE WIRE) *XTS 3000 require BDN6676 (3.5 mm adapter jack) that attaches to the redio. If being used with Remote Speaker Microphone with 3.5mm eudio jack, audio adepter is not required. *XTS 2500 and XTS 5000 requires new adaptor - Intrinsically Safe (FM). *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Sefe (FM)	BDN6728	742	$53.00
EARPIECE WITH MICROPHONE & PTT COMBINED - BLACK (2 WIRE) *XTS 2500, XTS 3000 end XTS 5000 require BDN6676 (3.5 mm adapter jack) that attaches to	BDN6729	742	$114.00

the radio. *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)			
EARPIECE WITH MICROPHONE & PTT SEPARATE - BLACK (3 WIRE) *HT1000, XTS 3000 require BDN6676 (3.5mm adapter jack) that attaches to the radio. *XTS 2500 & XTS 5000 requires new adaptor - Intrinsically Safe (FM). *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6730	742	$135.00
EARPIECE, MIC & PTT COMBINED W/EXTRA LOUD EARPIECE - BLACK (2 WIRE) *HT1000, XTS 3000, require BDN6676 (3.5mm Adapter Jack)that attaches to the radio. *XTS 2500 & XTS 5000 requires new adaptor - Intrinsically Safe (FM). *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM) *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6731	742	$118.00
EARPIECE W/MIC & PTT SEPARATE W/XTRA LOUD EARPIECE - BLACK (3 WIRE) *HT1000, XTS 3000 require BDN6676 (3.5mm adapter jack) that attaches to the radio. *EX500 & EX600 XLS - requires PMLN4455 - Intrinsically Safe (FM). *PR1500 - requires BDN6676 - Intrinsically Safe (FM)	BDN6732	742	$150.00

UNDEFINED

Description	Nomenclature	APC	Price
ASSY,ENT/CONCTIV,HSET,98682H,BT HS 300	98682H	742	$40.00
BATT CLAMSHELL, XTS2500	NNTN6686B	453	$90.00

Data Compiled 16-May-2013 using DUP and all prices in USD

ASTRO® Digital XTS 4000 Portable Series
UHF Range 1
Wide Area SmartZone® "Handle-Talkie™" Radio
Trunked Radio Systems

Special Note for United States - State & Local Markets only:

In accordance with FCC mandate, the XTS 2500 UHF R1 & UHF R2 products operating on Part 90 frequencies will be restricted to 12.5kHz or narrower operations on Jan. 1, 2013

Ship Card

The XTS 4000 is the ideal solution in surveillance covert type operations where reliable secure communications is a must. Designed to resemble the appearance of today's consumer cellular communication devices, the XTS 4000 allows agents to blend right into the crowd. Our digital ASTRO 25 portable radio delivers high quality communication in a light and discrete package for those critical undercover situations.

The following limitation must be considered before ordering:

- **Significant Coverage Reduction:** The radio has a maximum power output of 2W and utilizes a small covert antenna. These design elements result in limited coverage as compared to XTS 2500 or XTS 5000.
- **Range:** The best case condition is with antenna up and the radio been used in front of the face. In this mode the range is approximately 2 miles range depending on the surrounding environment. With the antenna down and the radio on the belt, the range will be reduced.
- **Battery Capacity:** Standard Battery capacity is 630 mAh (LiIon only) and offers about 4 hours at 5/5/90 duty cycle.
- **XTS 4000 has all unique Accessories and Cables:** XTS 4000 is NOT compatible with XTS 5000/2500/1500 accessories. Customers will need to purchase new programming cables, chargers, and keyloading cables for use with XTS 4000.
- **Band Availability:** Only offered in VHF (3 antenna splits) and UHF R1 380- 470 MHz.

Hydra Coverage Simulation:

It is highly recommended that customers interested in the XTS 4000 also engage the System Deployment team who can utilize tools to simulate the coverage offered by the XTS 4000 radio. Hydra, an engineering application used to model performance of wireless communications systems, can assist the customer in understanding the impact of the reduced footprint of the XTS 4000 on a customer system. This information could be instrumental in helping the customer identify if the XTS 4000 is the right product for them and whether a PDR3500 or DVRS solution would make sense. (Link to be added)

E3 Hold Notice:

Customer or sales must acknowledge that they are aware the transmit power is 2 watt max output, and the standard shipping Li-ion battery capacitance is 630 mAh which computes to 4 hrs of operating using a 5-5-90 duty cycle.

You may complete this acknowledgement form and submit to the product planner upon ordering to avoid delays. To view this document click here

Portable Repeater (optional)

The PDR 3500 is a single channel portable conventional repeater unit in a suitcase that allows range extension for conventional units. This solution can help with extending the conventional range of the XTS 4000 in low RF signal areas. For additional information, please refer to the PDR 3500 price pages located here.

DVRS (optional)

The Digital Vehicular Repeater System (DVRS) is a single channel vehicle based on-scene repeater with system pass-though capabilities that allow system range extension for specially configured local radio units. This solution can help with extending the system or conventional range of the XTS 4000 in low RF signal areas. For additional information, please refer to the DVRS price pages located here.

The links below go to the specific ECAT price pages for the different DVRS models. From those price pages information on specific model pricing and orderable options can be seen as well as ordering guide information.

- Digital Vehicular Repeater VHF
- Digital Vehicular Repeater UHF
- Digital Vehicular Repeater 700 MHz
- Digital Vehicular Repeater 800 MHz

Features

General Ordering Requirement and Information when ordering XTS 4000 Radio

All ASTRO Digital XTS4000 packaged models include the following hardware features:

- 2 Li Ion Batteries (NNTN6944)
- Plastic Holster
- Encryption Module equipped with DES-XL/DES-OFB/AES/DVP-XL and OTAR
- 1 Antenna 380-470 MHz
- User Guide/CD Manual
- Quick Starter Guide

Ordering Instruction

NOTE: XTS 4000 is offered in two different Digital packages (Conventional or Conventional & Trunking). Additional options are available, but not required.

Conventional Package (H44) includes the following:

- Digital ASTRO Conventional, PTT- ID, Remote Monitor One Touch, Repeater Access, Conventional Vote Scan, and Conventional Radio Cloning

Conventional & Trunking Package (H45) includes the following:

- 3600 Digital SmartZone, ASTRO 25 Trunking, PTT-ID, Remote Monitor, One Touch, Repeater Access, Omnilink
- All of the features included in the Conventional Package (H44)

NOTE: Please be advised of the Relative Radiated Received Sensitivity:

Self-Quieting Frequency List (within +/-12.5kHz)

~ 381.5400	~ 413.3350	~ 437.1800	~ 453.0800	~486.9750
~ 369.4900	~ 417.7650	~ 437.2900	~ 457.4875	
~ 393.1900	~ 421.2850	~ 442.3400	~ 461.0250	
~ 397.4400	~ 429.2100	~ 445.1300	~ 466.2400	
~ 405.3650	~ 429.2300	~ 446.7188	~ 466.9150	

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on XTS 4000 Portable radios. Advanced Messaging is NOT supported on XTS 4000 Top Display

Portable radios.

Ordering ASTRO Advanced Messaging Solution for XTS 4000 Portable Requires:

- XTS 4000 Dual Display
- ASTRO Digital CAI Operation (Q806)
- P25 Conventional (H44)
- Packet Data Interface (Q947)

OR

- XTS 4000 Dual Display
- ASTRO Digital CAI Operation (Q806)
- ASTRO Project 25 Trunking Software (H45)
- Packet Data Interface (Q947)

***NOTE:** There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query tha fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MSGP.htm

Models

Description	Nomenclature	APC	Price
XTS4000 PORTABLE ASTRO DIGITAL 380-470MHZ 0.25 - 2 W	H18QCN9PW9 N	854	$1,800.00

Options

Systems Enhancement Options

Description	Nomenclature	APC	Price
P25 CONVENTIONAL OPERATION SW	H44	854	$1,523.00
ENH: 9600,3600 ASTRO TRUNKING SW	H45	854	$2,400.00
ENH: RADIO PACKET DATA *This option is only for SMS and Tactical OTAR NO full data capability*	Q947	654	$200.00
ADD: AUTO ROAMING CAPABILITY FOR X-SERIES SUBSCRIBERS	QA04444	655	$100.00

Battery

Description	Nomenclature	APC	Price
ADD: XTS 4000 HICAP LI-ION BATTERY 1260 MAH This option will delete the two standard battery that ships with the radio and replace it with two HiCap battery	QA00897	854	$125.00

Belt Clip(s)

Description	Nomenclature	APC	Price
DEL: STANDARD PLASTIC HOLSTER	H301	654	($10.00)

Carrying Case(s)

Description	Nomenclature	APC	Price
ADD: LEATHER CARRY CASE FOR SLIM BATTERY Leather Carry Case for Slim Battery.	Q191	854	$30.00

Charger

Description	Nomenclature	APC	Price
ADD: XTS4000 CHARGING ADAPTOR AND AC CHARGER	Q464	654	$147.00

Labels

Description	Nomenclature	APC	Price
ADD: FEDERAL UID TRACKING LABEL	QA00466	654	$10.00

Service Options

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	Q884	185	$44.00

Packaging

Description	Nomenclature	APC	Price
ADD: SINGLE PACKING	H842	654	$0.00

Accessories

Antenna

Description	Nomenclature	APC	Price
ANTENNA 380-470MHZ	NAE6552	654	$25.00
ANTENNA 380 - 470 MHZ	NAE6553A	654	$20.00

Battery

Description	Nomenclature	APC	Price
XTS4000 BATT LI_ION 830MAH EACH (NNTN8944)	NNTN6944AR	453	$90.00

Charger

Description	Nomenclature	APC	Price
XTS4000 CHARGING CRADLE ADAPTER	NNTN6937A	785	$42.00
XTS4000 AC CHARGER	NNTN8938A	785	$105.00
XTS4000 DC VEHICULAR CHARGER	NNTN8939A	785	$105.00
~~XTS4000 INSERT FOR PHOENIX MUC~~	NNTN7836A	785	$16.00

Power Supply

Description	Nomenclature	APC	Price
XTS4000 INSERT FOR IMPRES, 5000 SINGLE UNIT CHARGER	PMLN5429A	785	$25.00

UNDEFINED

Description	Nomenclature	APC	Price
XTS4000 - 3 WIRE SURV. KIT W/ QUICK DISCONNECT	RLN6478A	742	$150.00

Miscellaneous

Description	Nomenclature	APC	Price
CABLE ASSY, XTS4000 KEYLOAD	0182297T15	201	$119.00
RS232 XTS4000 PROGRAMMING CABLE	NKN1027A	654	$251.00

Data Compiled 16-May-2013 using DUP and all prices in USD

ASTRO® Digital XTS 4000 Portable Series
VHF
Wide Area SmartZone® "Handle-Talkie™" Radio
Trunked Radio Systems.

Special Note for United States - State & Local Markets only:

In accordance with FCC mandate, the XTS 2500 VHF products operating on Part 90 frequencies will be restricted to 12.5kHz or narrower operations on Jan. 1, 2013

Ship Card

The XTS 4000 is the ideal solution in surveillance covert type operations where reliable secure communications is a must. Designed to resemble the appearance of today's consumer cellular communication devices, the XTS 4000 allows agents to blend right into the crowd. Our digital ASTRO 25 portable radio delivers high quality communication in a light and discrete package for those critical undercover situations.

The following limitation must be considered before ordering:

- **Significant Coverage Reduction:** The radio has a maximum power output of 2W and utilizes a small covert antenna. These design elements result in limited coverage as compared to XTS 2500 or XTS 5000.
- **Range:** The best case condition is with antenna up and the radio been used in front of the face. In this mode the range is approximately 1 miles range depending on the surrounding environment. With the antenna down and the radio on the belt, the range will be reduced.
- **Battery Capacity:** Standard Battery capacity is 630 mAh (LiIon only) and offers about 4 hours at 5/5/90 duty cycle.
- **XTS 4000 has all unique Accessories and Cables:** XTS 4000 is NOT compatible with XTS 5000/2500/1500 accessories. Customers will need to purchase new programming cables, chargers, and keyloading cables for use with XTS 4000.
- **Band Availability:** Only offered in VHF (3 antenna splits) and UHF R1 380- 470 MHz.

Hydra Coverage Simulation:

It is highly recommended that customers interested in the XTS 4000 also engage the System Deployment team who can utilize tools to simulate the coverage offered by the XTS 4000 radio. Hydra, an engineering application used to model performance of wireless communications systems, can assist the customer in understanding the impact of the reduced footprint of the XTS 4000 on a customer system. This information could be instrumental in helping the customer identify if the XTS 4000 is the right product for them and whether a PDR3500 or DVRS solution would make sense. (Link to be added)

E3 Hold Notice:

Customer or sales must acknowledge that they are aware the transmit power is 2 watt max output, and the standard shipping Li-ion battery capacitance is 630 mAh which computes to 4 hrs of operating using a 5-5-90 duty cycle.

You may complete this acknowledgement form and submit to the product planner upon ordering to avoid delays. To view this document click here

Portable Repeater (optional)

The PDR 3500 is a single channel portable conventional repeater unit in a suitcase that allows range extension for conventional units. This solution can help with extending the conventional range of the XTS 4000 in low RF signal areas. For additional information, please refer to the PDR 3500 price pages located here.

DVRS (optional)

The Digital Vehicular Repeater System (DVRS) is a single channel vehicle based on-scene repeater with system pass-though capabilities that allow system range extension for specially configured local radio units. This solution can help with extending the system or conventional range of the

XTS 4000 in low RF signal areas. For additional information, please refer to the DVRS price pages located here.

The links below go to the specific ECAT price pages for the different DVRS models. From those price pages information on specific model pricing and orderable options can be seen as well as ordering guide information.

- Digital Vehicular Repeater VHF
- Digital Vehicular Repeater UHF
- Digital Vehicular Repeater 700 MHz
- Digital Vehicular Repeater 800 MHz
-

Features

General Ordering Requirement and Information when ordering XTS 4000

All ASTRO Digital XTS4000 packaged models include the following hardware features:

- 2 Li Ion Batteries (NNTN6944)
- 1 Antenna 164-174MHz. If this antenna is not desired you may choose one from the antenna section below.
- Plastic Holster
- Encryption Module equipped with DES-XL/DES-OFB/AES/DVP-XL and OTAR
- User Guide/CD Manual
- Quick Starter Guide

Ordering Instruction

NOTE: XTS 4000 is offered in two different Digital packages (Conventional or Conventional & Trunking). Additional options are available, but not required.

Conventional Package (H44) includes the following:

- Digital ASTRO Conventional, PTT-ID, Remote Monitor One Touch, Repeater Access, Conventional Vote Scan, and Conventional Radio Cloning

Conventional & Trunking Package (H45) includes the following:

- 3600 Digital SmartZone, ASTRO 25 Trunking, PTT-ID, Remote Monitor, One Touch, Repeater Access, Omnilink
- All of the features included in the Conventional Package (H44)

NOTE: Please be advised of the Relative Radiated Received Sensitivity:

Self-Quieting Frequency List (within +/-12.5kHz)

~ 136.6730	~ 165.9000
~ 143.0680	~ 167.6450
~ 147.4470	~ 170.4000
~ 153.6000	~ 172.0230
~ 158.2230	~ 172.6950
~ 161.2475	

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on XTS 4000 Portable radios. Advanced Messaging is NOT supported on XTS 4000 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for XTS 4000 Portable Requires:

- XTS 4000 Dual Display
- ASTRO Digital CAI Operation (Q806)
- P25 Conventional (H44)
- Packet Data Interface (Q947)

OR

- XTS 4000 Dual Display
- ASTRO Digital CAI Operation (Q806)
- ASTRO Project 25 Trunking Software (H45)
- Packet Data Interface (Q947)

***NOTE:** There is no specific option to order for the Advanced Messeging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

Models

Description	Nomenclature	APC	Price
XTS4000 PORTABLE ASTRO DIGITAL 136-174 MHZ 1-2 W	H16KCN9PW9 N	654	$1,600.00

Options

Systems Enhancement Options

Description	Nomenclature	APC	Price
P25 CONVENTIONAL OPERATION SW	H44	654	$1,523.00
ENH: 9600,3600 ASTRO TRUNKING SW	H45	654	$2,400.00
ENH: RADIO PACKET DATA This option is only for SMS and Tactical OTAR NO full data capability	Q947	654	$200.00
ADD: AUTO ROAMING CAPABILITY FOR X-SERIES SUBSCRIBERS	QA04444	655	$100.00

Antenna

Description	Nomenclature	APC	Price
ADD: ANTENNA 136.0 - 151. MHZ	QA00301	654	$0.00
ADD: ANTENNA 145.0 - 166.0 MHZ	QA00303	654	$0.00

Battery

Description	Nomenclature	APC	Price
ADD: XTS 4000 HICAP LI-ION BATTERY 1260 MAH This option will delete the two standard battery that ships with the radio and replace it with two HICap battery	QA00697	654	$125.00

Belt Clip(s)

Description	Nomenclature	APC	Price
DEL: STANDARD PLASTIC HOLSTER	H301	654	($10.00)

Carrying Case(s)

Description	Nomenclature	APC	Price
ADD: LEATHER CARRY CASE FOR SLIM BATTERY Leather Carry Case for Slim Battery.	Q191	654	$30.00

Charger

Description	Nomenclature	APC	Price
ADD: XTS4000 CHARGING ADAPTOR AND AC CHARGER	Q454	654	$147.00

Labels

Description	Nomenclature	APC	Price
ADD: FEDERAL UID TRACKING LABEL	QA00486	654	$10.00

Service Options

Description	Nomenclature	APC	Price
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service.	Q664	165	$44.00

Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Packaging

Description	Nomenclature	APC	Price
ADD: SINGLE PACKING	H642	654	$0.00

Accessories

Antenna

Description	Nomenclature	APC	Price
ANTENNA 145 - 166 MHZ	NAD6561A	654	$27.50
ANTENNA 136 - 151 MHZ	NAD6562A	654	$27.50
ANTENNA 162.0 - 174.0 MHZ	NAD6563A	654	$27.50

Battery

Description	Nomenclature	APC	Price
XTS4000 BATT LI_ION 630MAH EACH (NNTN6944)	NNTN6944AR	453	$90.00
XTS 4000 HICAP LI_ION BATT AFTER MKT 1260 MAH	PMNN4063AR	453	$120.00

Charger

Description	Nomenclature	APC	Price
XTS4000 CHARGING CRADLE ADAPTER	NNTN6937A	785	$42.00
XTS4000 AC CHARGER	NNTN6938A	765	$105.00
XTS4000 DC VEHICULAR CHARGER	NNTN6939A	765	$105.00
XTS4000 INSERT FOR PHOENIX MUC	NNTN7636A	765	$16.00

Power Supply

Description	Nomenclature	APC	Price
XTS4000 INSERT FOR IMPRES, 5000 SINGLE UNIT CHARGER	PMLN5429A	765	$25.00

UNDEFINED

Description	Nomenclature	APC	Price
XTS4000 - 3 WIRE SURV. KIT W/ QUICK DISCONNECT	RLN6476A	742	$150.00

Miscellaneous

Description	Nomenclature	APC	Price
CABLE ASSY, XTS4000 KEYLOAD	0182297T15	201	$119.00
RS232 XTS4000 PROGRAMMING CABLE	NKN1027A	654	$251.00
USB PROGRAMMING CABLE	NKN1029A	654	$237.00

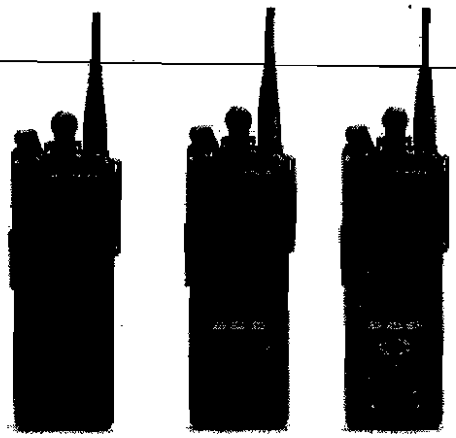
Data Compiled 16-May-2013 using DUP and all prices in USD

XTS 5000 Last Order Entry Date : October 31, 2013

XTS 5000 Last Scheduled Ship Date: November 30, 2013

XTS 5000 Notification of Intent to Cancel Memo

ASTRO® Digital XTS 5000™ Portable Series
UHF RANGE 1 / TYPE 1 Encryption
SMARTNET® "Handie-Talkie™" Radio
Conventional/ Secure/ Trunked Radio Systems



Special Note for United States - State & Local Markets only:

In accordance with FCC mandate, the XTS 5000 UHF R1 & UHF R2 products operating on Part 90 frequencies will be restricted to 12.5kHz or narrower operations on Jan. 1, 2013

Ship Card

Features

All ASTRO Digital XTS 5000 packaged models include the following hardware features:

- 3 Programmable Side Buttons
- Orange Emergency Button
- Illuminated 16 Position Mode Rotary Select Switch
- Angled On/Off Volume
- Low Battery Alert Tone
- Antenna (Band split and Type Dependent on Band Option)
- Smart Battery Technology
- Noise Reduction Software
- 1 Top Mounted Programmable Two Position Concentric Switch
- 1 Top Mounted Programmable Three Position Toggle Switch
- Weather Sealed Universal Connector
- Bi-Color LED Indicator
- Nickel Metal Hydride Battery
- Detachable Belt Clip
- ASTRO 25
- Audio Gain Control

ASTRO Digital XTS 5000 Model III also include:

- Full Keypad for Private Call
- 6 Linee Alphanumeric Display
- Data and Time Stamp
- Keypad Tone Mute
- Large Nevigational Keypad
- Real Time Clock

All ASTRO Digital XTS 5000 Portables are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the same RF deck.)

Physiological Monitoring Solution

Physiological Monitoring is now available on the ASTRO 25 XTS5000 and XTS2500 portable radios. The Zephyr BioHarness™ BT couples the pioneering Smart Fabric sensor technology of the comfortable and unobtrusive BioHarness™ garment with the power and ubiquity of Bluetooth®. BioHarness™ BT enables the capture and transmission of comprehensive physiological data on the wearer exclusively via MOTOROLA ASTRO RADIOS – enabling genuine remote monitoring of human performance and condition in the real world.

The BioHarness™ BT can be used in a diverse range of areas including sports, defense, first responder and healthcare. Its professional-grade BioHarness™ system monitors conditions such as heat state, dehydration or injury by measuring vital signs including heart rate, breathing rate, skin temperature, posture and activity. Using the subject's voice radio, the BioHarness communicates to monitoring software designed to give real-time alerts and post-event analysis.

BioHarness™ BT can be worn in virtually any environment – from combat situations to the training field. It maintains performance under extreme activity. Offering fast, accurate collection and analysis of high-quality, in-depth data, BioHarness™ BT is the definitive product for remote physiological monitoring in all conditions.

Zephyr Physiological Monitoring Ordering Guide

General Information

The ASTRO Digital XTS 5000 Portable Line offers three different radio hardware models:

Hardware Model	Modes	Alphanumeric Display Lines/Characters Per Line	Keypad	Navigation Pad
ASTRO XTS 5000 Model I	48	None	None	No
ASTRO XTS 5000 Model II	1000	6/12/front mount	3 x 2	Yes
ASTRO XTS 5000 Model III	1000	6/12/front mount	3 x 8	Yes

Operating Modes

ASTRO Digital XTS 5000 Radio Models are capable of operating in three different voice communication modes:

- Normal Analog (clear voice)
- 3.6KB ASTRO Digital (both clear and coded voice)
- 9.6KB ASTRO 25 Digital (both clear and coded voice)

The mode of operation is programmed on a channel-by-channel basis. With the coded/clear switch set to the clear mode, the ASTRO Digital XTS 5000 radio is capable of transmitting clear analog voice or clear (unencrypted) ASTRO digital voice, depending on the channel programming. With the coded/clear switch set to the coded mode, the ASTRO Digital XTS 5000 radio will transmit ASTRO Digital Encryption depending on the channel programming. ASTRO digital encryption provides communications security. ASTRO Digital Encryption (operating in encrypted mode while also operating in the 3.6KB or 9.6 KB ASTRO mode) is capable of XL type encryptions; ASTRO Digital Encryption Does not operate with non-XL encryptions.

An Encryption Option is not required for either clear analog operation or clear ASTRO digital operation. Encryption can be ordered with the ASTRO Digital XTS 5000 radio either as a factory installed option or separate from the radio for later field installation. ASTRO Digital XTS 5000 radio functions include selected ASTRO digital signaling and digital speech coding.

Please note that the XTS5000 does NOT support FRED.

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the ASTRO Digital XTS 5000 Portable Radio Series. Seperation of frequencies can be as wide as the allowable sub-band per radio model with no degradation of any performance specifications. If an incorrect antenna is used, degreded performance may be experienced.

FLASHport AFTERMARKET UPGRADES

The ASTRO Digital XTS 5000 Portable Series Radios are part of the FLASHport Program. This means that ASTRO Digital XTS 5000 hardware models can be loaded with different software packages that provide the features and functionalities that your customers require. Three different hardware models are available in each band split.

System Enhancement Options can be loaded at the time of radio purchase or at a later date through the use of software field upgrades (a RS232 cable or USB cable are required for all software upgrades.) The ASTRO Digital XTS 5000 portable can be upgraded electronically in the field with new features in the current system or to new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

Ordering Requirements

Ordering procedure is as follows...

1	**H18UCH9PW N**	**ASTRO XTS 5000 Portable**
1A	**Q806**	**Digital Operation**
1B	**H38**	**SmartZone® Operation**
1C	**ETC.**	

1. Order the ASTRO Digital XTS 5000 Portable Series as the main line item (H18UCH9PW7_N).
2. Each hardware model MUST be ordered with one Operating Mode. One Operating Mode for each radio unit ordered. Choose between Analog or Digital Operation.
3. Each Hardware model MUST be ordered with one System Software Package. One System Software Package for each radio unit ordered.
   - The matrix below list available radio wide, conventional features, and standard trunking features for SMARTNET (H37) and SmartZone (H38) System Packages.
   - The SmartZone features listed in the second matrix are available in the SmartZone (H38) package ONLY.
4. Select ANY desired System Enhancement Options
   - System Enhancement Options can be loaded at the time of radio purchase or at a later date through the use of software field upgrades (a RS232 cable or USB cable are required for all software upgrades.)

COMMON SOFTWARE FEATURES SUPPORTED BY H37 "SMARTNET"/H38 "SmartZone"	"Analog Operation"(Q241) Non-Project 25 (3600 Baud)	"ASTRO Digital"(Q806) Non-Project 25 (3600 Baud)	"ASTRO Digital"(H38/Q806/Q361) Project 25 (9600 Baud)
RADIO WIDE FEATURES			
Maximum Modes			
ASTRO Digital XTS 5000 Model I	16/48	16/48	16/48
ASTRO Digital XTS 5000 Model II & III	1000	1000	1000
Analog and Digital Operation	-	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes
Secure Capable	No	Yes	Yes
One Touch Operation	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes
Surveillance Mode	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes
Radio Lock	Yes	Yes	Yes
Smart Battery	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES			
Conventional Features are additional radio wide features beyond those specified above.			
CSQ/PL/DPL	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes
Adaptive Power Control	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes
Monitor	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES			
These features are APCO Project 25 Conventional Interoperable Features when used in the ASTRO Digital CAI Mode (Q806).			
Unaddressed Voice Call	-	Yes	Yes
Talk Group Call	-	Yes	Yes
Group Call Alert™	-	Yes	Yes
Talk Group Identification (TGID)	-	Yes	Yes
Selective Call (Individual Voice Call)	-	Yes	Yes
Selective Call Decode (Individual Voice Call)	-	Yes	Yes

PTT ID (Individual Identification)	-	Yes	Yes
Call Alert Encode/Decode	-	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	-	Yes	Yes
Telephone Interconnect	-	Yes	Yes
Unlimited (Model III Only)	-	Future	Future
Selective Radio Inhibit	-	Yes	Yes
Radio Check	-	Yes	Yes
Status/Message	-	Yes	Yes
Trunking Type II Only Features			
Maximum Number of Trunked Systems-20	Yes	Yes	Yes
Talkgroup Calls	No	Yes	Yes
PTT ID (H14 option required)	Yes	Yes	Yes
Call Alert Encode/Decode			Yes
Dual Mode Scan	Yes	Yes	Yes
~~Failsoft by Talkgroup~~	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes
Remote Monitor/Radio Trace	Yes	Yes	No
Reprogram Request	Future	Future	Future

SOFTWARE FEATURES SUPPORTED BY H38 "SmartZone"			
	"Analog Operation" (Q241)	"ASTRO Digital" (Q806) Non-Project 25 (3600 Baud)	"ASTRO Digital" (H37/Q806/Q361) Project 25 (9600 Baud)
Trunking Type II Only Features			
Voice on Control	Future	Future	Future
SmartZone Automatic Site Registration	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes
SmartZone Preferred Site	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes

LIMITED MDC FEATURES Offered In 6.3	
MDC PTT ID ENCODE/DECODE	YES
MDC Selective Radio Inhibit	Decode ONLY
MDC Call Alert	Yes
MDC Radio Check	Decode ONLY
MDC Voice Selective Call	Yes
MDC Remote Monitor	Decode ONLY
MDC Call Lists (Call Alert / Select Call)	Yes
MDC Emergency	Yes

CONVENTIONAL FACTORY PROGRAMMING

ASTRO Digital XTS 5000 portables ship without customer specific factory programming unlese a programming options is specified.

FREQUENCY AND SQUELCH CODES

Although some models of the ASTRO Digital XTS 5000 are capable of 512 channels, the factory can accommodate the programming of

only 128 continuous channels in any one radio. If the programming of more than 128 continuous channels is desired, field programming software must be used. **Programming of the following frequencies is not allowed: 366.4000, 396.0000, 403.2000, 414.0000, 420.0000, 432.0000, 436.8000, 450.0000, 453.6000 and 468.0000.**

H477 ADD: Frequency & Squelch Data No Charge

ZONED OPERATION

This option converts MODE-ONLY ASTRO Digital XTS 5000 portables to Zone Operation radios. A maximum of 16 RX and TX pairs can be placed into a zone. There is a maximum of three zones (48 modes) on the "I" Model, with zone operation programmed to the programmable top mounted two-position concentric switch. There is a maximum of 16 zones (512 modes) on the "II" and "III" models, and the zones will be programmed to be selected from the keypad. The factory can only accommodate the programming of only 128 continuous channels consisting of any combination of zones and channels and minimum of 32 channels with two zones on the "II" models. **When you ordering H477, H371 must be ordered.**

PROJECT 25 ENCRYPTION

When ordering any of the Encryption Algorithm:

- Must order the Encryption UCM Hardware (Q159)
  - The DES-OFB and AES encryptions offered are compliant with digital Project 25 standards and does not support analog encryption operation.
  - **Requiree** the ASTRO Digital CAI (Q806) to operate the DES-OFB and AES encryption.
- If ordering a Dual Encryption:
  - The non-OFB encryption (XL versions) can be operated in either analog , or CAI digital mode, but will not be Project 25 compliant.
  - **Requiree** the Multikey (H869).
- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.
  - Encryption UCM Hardware (Q159) module may be ordered without an Encryption Algorithm for later upgrade in the field.

FIELD INSTALLED PROJECT 25 ENCRYPTION

The DES-OFB and AES encryptions offered are compliant with Project 25 standards. Operation of DES-OFB and/or AES encryption requires the ASTRO Digital CAI (Q806) option. Radios can be upgraded via FLASHport to CAI operation.

- If ordering a Dual Encryption:
  - The non-OFB encryption can be operated in analog or CAI mode (only XL versions operate in either digital mode).
  - **Requirea** the Multikey (H869).
- When used in the CAI mode, the non-OFB encryption will not be Project 25 compliant.

FIPS 140-2 Compliance

Encryption Modules equipped with AES are FIPS 140-2 compliant. Further information regarding FIPS 140-2 certification may be found using the following links:

FIPS 140-2 Crypto Module Validation Program (CMVP)

NIST Cryptographic Module Validation Lists

FM INFORMATION

The XTS 5000 portable radio when properly equipped with options Q393AN and Q393RUGDAR are Factory Mutual (FM/CSA) Approved as intrinsically safe for use in Class I, II, III, Division 1, Group C, D, E, F, and G and Nonicendive Class I, Division 2, Group A, B, C and D, when ordered without encryption modules.

The XTS 5000 portables equipped with UCM encryption modules and options Q393AP and Q393RUGDAQ are FM/CSA Approved as Intrinsically Safe for use in Class I, II, III, Division 1, Group D, F, G and Nonicendive for use in Class I, Div 2, Group A, B, C, D only.

XTS 5000 FM/CSA approved portable radio models installed with Type 1 encryption module (Q374 or Q400), are intrinsically safe for use in the Nonicendive, Class I, Division 2, Groups A, B, C, D, when used with Motorola FM/CSA approved battery options Q393AV and Q393RUGDAW or H223CP and H223RUGDCW. Type 1 is not offered on either the 700/800 or UHF R2 bands.

ASTRO Text Messaging Service

ASTRO Text Messaging Service will be available on ASTRO 25 XTS 5000, XTS 2500 Portable radios and ASTRO 25 XTL 5000, XTL 2500 Mobile radios. Text Messaging Service (TMS) allows subscriber users to send and receive text messages to other subscribers or dispatch operators. Users can select messages and addresses from a predefined list or enter freeform text messages and addresses via the keyped. Text Messaging Service is available on ASTRO Trunked IV&D Systems and Subscribers. Subscribers must heve version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software .

For full Text Messaging functionality, including freeform text massaging and addressing, must order Model III XTS5000 portables. Model II versions support Limited Text Messaging functionality such as selecting predefined messages or addresses from a list programmed in the radio. Text messaging service is NOT supported on Model I Portables.

Ordering requirements for XTS 5000 Portable:

- Requires Model II or Model III XTS 5000
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (H38)
- ASTRO Project 25 Trunking Software (Q361)
- Packet Data Interface (Q947)

NOTE: There is no specific option to order for the Text Messaging Service on the subscribers as the functionality is included in the Packet Data option.

Outdoor Personnel Location Global Positioning Satellite (GPS) Feature

The personnel outdoor location tracking GPS feature enables a dispatcher the ability to locate on-foot patrols and out of the vehicle officers who are involved in life threatening situations. The radio user's GPS position information is sent over the ASTRO 25 Integrated Voice & Data (IV&D) network and is delivered to the dispatch operator using a third party mapping display application at the dispatch center *(Mapping Application is not yet available through Motorola at this time, however an Application Developers Tool Kit is available for 3rd party vendors to use to modify existing applications. See link below for more details.)*

This capability is now available on ASTRO 25 Conventional IV&D Systems and ASTRO 25 Trunking IV&D Systems on XTS 5000 Models I, II, III and Ruggedized with appropriate radio software (see below).

Required equipment for operating in ASTRO 25 Conventional IV&D and ASTRO 25 Trunking IV&D Systems is as follows:

	ASTRO 25 Conventional IV&D	ASTRO 25 Trunking
Radio Software	Version R09.00.00 or later	Version R09.00.(
Customer Programming Software (CPS)	Version R09.00.00 or later (RVN4161)	Version R09.00.00 or later
ASTRO CAI operation	Q806	Q806
System Enhancement Software	H35 (or H37, H38 in Conventional Mode)	H38
ASTRO Project 25 Trunking Software		Q361
GPS Remote Speaker Microphone/GPS Remote Speaker Microphone with Earjack	HMN4080 or HMN4084	HMN4080 or HMN4

For fielded XTS 5000 Portables that are already Conventional IMBE Digital Enabled or Trunking IMBE Digital Enabled, see FLASHport upgrade Price Pages to order a software refresh to get the GPS enabled software.

During normal operation the radio's battery capacity will be reduced by 10% to 18% based on 1 location update per minute.

NOT COMPATIBLE with Man -Down Side Connector (NTN7680), Clamshell Battery Holder (Q495, Q496, NTN9177, NTN9183).

For further information refer regarding System Requirements, go to the Location Solutions Price Page at: http://ecat.comm.mot.com/ecat/pricebooks/dup/ALOCATION.htm

NOTE:
The GPS technology uses radio signals from earth orbiting satellites, to establish the location co-ordinates, maximizing your view of clear, unobstructed sky is essential for optimum performance. Where adequate signals from multiple satellites are not available, (usually because you cannot establish a view of a wide area of the sky), the GPS feature of your GPS RSM WILL NOT WORK. Such situations include but are not limited to:

- *In underground locations*
- *Inside of buildings, trains, or other covered vehicles*
- *Under any other metal or concrete roof or structure*
- *Between tall buildings or under dense tree-cover*

PUBLIC SAFETY SPEAKER MICROPHONES (PSM)

The RF switch has been removed from the XTS Radio to provide cost savings on the model. Therefore, the EXTERNAL RF SWITCH must be ORDERED and then ATTACHED to the radio in order for the PSM to operate. A wrench tool must be used to place the RF switch. These kits must be ordered separately. The RF switch and microphones are FM approved.

SELF-QUIETING SPURS

- 16.8 MHz is radio's main Reference Oscillator used on RF and Vocon board as main frequency source. This frequency is generously available on the Vocon board to the Patriot and Flipper ICs, and unfortunately a low level emitted frequency being picked up by the radio's receiver.

- 1.2, 1.5, 1.6 Hz are Abacus 3 frame sync clocks (programmable) for RX base band data transfer to Patriot. The values shown here are where the 3 frequency multiples intersect.

Self-Quieting Spurs

Frequency (MHz)	Source

386.4000	multiple of 16.8 MHz
398.0000	multiple of 1.2, 1.5, and 1.8 MHz
398.0000	multiple of 1.2, 1.5, and 1.8 MHz
403.2000	multiple of 16.8 MHz
414.0000	multiple of 1.2, 1.5, and 1.8 MHz
420.0000	multiple of 16.8 MHz
432.0000	multiple of 1.2, 1.5, and 1.8 MHz
436.8000	multiple of 16.8 MHz
450.0000	multiple of 1.2, 1.5, and 1.8 MHz
453.6000	multiple of 16.8 MHz
468.0000	multiple of 1.2, 1.5, and 1.8 MHz

FCC Information

~~FCC IDENTIFIER: AZ489FT4855~~

Name of Grantee: Motorola Solutions, Inc.

Equipment Class: **Licensed Non-Broadcast Transmitter Held to Face**
Notes: **ASTRO XTS5000 UHF R1**

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance
BE	**80, 90, 90.210**	**380.0 - 470.0**	**5.7**	**2.0 PM**
BE	**80, 90, 90.210**	**380.0 - 470.0**	**5.7**	**2.0 PM**
BE	**80, 90, 90.210**	**380.0 - 470.0**	**5.7**	**2.0 PM**
BE	**80, 90, 90.210**	**380.0 - 470.0**	**5.7**	**2.0 PM**
BE	**80, 90, 90.210**	**380.0 - 470.0**	**5.7**	**2.0 PM**

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

XTS 5000 Catalog Sheet

XTS Vehicular Adapter (XTVA)

Here is a link for the XTS 5000 Notation

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configuretions to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on XTS 5000 Dual Display Portable radios. Advanced Messaging is NOT supported on XTS 5000 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for XTS 5000 Portable Requires:

- XTS 5000 Dual Display
- ASTRO Digital CAI Operation (Q806)

- P25 Conventional (H35)
- Packet Data Interface (Q947)

OR

- XTS 5000 Dual Display
- ASTRO Digital CAI Operation (Q808)
- SmartZone Operation (H38)
- ASTRO Project 25 Trunking Software (Q381)
- Packet Data Interface (Q947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

XTS 5000 - INTENT TO CANCEL MEMO

Models

Description	Nomenclature	APC	Price
PORTABLE ASTRO DIGITAL XTS5000 380-470 MHZ 1-5W 48 CHANNEL BASIC Intent to Cancel, Last Order Date ? October 31, 2013	H18QDC9PW5 N	320 Intent to Cancel Date:	$1,933.00 31-Oct-2013
PORTABLE ASTRO DIGITAL XTS5000 380-470MHZ 1-5W 1000 CHAN LMTD KEYPAD Intent to Cancel, Last Order Date ? October 31, 2013	H18QDF9PW6 N	320 Intent to Cancel Date:	$2,458.00 31-Oct-2013
PORTABLE ASTRO DIGITAL XTS5000 380-470MHZ 1-5W 1000 CHAN FULL FEATURE Intent to Cancel, Last Order Date ? October 31, 2013	H18QDH9PW7 N	320 Intent to Cancel Date:	$2,782.00 31-Oct-2013
PORTABLE XTS5000 450-520MHZ / 1-5 Intent to Cancel, Last Order Date ? October 31, 2012	H18SDC9PW5 N	320 Intent to Cancel Date:	$1,933.00 31-Oct-2013
XTS5000 450-520MHZ / 1-5W 1000 CHAN Intent to Cancel, Last Order Date ? October 31, 2013	H18SDF9PW6 N	320 Intent to Cancel Date:	$2,458.00 31-Oct-2013
XTS5000 450-520MHZ / 1-5W / 1000 CHANNELS M3 Intent to Cancel, Last Order Date ? October 31, 2013	H18SDH9PW7 N	320 Intent to Cancel Date:	$2,782.00 31-Oct-2013

Options

Operation Mode

Description	Nomenclature	APC	Price
ENH: SOFTWARE ANALOG OPERATION MUST order Q241 or Q808.	Q241	721	$0.00
ADD: SOFTWARE ASTRO DIGITAL CAI INCLUDES the Channel Announcement Feature	Q806	320	$515.00

System Enhancement Software

Description	Nomenclature	APC	Price
ENH: TACTICAL RADIO STW-STUN/KILL	H02	721	$75.00
ADD: LINK LAYER RADIO AUTHENTICATION	H345	721	$100.00
ADD: CONVENTIONAL SYSTEMS OPERATION SOFTWARE LIMITED feature set for MDC-1200. Please see matrix for list of available features.	H35	721	$800.00
ADD: SMARTNET SYSTEMS SOFTWARE A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a QVN4046 to be purchased.	H37	721	$1,200.00
ADD: SMARTZONE SYSTEM SOFTWARE A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a QVN4046 to be purchased.	H36	721	$1,500.00
ENH: SMARTZONE OMNILINK MULTIZONE SYSTEM SOFTWARE ONLY compatible with H38 SmartZone and Q806 Digital Operation (required for 3600 baud only trunked systems.) Auto roaming Across zones, zone registration, trespass protection, over the air site alias, 32 preferred sites, FastStart and AllStart Call Set-up.	Q173	721	$200.00
ENH: PROJECT 25 9600 BAUD TRUNKING SOFTWARE MUST order H38 & Q806, when ordering. INCLUDED at "NO Charge" Q173-OmniLink.	Q381	721	$300.00

Systems Enhancement Options

Description	Nomenclature	APC	Price

ENH: OVER THE AIR PROVISIONING POP25 requires UCM & AES encryption for ASTRO Conventional operation. Must have IV&D (Q947) enabled. To do in field POP25 programming must use Advanced System Key (DVN4046A)	G998	721	$100.00
ENH: ENHANCED PTT ID DISPLAY This option is required to display Radio ID or Radio Alias on the display for analog and digital conventional and trunking configuretions	H14	721	$75.00
ENH: RS232, IV&D PACKET INTERFACE	Q947	721	$200.00
ADD: AUTO ROAMING CAPABILITY FOR X-SERIES SUBSCRIBERS	QA04444	655	$100.00

Adapter

Description	Nomenclature	APC	Price
ADD: RF ANTENNA SWITCH (NTN8327) The RF Switch has been removed from the XTS radio to improve water resistance. Therefore, the external RF switch must be attached to the radio in order for the PSM to operate. A wrench tool(which is not included with this adapter) must be used to place the RF switch. These kits must be ordered *seperately*. REQUIRES ANTENNA. The RF switch and microphones are FM approved. No discount on the RF Adapter Switch if purchased separately from the radio.	Q44	721	$10.00

Algorithm Options

Description	Nomenclature	APC	Price
ADD: DVI-XL ENCRYPTION REQUIRES Q156AA *Q159 MUST be ordered(REQUIRED). (Analog 25 khz Only)*	H793	721	$520.00
ADD: DVP-XL ENCRYPTION SOFTWARE Q159 MUST BE ORDERED!! (Analog 25 khz Only)	H797	721	$467.00
ADD: MULTIKEY Multiple encryption software packages can be ordered simultaneously. Multikey is REQUIRED when using more than one encryption algorithm or encryption key.	H889	721	$330.00
ADD: AES/DES-XL/DES-OFB ENCRYPTION Q159 REQUIRED. NOT compatible with Q629 and Q625, Must order multikey if you want to use both algorithms.	Q15	320	$799.00
ADD: XTS5000 UCM HARDWARE ENCRYPTION REQUIRED for ALL Encryption Algorithm or combination of Algorithms listed on page. *DES/XL Secure Analog Trunking NOT available. **ORDER at least 1 *Encryption Algorithm Option, which is REQUIRED.* *AES Encryption compatible with digital operation ONLY. SUPPORTS up to 4 Algorithms.	Q159	721	$150.00
ADD: TYPE 1 AND DES ENCRYPTION IS SOVERIGN AND CLASSIFIED Includes the Type 1 module and provides encrypted operation using AES, DES, DES-XL, DES-OFB and three Type 1 algorithms. REQUIRES Multikey (H889). Q374 is NOT capable of OTAR for Type 1, DES, or AES.	Q374	721	$1,849.00
ADD: TYPE 1 CAPABILITY AND DES ENCRYPTION IS SOVERIGN AND CLASSIFIED *Includes the Type 1 module and provides encrypted operation using AES, DES, DES-XL and DES-OFB algorithms. It can be upgraded to add Type 1* algorithms by arrangement with the Federal Technical Center. REQUIRES Multikey (H889). Q400 is NOT capable of OTAR for Type 1, DES, or AES.	Q400	721	$1,069.00
ADD: ADP PRIVACY NOT AVAILABLE with 3600 Trunking and Analog Conventional software Packages. Compatible with: Q361 (P25 software package); and H35, H37, and H36 software packages ONLY when used with the Q808 CAI software in the Digital Conventional mode. INCLUDES Multikey REQUIRES Q159. ADP Privacy is not FIPS compliant - ADP Privacy not supported by OTAR - AOP is digital P25 conventional / P25 trunking only	Q406	721	$349.00
ENH: MDC & ASTRO P25 OTAR W/ MULTIKEY Q159 REQUIRED.Tactical Rekey/Tactical OTAR is included and can be used only when IV&D is purchased. OTAR is NOT COMPATIBLE with TYPE 1 (Q374 or Q400).	Q498	721	$740.00
ADD: DES, DES-XL, DES-OFB ENCRYPTION Q159 MUST BE ORDERED!!.(Analog 25 khz) / DES-OFB (Digital 12.5 khz Only)	Q625	721	$599.00
ADD: AES ENCRYPTION Q159 REQUIRED.(P25 trunking OTAR will be available 12/03). This note only applys to VHF & UHF (NOT 700/800). OTAR is NOT COMPATIBLE with TYPE 1 (Q374 or Q400).	Q629	721	$475.00
ADD: ADP WITH DES, DES-XL, DES-OFB Q159 Required! NOT AVAILABLE with 3600 Trunking and Analog Conventional software Packages. Compatible with: Q361 (P25 software package); and H35, H37, and H36 software packages ONLY when used with the Q808 CAI software in the Digital Conventional mode. Includes multikey (H869)	Q868	721	$799.00

Antenna

Description	Nomenclature	APC	Price
DEL: ANTENNA, UHF (NAE8548)	H112	721	($10.00)
ALT: ANTENNA HELICAL UHF 380-435MHZ (NAE8548) *Deletes the standard widebend whip antenna (380-512 MHz) and adds the described antenna.*	H125	721	$0.00
ALT: ANTENNA HELICAL UHF 435-470MHZ (NAE6547) Deletes the standard widebend whip antenna (403-512 MHz) and adds the described antenna.	H126	721	$0.00
ALT: ANTENNA HELICAL UHF 470-520MHZ	H127	721	$0.00

Battery

Description	Nomenclature	APC	Price
DEL: BATTERY ALTOGETHER (800/VHF/UHF NNTN4435)	H207	721	($57.00)
ALT: BATTERY LIION 3950 MAH FM IMMERSION , (NNTN7453) LI-Ion 3950mAh, IMPRES, Intrinsically Safe, Ruggedized. Requires H499.	H238	721	$97.00
ALT: BATTERY IMPRES NIMH 1600MAH (NNTN4435) Deletes Standard Nickel Cadmium Battery that ships with the radio.	Q186	721	$0.00
ALT: BATTERY IMPRES NIMH FM 1700MAH (NNTN4436) Deletes the Standard NIMH Battery that ships with this radio. Please Reference General Information for ordering instrection and Factory Mutual Information.	Q393	721	$47.00
ALT: BATTERY IMPRES NIMH FM RUGGED 1700MAH (NNTN4437) *Provides the rugged radio with FM Certification. Please reference general ordering* instruction for additional Factory Mutual Information. Requires H499.	Q393RUGD	721	$47.00
ALT: BATTERY FM NIMH ULTRA HIGH CAPACITY 3000MAH (RNN4007) Deletes the standard Battery that ships with the radio. Guaranteed for 70% of capacity 1 year, ONLY.	Q42	320	$68.00
ALT: BATTERY HOLDER CLAMSHELL BLACK (NTN9177) Portable radio software version R07.00.002 or greater is REQUIRED for use with this product. Clamshell battery requires 12 "AA" Alkaline batteries to operate portable. *"AA" batteries are NOT included.* This battery is NOT FM approved or intrinsically safe. This battery will automatically reduce the radio's RF power to 2 Watts. Carry case available. Clamshells do not ship with a clip, clip must be ordered separate. The NTN8266B belt clip will work with the clam shell battery.	Q495	721	$0.00
ALT: IMPRES STD IP54 NIMH 3000MAH PMMN4093	QA01541	721	$68.00

Belt Clip(s)

Description	Nomenclature	APC	Price

	H301	721	($10.00)
ADD: 3 INCH BELT CLIP	H315	721	$11.25

Conventional Factory Programming

Description	Nomenclature	APC	Price
ADD:CONVENTIONAL FACTORY PROGRAMMING 160 CHANNELS Refer to Frequency and Squelch Section in the General Information Section above.	H477	721	$0.00

Data Cable (s)

Description	Nomenclature	APC	Price
ADD: DATA CABLE This option gives you the RS232 programming cable (RKN4106)and requires Q947 Option.	Q157	721	$150.00

Labels

Description	Nomenclature	APC	Price
ADD: ALTERNATE DISPLAY LABEL Includes 1 metallic red, metallic orange, metallic blue, metallic yellow, and reflective silver display label. ONLY available on Models 2 or 3.	Q788	721	$0.00

Service Options

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE Provides 3 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	H888AQ	185	$125.00
ENH: 2 YEAR ENCRYPTED REPAIR SERVICE ADVANTAGE Provides 2 years of extended hardware repair coverage, including encryption, beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	Q58	185	$97.00
3 YR ENCRYPTED REPAIR SERVICE ADVANTAGE Provides for extended hardware repair coverage, including encryption, beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.	Q58AK	185	$145.00

Software Encryption

Description	Nomenclature	APC	Price
ADD: ADP PRIVACY NOT AVAILABLE with 3600 Trunking and Analog Conventional software Packages. Compatible with: Q361 (P25 software package); and H35, H37, and H38 software packages ONLY when used with the Q809 CAI software in the Digital Conventional mode NOT COMPATIBLE with: Q150 (UCM Hardware Encryption. ADP Privacy is not FIPS compliant - ADP Privacy not supported by OTAR - ADP is digital P25 conventional / P25 trunking only	Q867	721	$10.00

Test Results

Description	Nomenclature	APC	Price
ADD: TEST RESULT PRINT OUT	H799	721	$0.00

Accessories

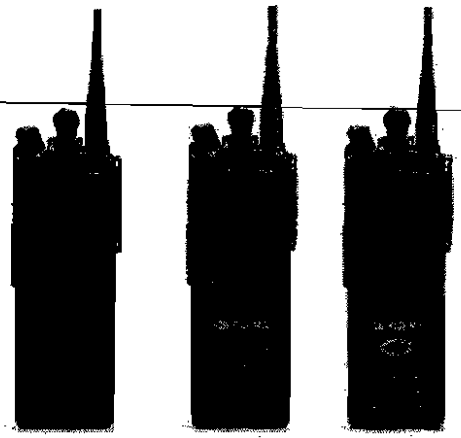
Data Compiled 16-May-2013 using DUP and all prices in USD

XTS 5000 Last Order Entry Date : October 31, 2013

XTS 5000 Last Scheduled Ship Date: November 30, 2013

XTS 5000 Notification of Intent to Cancel Memo

ASTRO® Digital XTS 5000 Portable Series
VHF / TYPE 1 Encryption
SMARTNET® "Handie-Talkie™" Radio
Conventional/ Secure/ Trunked Radio Systems



Special Note for United States - State & Local Markets only:

In accordance with FCC mandate, the XTS 5000 VHF products operating on Part 90 frequencies will be restricted to 12.5kHz or narrower operations on Jan. 1, 2013

Ship Card

Features

All ASTRO Digital XTS 5000 packaged models include the following hardware features:

- 3 Programmable Side Buttons
- Orange Emergency Button
- Illuminated 16 Position Mode Rotary Select Switch
- Angled On/Off Volume
- Low Battery Alert Tone
- Antenna (Band split and Type Dependent on Band Option)
- Smart Battery Technology
- Noise Reduction Software
- 1 Top Mounted Programmable Two Position Concentric Switch
- 1 Top Mounted Programmable Three Position Toggle Switch
- Weather Sealed Universal Connector
- Bi-Color LED Indicator
- Nickel Metal Hydride Battery
- Detachable Belt Clip
- ASTRO 25
- Audio Gain Control

ASTRO Digital XTS 5000 Model III also include:

- Full Keypad for Private Call
- 6 Lines Alphanumeric Display
- Date and Time Stamp
- Keypad Tone Mute
- Large Navigational Keypad
- Real Time Clock

All ASTRO Digital XTS 5000 Portables are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the same RF dack.)

Physiological Monitoring Solution

Physiological Monitoring is now available on the ASTRO 25 XTS5000 and XTS2500 portable radios. The Zephyr BioHarness™ BT couples the pioneering Smart Fabric sensor technology of the comfortable and unobtrusive BioHarness™ garment with the power and ubiquity of Bluetooth®. BioHarness™ BT enables the captura and transmission of comprehensive physiological data on the wearer exclusively via MOTOROLA ASTRO RADIOS – enabling genuine remote monitoring of human performance and condition in the real world.

The BioHarness™ BT can be used in a diverse range of areas including sports, defense, first responder and healthcare. Its professional-grade BioHarness™ system monitors conditions such as heat state, dehydration or injury by measuring vital signs including heart rate, breathing rate, skin temperature, posture end activity. Using the subject's voice radio, the BioHarness communicates to monitoring software designed to give real-time alerts and post-event analysis.

BioHarness™ BT can be worn in virtually eny environment – from combat situations to the training field. It maintains performance under extreme activity. Offering fast, accurate collection and analysis of high-quality, in-depth data, BioHarness™ BT is the definitive product for remote physiological monitoring in all conditions.

Zephyr Physiological Monitoring Ordering Guide

General Information

The ASTRO Digital XTS 5000 Portable Line offers three different radio hardware models:

Hardware Model	Modes	Alphanumeric Display	Keypad	Navigation Pad
		Lines/Characters Per Line		
ASTRO XTS 5000 Model I	48	None	None	No
ASTRO XTS 5000 Model II	1000	6/12/front mount	3 x 2	Yes
ASTRO XTS 5000 Model III	1000	6/12/front mount	3 x 6	Yes

Operating Modes

ASTRO Digital XTS 5000 Radio Models are capable of operating in three differant voice communication modes:

- Normal Analog (clear voice)
- 3.6KB ASTRO Digital (both clear and coded voice)
- 9.6KB ASTRO 25 Digital (both clear and coded voica)

The mode of operation is programmed on a channel-by-channel basis. With the coded/cleer awitch set to the clear mode, the ASTRO Digital XTS 5000 radio is capeble of transmitting clear enelog voice or clear (unencrypted) ASTRO digital voice, depending on the channel programming. With the coded/clear switch set to the coded mode, the ASTRO Digital XTS 5000 radio will transmit ASTRO Digital Encryption depending on the channel programming. ASTRO digital encryption provides communications security. ASTRO Digital Encryption (operating in encrypted mode while also operating in the 3.6KB or 9.6 KB ASTRO mode) is capable of XL type ancryptions; ASTRO Digital Encryption Does not operate with non-XL encryptions.

An Encryption Option is not requirad for either clear analog operation or clear ASTRO digital operation. Encryption can be ordered with the ASTRO Digital XTS 5000 radio either as a factory installed option or separate from the radio for later field installation. ASTRO Digital XTS 5000 radio functions include selected ASTRO digital signaling and digital speech coding.

Please note that the XTS5000 does NOT support FRED.

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adherad to on the ASTRO Digital XTS5000 Portable Radio Series. Separation of frequencies can be as wide as the allowable sub-band per redio model with no degradation of any performance specifications. If an incorrect antenna is used, degraded performance may be experienced.

FLASHport AFTERMARKET UPGRADES

The ASTRO Digital XTS 5000 Portable Series Radios are part of the FLASHport Program. This means that ASTRO Digital XTS 5000 hardware models can be loaded with differant softwara packages that provide the features and functionalities thet your customers require. Three different hardware models ara avellable in each band split.

System Enhancement Options can be loaded at the time of radio purchase or at a later date through the use of software field upgrades (a RS232 cable or USB cable are required for all software upgrades.) The ASTRO Digital XTS 5000 portable can be upgraded electronically in the field with new featuras in the current system or to new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

RELATIVE RADIATED RECEIVE SENSITIVITY

The reletive radiated receive sensitivity test (formerly referred to as self-quieters) measures the sensitivity from 136.05MHz to 173.975MHz in 12.5kHz steps. The radio is set to 25kHz channel mode. These meaeuremants wara taken in a shielded environment so that degraded sensitivity at discrete frequencies is known to be due to the radio's self-interferance (as opposed to external interference). The following list conteins frequencies which were consistently found to have severely degraded performance on all measured radios.

Block Out Frequencies	approximate degradation in dB (+/-5dB)
168.0000 MHz	33
144.0000 MHz	15
151.2000 MHz	20
162.0000 MHz	15
168.5250 MHz	9
169.0000 MHz	8
147.4625 MHz	10
167.4750 MHz	8
150.0125 MHz	10

Ordering Requirements

Ordering procedure is as follows...

1 H18UCH9PW N ASTRO XTS 5000 Portable
1A Q806 Digital Operation
1B H38 SmartZone® Operation
1C etc.

1. Order the ASTRO Digital XTS 5000 Portable Series as the main line item (H18UCH9PW7_N).
2. Each hardware model MUST be ordered with one Operating Mode. One Operating Mode for each radio unit ordered. Choose between Analog or Digital Operation.
3. Each Hardware model MUST be ordered with one System Software Package. One System Software Package for each radio unit ordered.
   - The matrix below list available radio wide, conventional features, and standard trunking features for SMARTNET® (H37) and SmartZone(H38) System Packages.
   - The SmartZone features listed in the second matrix are available in the SmartZone(H38) package ONLY.
4. Select ANY desired System Enhancement Options
   - System Enhancement Options can be loaded at the time of radio purchase or at a later date through the use of software field upgrades (a RS232 cable or USB cable are required for all software upgrades.)

COMMON SOFTWARE FEATURES SUPPORTED BY H37 "SMARTNET"/H38 "SmartZone"	"Analog Operation"(Q241) Non-Project 25 (3600 Baud)	"ASTRO Digital"(Q806) Non-Project 25 (3600 Baud)	"ASTRO Digital"(H38/Q806/Q361) Project 25 (9600 Baud)
RADIO WIDE FEATURES			
Maximum Modes			
ASTRO Digital XTS 5000 Model I	16/48	16/48	16/48
ASTRO Digital XTS 5000 Model II & III	1000	1000	1000
Analog and Digital Operation	-	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes
Secure Capable	No	Yes	Yes
One Touch Operation	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes
Surveillance Mode	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes
Radio Lock	Yes	Yes	Yes
Smart Battery	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES			
Conventional Features are additional radio wide features beyond those specified above.			
CSQ/PL/DPL	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes
Adaptive Power Control	Yes	Yes	Yes
Repeater/Talkaround Operation	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes

Monitor	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES			
These features are APCO Project 25 Conventional Interoperable Features when used in the ASTRO Digital CAI Mode (Q806).			
Unaddressed Voice Call	-	Yes	Yes
Talk Group Call	-	Yes	Yes
Group Call Alert™	-	Yes	Yes
Talk Group Identification (TGID)	-	Yes	Yes
Selective Call (Individual Voice Call)	-	Yes	Yes
Selective Call Decode (Individual Voice Call)	-	Yes	Yes
PTT ID (Individual Identification)	-	Yes	Yes
Call Alert Encode/Decode	-	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	-	Yes	Yes
Telephone Interconnect	-	Yes	Yes
Unlimited (Model III Only)	-	Future	Future
Selective Radio Inhibit	-	Yes	Yes
Radio Check	-	Yes	Yes
Status/Message	-	Yes	Yes
Trunking Type II Only Features			
Maximum Number of Trunked Systems-20	Yes	Yes	Yes
Talkgroup Calls	Yes	Yes	Yes
PTT ID (H14 option required)	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes
Dual Mode Scan	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes
Remote Monitor/Radio Trace	Yes	Yes	No
Reprogram Request	Future	Future	Future

SOFTWARE FEATURES SUPPORTED BY			
H38 "SmartZone"			
	"Analog Operation" (Q241)	"ASTRO Digital" (Q806)	"ASTRO Digital" (H37/Q806/Q361)
		Non-Project 25 (3600 Baud)	Project 25 (9600 Baud)
Trunking Type II Only Features			
Voice on Control	Future	Future	Future
SmartZone Automatic Site Registration	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes
SmartZone Preferred Site	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes

LIMITED MDC FEATURES	
Offered In 6.3	
MDC PTT ID ENCODE/DECODE	YES
MDC Selective Radio Inhibit	Decode ONLY
MDC Call Alert	Yes
MDC Radio Check	Decode ONLY
MDC Voice Selective Call	Yes
MDC Remote Monitor	Decode ONLY
MDC Call Lists (Call Alert / Select Call)	Yes

MDC Emergency	Yes

CONVENTIONAL FACTORY PROGRAMMING

ASTRO Digital XTS 5000 portables ship without customer specific factory programming unless a programming options is specified.

FREQUENCY AND SQUELCH CODES

Although some models of the ASTRO Digital XTS 5000 are capable of 512 channels, the factory can accommodate the programming of only 128 continuous channels in any one radio. If the programming of more than 128 continuous channels is desired, field programming software must be used. **H477 ADD: Frequency & Squelch Data No Charge**

ZONED OPERATION

This option converts MODE-ONLY ASTRO Digital XTS 5000 portables to Zone Operation radios. A maximum of 16 RX and TX pairs can be placed into a zone. There is a maximum of three zones (48 modes) on the "I" Model, with zone operation programmed to the programmable top mounted two-position concentric switch. There is a maximum of 16 zones (512 modes) on the "II" and "III" models, and the zones will be programmed to be selected from the keyped. The factory can only accommodate the programming of only 128 continuous channels consisting of any combination of zones and channels and minimum of 32 channels with two zones on the "II" models. **When you ordering H477, H371 must be ordered. H371 ADD: ASTRO Digital XTS 5000 Zone Operation No Charge**

PROJECT 25 ENCRYPTION

When ordering eny of the Encryption Algorithm:

- **Muet** order the Encryption UCM Hardware (Q159)
  - The DES-OFB and AES encryptions offered are compliant with digital Project 25 standards and does not support enalog encryption operation.
  - **Requiree** the ASTRO Digital CAI (Q806) to operate the DES-OFB and AES encryption.
- If ordering a Dual Encryption:
  - The non-OFB encryption (XL versions) can be operated in either analog , or CAI digital mode, but will not be Project 25 compliant.
  - **Requiree** the Multikey (H889).
- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.
  - Encryption UCM Hardware (Q159) module may be ordered without an Encryption Algorithm for later upgrade in the field.

FIELD INSTALLED PROJECT 25 ENCRYPTION

The DES-OFB and AES-OFB encryptions offered are compliant with Project 25 standards. Operation of DES-OFB and/or AES-OFB encryption requires the ASTRO Digital CAI (Q806) option. Radios cen be upgraded via FLASHport to CAI operetion.

- If ordering e Dual Encryption:
  - The non-OFB encryption cen be operated in analog or CAI mode (only XL versions operate in either digital mode).
  - **Requiree** the Multikey (H889).
- When used in the CAI mode, the non-OFB encryption will not be Project 25 compliant.

FIPS 140-2 Compliance

Encryption Modules equipped with AES are FIPS 140-2 compliant. Further information regarding FIPS 140-2 certification may be found using the following links:

FIPS 140-2 Crypto Module Validation Program (CMVP)

NIST Cryptographic Module Validation Lists

FM INFORMATION

The XTS 5000 portable redio when properly equipped with options Q393AN and Q393RUGDAR are Factory Mutual (FM/CSA) Approved as intrinsically safe for use in Clase I, II, III, Division 1, Group C, D, E, F, and G and Nonicendive Class I, Division 2, Group A, B, C and D, when ordered without encryption modules.

The XTS 5000 portables equipped with UCM encryption modules and options Q393AP and Q393RUGDAQ are FM Approved es Intrinsically Safe for use in Class I, II, III, Division 1, Group D, F, G and Nonicendive for use in Class I, Div 2, Group A, B, C, D only.

XTS 5000 FM/CSA approved portable redio models installed with Type 1 encryption module (Q374 or Q400), are intrinsically safe for use in the Nonicendive, Class I, Division 2, Groups A, B, C, D, when used with Motorola FM/CSA approved battery options Q393AV and Q393RUGDAW or H223CP and H223RUGDCW. Type 1 is not offered on either the 700/800 or UHF R2 bands.

ASTRO Text Messaging Service

ASTRO Text Messaging Service will be available on ASTRO 25 XTS 5000, XTS 2500 Portable radios and ASTRO 25 XTL 5000, XTL 2500 Mobile radios. Text Messaging Service (TMS) allows subscriber users to send and receive text messages to other subscribers or dispatch operators. Users can select messages and addresses from a predefined list or enter freeform text messages and addresses via the keypad. Text Messaging Service is available on ASTRO Trunked IV&D Systems and Subscribers. Subscribers must have version R09.00.00 or later of both Customer Programming Softwars (CPS) and Radio software .

For full Text Messaging functionality, including freeform text messaging and addressing, must order Model III XTS5000 portables. Model II versions support Limited Text Messaging functionality such as selecting predefined messages or addresses from a list progremmed in the redio. Text messaging service is NOT supported on Model I Portables.

Ordering requirements for XTS 5000 Portable:

- Requires Model II or Model III XTS 5000
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (H38)
- ASTRO Project 25 Trunking Software (Q361)
- Packet Data Interface (Q947)

NOTE: *There is no specific option to order for the Text Messaging Service on the subscribers as the functionality is included in the Packet Data option.*

Outdoor Personnel Location Global Positioning Satellite (GPS) Feature

The personnel outdoor location tracking GPS feature enables a dispatcher the ability to locate on-foot patrols and out of the vehicle officers who are involved in life threatening situations. The radio user's GPS position information is sent over the ASTRO 25 Integrated Voice & Data (IV&D) network and is delivered to the dispatch operator using a third party mapping display application at the dispatch center *(Mapping Application is not yet available through Motorola at this time, however an Application Developers Tool Kit is available for 3rd party vendors to use to modify existing applications. See link below for more details.)*

This capability is now available on ASTRO 25 Conventional IV&D Systems and ASTRO 25 Trunking IV&D Systems on XTS 5000 Models I, II, III and Ruggedized with appropriate radio software (see below).

Required equipment for operating in ASTRO 25 Conventional IV&D and ASTRO 25 Trunking IV&D Systems is as follows:

	ASTRO 25 Conventional IV&D	ASTRO 25 Trunking IV&D
Radio Software	Version R09.00.00 or later	Version R09.00.00
Customer Programming Software (CPS)	Version R09.00.00 or later (RVN4161)	Version R09.00.00 or later (RVN4161)
ASTRO CAI operation	Q806	Q806
System Enhancement Software	H35 (or H37, H38 in Conventional Mode)	H38
ASTRO Project 25 Trunking Software		Q361
GPS Remote Speaker Microphone/GPS Remote Speaker Microphone with Earjack	HMN4080 or HMN4084	HMN4080 or HMN4084

For fielded XTS 5000 Portables that are already Conventional IMBE Digital Enabled or Trunking IMBE Digital Enabled, see FLASHport upgrade Price Pages to order a software refresh to get the GPS enabled software.

During normal operation the radio's battery capacity will be reduced by 10% to 16% based on 1 location update per minute.

NOT COMPATIBLE with Man -Down Side Connector (NTN7660), Clamshell Battery Holder (Q495, Q496, NTN9177, NTN9163).

For further information refer regarding System Requirements, go to the Location Solutions Price Page at:
http://ecat.comm.mot.com/ecat/pricebooks/dup/ALOCATION.htm

NOTE:
The GPS technology uses radio signals from earth orbiting satellites, to establish the location co-ordinates, meximizing your view of clear, unobstructed sky is essential for optimum performance. Where adequate signals from multiple satellites are not available, (usually because you cannot establish a view of a wide area of the sky), the GPS feature of your GPS RSM WILL NOT WORK. Such situations include but are not limited to:

- *In underground locations*
- *Inside of buildings, trains, or other covered vehicles*
- *Under any other metal or concrete roof or structure*
- *Between tall buildings or under dense tree-cover*

PUBLIC SAFETY SPEAKER MICROPHONES (PSM)

The RF switch has been removed from the XTS Radio to provide cost savings on the model. Therefore, the EXTERNAL RF SWITCH must be ORDERED and then ATTACHED to the radio in order for the PSM to operate. A wrench tool must be used to place the RF switch. These kits must be ordered separately. The RF switch and microphones are FM approved.

FCC Information

FCC IDENTIFIER: AZ489FT3804

Name of Grantee: Motorola Inc

Equipment Class: Licensed Non-Broadcast Transmitter Held to Face
Notes: Astro XTS 5000 Digital Portable
Modular Type: Does not apply

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance	Emission Designator

BE	80, 90	136.0 - 174.0	6.6	2.0 PM	16K0F3E
BE	80, 90.210	136.0 - 174.0	6.6	2.0 PM	11K0F3E
BE	80, 90.210	136.0 - 174.0	6.6	2.0 PM	8K10F1E
BE	80, 90.210	136.0 - 174.0	6.6	2.0 PM	8K10F1D
BE	80, 90	136.0 - 174.0	6.6	2.0 PM	20K0F1E

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

XTS 5000 Catalog Sheet

XTS Vehicular Adapter (XTVA)

Here is a link for the XTS 5000 notation.

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messeging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messeging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on XTS 5000 Dual Display Portable radios. Advanced Messeging is NOT supported on XTS 5000 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for XTS 5000 Portable Requires:

- XTS 5000 Dual Display
- ASTRO Digital CAI Operation (Q806)
- P25 Conventional (H35)
- Packet Data Interface (Q947)

OR

- XTS 5000 Dual Display
- ASTRO Digital CAI Operation (Q806)
- SmartZone Operation (H38)
- ASTRO Project 25 Trunking Software (Q361)
- Packet Data Interface (Q947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

XTS 5000 - INTENT TO CANCEL MEMO

Models

Description	Nomenclature	APC	Price
PORTABLE ASTRO DIGITAL XTS5000 136-174MHZ 1-6W 48 CHANNEL BASIC Intent to Cancel, Last Order Date ? October 31, 2013	H18KEC9PW5 N	320	$1,933.00 Intent to Cancel Date: 31-Oct-2013
PORTABLE ASTRO DIGITAL XTS5000 136-174MHZ 1-6W 1000 CHAN LMTD KEYPAD Intent to Cancel, Last Order Date ? October 31, 2013	H18KEF9PW6 N	320	$2,458.00 Intent to Cancel Date: 31-Oct-2013
PORTABLE ASTRO DIGITAL XTS5000 136-174MHZ 1-6W 1000 CHAN FULL FEATURE Intent to Cancel, Last Order Date ? October 31, 2013	H18KEH9PW7 N	320	$2,782.00 Intent to Cancel Date: 31-Oct-2013

Options

Operation Mode

Description	Nomenclature	APC	Price
ENH: SOFTWARE ANALOG OPERATION *MUST order Q241 or Q806.*	Q241	721	~~$0.00~~
ADD: SOFTWARE ASTRO DIGITAL CAI OPERATION INCLUDES the Channel Announcement Feature	Q806	721	$515.00

System Enhancement Software

Description	Nomenclature	APC	Price
ENH: TACTICAL RADIO STW-STUN/KILL	H02	721	$75.00
ADD: LINK LAYER RADIO AUTHENTICATION	H345	721	$100.00
ADD: CONVENTIONAL SYSTEMS OPERATION SOFTWARE *LIMITED feature set for MDC-1200. Please see matrix for list of available features.*	H35	721	$800.00
ADD: SMARTNET SYSTEMS SOFTWARE A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	H37	721	$1,200.00
ADD: SMARTZONE SYSTEM SOFTWARE A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.	H38	721	$1,500.00
ENH: SMARTZONE OMNILINK MULTIZONE SYSTEM SOFTWARE ONLY compatible with H36 SmartZone and Q606 Digital Operation (required for 9600 baud only trunked systems.) Auto roaming Across zones, zone registration, trespass protection, over the air site alias, 32 preferred sites, FastStart and AllStart Call Set-up.	Q173	721	$200.00
ENH: PROJECT 25 9600 BAUD TRUNKING SOFTWARE *MUST order H36 & Q809, when ordering.* INCLUDED at "NO Charge" Q173-OmniLink.	Q381	721	$300.00
ENH: MULTICAST VOTING SCAN	Q387	721	$200.00

Systems Enhancement Options

Description	Nomenclature	APC	Price
ENH: OVER THE AIR PROVISIONING *P0P25 requires UCM & AES encryption for ASTRO Conventional operation. Must have IV&D (Q947) enabled. To do in field P0P25 programming must use Advanced System Key (DVN4046A)*	G996	721	$100.00
ENH: ENHANCED PTT ID DISPLAY This option is required to display Radio ID or Radio Alias on the display for analog and digital conventional and trunking configurations	H14	721	$75.00
ADD: TRUNKED RADIO TRACE AND REMOTE MONITOR	H43	721	$100.00
ENH: ONE TOUCH BUTTON STATUS MESSAGE Quick feature provides access to Call Alert, Status, Message, Selective Call, or Telephone Interconnect. Telephone Interconnect applies to Model III ONLY!!	H48	721	$150.00
ENH: RS232, IV&D PACKET INTERFACE	Q947	721	$200.00
ADD: AUTO ROAMING CAPABILITY FOR X-SERIES SUBSCRIBERS	QA04444	655	$100.00

Adapter

Description	Nomenclature	APC	Price
ADD: RF ANTENNA SWITCH (NTN8327) The RF Switch has been removed from the XTS radio to improve water resistance. Therefore, the external RF switch must be attached to the radio in order for the PSM to operate. A wrench tool(which is not included with this adapter) must be used to place the RF switch. These kits must be ordered separately. REQUIRES ANTENNA. The RF switch and microphones are FM approved. No discount on the RF Adapter Switch if purchased seperately from the radio.	Q44	721	$10.00

Algorithm Options

Description	Nomenclature	APC	Price
ADD: DVI-XL ENCRYPTION REQUIRES Q159AA Q159 MUST be ordered(REQUIRED). (Analog 25 khz Only)	H783	721	$520.00
ADD: DVP-XL ENCRYPTION SOFTWARE *Q159 MUST BE ORDERED!!* (Analog 25 khz Only)	H787	721	$487.00
ADD: MULTIKEY Multiple encryption software packages can be ordered simultaneously. Multikey is REQUIRED when using more than one encryption algorithm or encryption key.	H869	721	$330.00
ADD: AES/DES-XL/DES-OFB ENCRYPTION Q159 REQUIRED. NOT compatible with Q629 and Q825. Must order multikey if you want to use both algorithms.	Q15	320	$795.00
ADD: XTS5000 UCM HARDWARE ENCRYPTION REQUIRED for ALL Encryption Algorithm or combination of Algorithms listed on page. *DES/XL Secure Analog Trunking NOT available. **ORDER at least 1 Encryption Algorithm Option, which is REQUIRED. *AES Encryption compatible with digital operation ONLY. SUPPORTS up to 4 Algorithms.	Q159	721	$150.00
ADD: TYPE 1 AND DES ENCRYPTION IS SOVERIGN AND CLASSIFIED Includes the Type 1 module and provides encrypted operation using AES, DES, DES-XL, DES-OFB and three Type 1 algorithms. REQUIRES Multikey (H869). Q374 is NOT capable of OTAR for Type 1, DES, or AES.	Q374	721	$1,848.00

ADD: TYPE 1 CAPABILITY AND DES ENCRYPTION IS SOVERIGN AND CLASSIFIED Includes the Type 1 module and provides encrypted operation using AES, DES, DES-XL and DES-OFB algorithms. It can be upgraded to add Type 1 algorithms by arrangement with the Federal Technical Center. REQUIRES Multikey (H869). Q400 is NOT capable of OTAR for Type 1, DES, or AES.	Q400	721	$1,069.00
ADD: ADP PRIVACY NOT AVAILABLE with 3600 Trunking and Analog Conventional software Packages. Compatible with: Q361 (P25 software package); and H35, H37, and H38 software packages ONLY when used with the Q806 CAI software in the Digital Conventional mode. INCLUDES Multikey REQUIRES Q159. ADP Privacy is not FIPS compliant - ADP Privacy not supported by OTAR - ADP is digital P25 conventional / P25 trunking only	Q406	721	$349.00
ENH: MDC & ASTRO P25 OTAR W/ MULTIKEY Q159 REQUIRED.Tactical Rekey/Tactical OTAR is included and can be used only when IV&D is purchased. OTAR is NOT COMPATIBLE with TYPE 1 (Q374 or Q400).	Q496	721	$740.00
ADD: DES, DES-XL, DES-OFB ENCRYPTION Q159 MUST BE ORDERED!!.(Analog 25 khz) / DES-OFB (Digital 12.5 khz Only)	Q625	721	$599.00
ADD: AES ENCRYPTION Q159 REQUIRED.(P25 trunking OTAR will be available 12/03). This note only applys to VHF & UHF (NOT 700/800). OTAR is NOT COMPATIBLE with TYPE 1 (Q374 or Q400).	Q629	721	$475.00
ADD: ADP WITH DES, DES-XL, DES-OFB Q159 Required! NOT AVAILABLE with 3600 Trunking and Analog Conventional software Packages. Compatible with: Q361 (P25 software package); and H35, H37, and H38 software packages ONLY when used with the Q806 CAI software in the Digital Conventional mode. Includes multikey (H869)	Q666	721	$799.00

Antenna

Description	Nomenclature	APC	Price
~~DEL: ANTENNA, VHF (NAD6563)~~	H112	721	($10.00)
ALT: ANTENNA HELICAL VHF 136-150.8 MHZ (NAD6586) Deletes the standard wideband helical antenna and adds the described antenna	H128	721	$0.00
ALT: ANTENNA HELICAL VHF 150.8-162 MHZ (NAD6587) Deletes the standard wideband helical antenna and adds the described antenna	H129	721	$0.00
ALT: ANTENNA HELICAL VHF 162-174 MHZ (NAD6588) Deletes the standard wideband helical antenna and adds the described antenna	H65	721	$0.00

Battery

Description	Nomenclature	APC	Price
DEL: BATTERY ALTOGETHER (800/VHF/UHF NNTN4435)	H207	721	($57.00)
ALT: BATTERY LIION 3950 MAH FM IMMERSION , (NNTN7453) LIion 3950mAh, IMPRES, Intrinsically Safe, Ruggedized. Requires H499.	H236	721	$97.00
ALT: BATTERY IMPRES NIMH FM 1700MAH (NNTN4436) Deletes the Standard NIMH Battery that ships with this radio. Please Reference General Information for ordering instruction and Factory Mutual Information.	Q393	721	$47.00
ALT: BATTERY IMPRES NIMH FM RUGGED 1700MAH (NNTN4437) Provides the rugged radio with FM Certification. Please reference general ordering instruction for additional Factory Mutual Information. Requires H499.	Q393RUGD	721	$47.00
ALT: BATTERY FM NIMH ULTRA HIGH CAPACITY 3000MAH (RNN4007) Deletes the standard Battery that ships with the radio. Guaranteed for 70% of capacity 1 year, ONLY.	Q42	320	$68.00
ALT: BATTERY HOLDER CLAMSHELL BLACK (NTN9177) Portable radio software version R07.00.002 or greater is REQUIRED for use with this product. Clamshell battery requires 12 "AA" Alkaline batteries to operate portable. "AA" batteries are NOT included. This battery is NOT FM approved or intrinsically safe. This battery will automatically reduce the radio's RF power to 2 Watts. Carry case available. Clamshells do not ship with a clip, clip must be ordered separate. The NTN8266B belt clip will work with the clam shell battery.	Q495	721	$0.00
ALT: BATTERY HOLDER CLAMSHELL ORANGE (NTN9183) Portable radio software version R07.00.002 or greater is REQUIRED for use with this product. Clamshell battery requires 12 "AA" Alkaline batteries to operate portable. "AA" batteries are NOT included. This battery is NOT FM approved or intrinsically safe. This battery will automatically reduce the radio's RF power to 2 Watts. Carry case available.Clamshells do not ship with a clip, clip must be ordered separate. The NTN8266B belt clip will work with the clam shell battery.	Q498	721	$0.00
ALT: BATTERY LITHIUM ION IMPRES THIN 2750MAH (NTN9862) DELETES the standard NICAD Battery that ships with the radio. REQUIRES new chargers including: NTN1667, NTN1873, WPLN4108 R, WPLN4111, WPLN4130, WPLN4208 & XTVA Rev "F"	Q712	721	$93.00
ALT:BATTERY LITHIUM IMPRES HIGH CAPACITY 4150MAH (NNTN6034) ALT:BATTERY LITHIUM IMPRES HIGH CAPACITY 4150MAH (NNTN6034). REQUIRES new chargers including: NTN1667, NTN1873, WPLN4108 R, WPLN4111, WPLN4130, WPLN4208 & XTVA Rev "F"	QA00212	721	$93.00
ALT: IMPRES STD IP54 NIMH 3000MAH PMNN4093	QA01541	721	$68.00

Belt Clip(s)

Description	Nomenclature	APC	Price
DEL: DETACHABLE 2 1/2" BELT CLIP (NTN8266)	H301	721	($10.00)
ADD: 3 INCH BELT CLIP	H316	721	$11.25

Conventional Factory Programming

Description	Nomenclature	APC	Price
ADD:CONVENTIONAL FACTORY PROGRAMMING 160 CHANNELS Refer to Frequency and Squelch Section in the General Information Section above.	H477	721	$0.00

Data Cable (s)

Description	Nomenclature	APC	Price
ADD: DATA CABLE This option gives you the RS232 programming cable (RKN4106)and requires Q847 Option.	Q157	721	$150.00

Labels

Description	Nomenclature	APC	Price
ADD: ALTERNATE DISPLAY LABEL Includes 1 metallic red, metallic orange, metallic blue, metallic yellow, and reflective silver display label. ONLY available on Models 2 or 3.	Q766	721	$0.00

Programming

Description	Nomenclature	APC	Price
ENH: ECC COMV FRP AND CLONE			

	Q53	320	$150.00

Compatible with Digital Conventional Operation only - requires H35. Compatible with Model 3 radios only. The connector accessory key (PMTN4113) is required for utilizing FPP.
*When ordering the FPP option you only get 240 channels.

Ruggedized Housing

Description	Nomenclature	APC	Price
ALT: SUBMERSIBLE - 8 FT. 2 HOURS.(RUGGED)	H499	721	$250.00

Delta T rating (8 ft - 2hrs). This option will generate the standard ruggedized battery.

Service Options

Description	Nomenclature	APC	Price
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	H868AQ	185	$125.00

Provides 3 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ADD: 1 YR RSA COMPREHENSIVE	HA00020AA	185	$88.00
	Intent to Cancel Date:		15-Jan-2013
ADD: 2 YR RSA COMPREHENSIVE	HA00021AA	185	$163.00
	Intent to Cancel Date:		15-Jan-2013
ENH: CANADA 3 YR ENCR EXT WARR	~~HA00048~~	~~388~~	~~$200.00~~

Upgrades the standard warranty period to a full three (3) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.

ENH: CANADA 5 YR ENCR EXT WARR	HA00049	388	$244.00

Upgrades the standard warranty period to a full five (5) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.

ENH: XTS5000 CANADA 3 YR EXT WARR	HA00050	388	$159.00

Upgrades the standard warranty period to a full three (3) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.

ENH: XTS5000 CANADA 5 YR EXT WARR	HA00051	388	$212.00

Upgrades the standard warranty period to a full five (5) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.

ENH: 1 YR ENCRYPTED REPAIR SERVICE ADVANTAGE	Q57	185	$51.00

Provides for extended hardware repair coverage, including encryption, beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ENH: 2 YEAR ENCRYPTED REPAIR SERVICE ADVANTAGE	Q58	185	$97.00

Provides 2 years of extended hardware repair coverage, including encryption, beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	Q884	185	$44.00

Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ENH:4 YEAR REPAIR SERVICE ADVANTAGE	Q887	185	$182.00

Provides 4 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ENH: 3 YR ENCRY REPAIR SERVICE	QA01540	185	$145.00

Provides 3 years of extended hardware repair coverage, including encryption, beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

Software Encryption

Description	Nomenclature	APC	Price
ADD: ADP PRIVACY	Q667	721	$10.00

NOT AVAILABLE with 3600 Trunking and Analog Conventional software Packages. Compatible with: Q361 (P25 software package); and H35, H37, and H38 software packages ONLY when used with the Q806 CAI software in the Digital Conventional mode. NOT COMPATIBLE with: Q158 (UCM Hardware Encryption. ADP Privacy is not FIPS compliant - ADP Privacy not supported by OTAR - ADP is digital P25 conventional / P25 trunking only

Zone Operation

Description	Nomenclature	APC	Price
ADD: ZONE OPERATION	H371	721	$0.00

MUST order H477 with this option. Refer to Zoned Operation Section above in the General Information.

Manual(s)

Description	Nomenclature	APC	Price
ADD: USER GUIDE MANUAL CD	H88	721	$0.00

Accessories

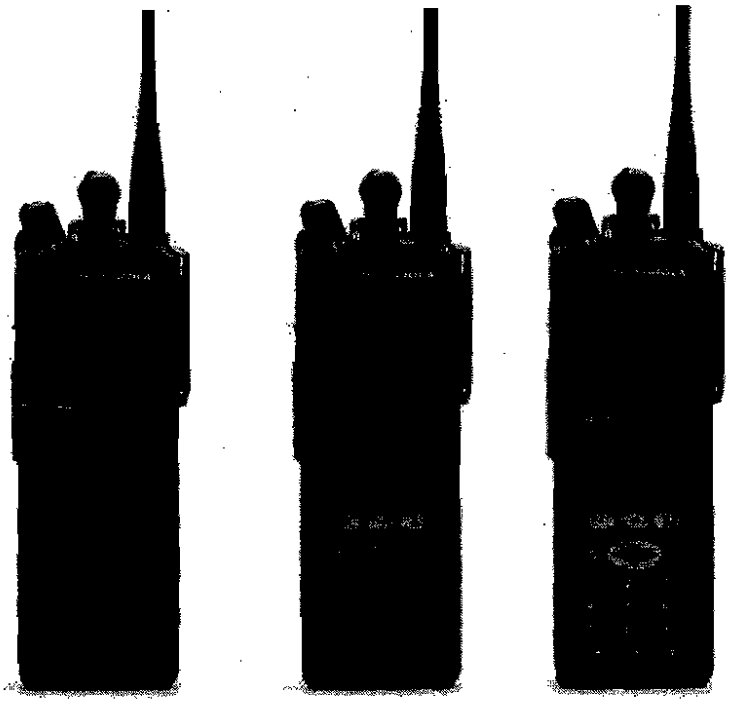
Data Compiled 16-May-2013 using DUP and all prices in USD

XTS 5000 Last Order Entry Date : October 31, 2013

XTS 5000 Last Scheduled Ship Date: November 30, 2013

XTS 5000 Notification of Intent to Cancel Memo

ASTRO® Digital XTS 5000 Portable Series
700/800 MHz Band
SMARTNET® "Handie-Talkie™" Radio
Conventional/ Secure/ Trunked Radio Systems



Ship Card

Features

All ASTRO Digital XTS 5000 packaged models include the following hardware features:

- 3 Programmable Side Buttons
- Orange Emergency Button
- Illuminated 16 Position Mode Rotary Select Switch
- Angled On/Off Volume
- 1 Top Mounted Programmable Two Position Concentric Switch
- 1 Top Mounted Programmable Three Position Toggle Switch
- Weather Sealed Universal Connector
- Bi-Color LED Indicator

- Low Battery Alert Tone
- Antenna (Band split and Type Dependent on Band Option)
- Smart Battery Technology
- Noise Reduction Software
- Nickel Metal Hydride Battery
- Detachable Belt Clip
- ASTRO 25
- Audio Gain Control

ASTRO Digital XTS 5000 Model III also include:

- Full Keypad for Private Call
- 6 Lines Alphanumeric Display
- Date and Time Stamp
- Keypad Tone Mute
- Large Navigational Keypad
- Real Time Clock

All ASTRO Digital XTS 5000 Portables are part of the FLASHport® program and ship standard with a FLASH EE Prom, which allows for feature and system upgrades (contingent upon remaining within the same RF deck.)

Physiological Monitoring Solution

Physiological Monitoring is now available on the ASTRO 25 XTS5000 and XTS2500 portable radios. The Zephyr BioHarness™ BT couples the pioneering Smart Fabric sensor technology of the comfortable and unobtrusive BioHarness™ garment with the power and ubiquity of Bluetooth®. BioHarness™ BT enables the capture and transmission of comprehensive physiological data on the wearer exclusively via MOTOROLA ASTRO RADIOS – enabling genuine remote monitoring of human performance and condition in the real world.

The BioHarness™ BT can be used in a diverse range of areas including sports, defense, first responder and healthcare. Its professional-grade BioHarness™ system monitors conditions such as heat state, dehydration or injury by measuring vital signs including heart rate, breathing rate, skin temperature, posture and activity. Using the subject's voice radio, the BioHarness communicates to monitoring software designed to give real-time alerts and post-event analysis.

BioHarness™ BT can be worn in virtually any environment – from combat situations to the training field. It maintains performance under extreme activity. Offering fast, accurate collection and analysis of high-quality, in-depth data, BioHarness™ BT is the definitive product for remote physiological monitoring in all conditions.

Zephyr Physiological Monitoring Ordering Guide

General Information

The ASTRO Digital XTS 5000 Portable Line offers three different radio hardware models:

Hardware Model	Modes	Alphanumeric Display Lines/Characters Per Line	Keypad	Navigation Pad
ASTRO XTS 5000 Model I	48	None	None	No
ASTRO XTS 5000 Model II	1000	6/12/front mount	3 x 2	Yes

ASTRO XTS 5000 Model III	1000	6/12/front mount	3 x 6	Yes

Operating Modes

ASTRO Digital XTS 5000 Radio Models are capable of operating in three different voice communication modes:

- Normal Analog (clear voice)
- 3.6KB ASTRO Digital (both clear and coded voice)
- 9.6KB ASTRO 25 Digital (both clear and coded voice) >

The mode of operation is programmed on a channel-by-channel basis. With the coded/clear switch set to the clear mode, the ASTRO Digital XTS 5000 radio is capable of transmitting clear analog voice or clear (unencrypted) ASTRO digital voice, depending on the channel programming. With the coded/clear switch set to the coded mode, the ASTRO Digital XTS 5000 radio will transmit ASTRO Digital Encryption depending on the channel programming. ASTRO digital encryption provides communications security. ASTRO Digital Encryption (operating in encrypted mode while also operating in the 3.6KB or 9.6 KB ASTRO mode) is capable of XL type encryptions; ASTRO Digital Encryption Does not operate with non-XL encryptions.

An Encryption Option is not required for either clear analog operation or clear ASTRO digital operation. Encryption can be ordered with the ASTRO Digital XTS 5000 radio either as a factory installed option or separate from the radio for later field installation. ASTRO Digital XTS 5000 radio functions include selected ASTRO digital signaling and digital speech coding.

Please note that the XTS5000 does NOT support FRED.

CHANNEL SPACING

There are no maximum frequency separation conditions that must be adhered to on the ASTRO Digital XTS5000 Portable Radio Series. Separation of frequencies can be as wide as the allowable sub-band per radio model with no degradation of any performance specifications. If an incorrect antenna is used, degraded performance may be experienced.

FLASHport AFTERMARKET UPGRADES

The ASTRO Digital XTS 5000 Portable Series Radios are part of the FLASHport Program. This means that ASTRO Digital XTS 5000 hardware models can be loaded with different software packages that provide the features and functionalities that your customers require. Three different hardware models are available in each band split.

System Enhancement Options can be loaded at the time of radio purchase or at a later date through the use of software field upgrades (a RS232 cable or USB cable are required for all software upgrades.) The ASTRO Digital XTS 5000 portable can be upgraded electronically in the field with new features in the current system or to new systems operation (contingent upon remaining within the same RF sub-band) by ordering upgrade kits.

Ordering Requirements

Ordering procedure is as follows...

1	**H18UCH9PW N**	**ASTRO XTS 5000 Portable**
1A	**Q806**	**Digital Operation**

1B H38 SmartZone® Operation

1C ETC

1. Order the ASTRO Digital XTS 5000 Portable Series as the main line item (H18UCH9PW7_N).
2. Each hardware model MUST be ordered with one Operating Mode. One Operating Mode for each radio unit ordered. Choose between Analog or Digital Operation.
3. Each Hardware model MUST be ordered with one System Software Package. One System Software Package for each radio unit ordered.
   - The matrix below list available radio wide, conventional features, and standard trunking features for SMARTNET(H37) and SmartZone(H38) System Packages.
   - The SmartZone features listed in the second matrix are available in the SmartZone(H38) package ONLY.
4. Select ANY desired System Enhancement Options
   - System Enhancement Options can be loaded at the time of radio purchase or at a later date through the use of software field upgrades (a RS232 cable or USB cable are required for all software upgrades.)

COMMON SOFTWARE FEATURES SUPPORTED BY H37 "SMARTNET"/H38 "SmartZone"	"Analog Operation"(Q241) Non-Project 25 (3600 Baud)	"ASTRO Digital"(Q806) Non-Project 25 (3600 Baud)	"ASTRO Digital"(H38/Q806/Q361) Project 25 (9600 Baud)
RADIO WIDE FEATURES			
Maximum Modes			
ASTRO Digital XTS 5000 Model I	16/48	16/48	16/48
ASTRO Digital XTS 5000 Model II & III	1000	1000	1000
Analog and Digital Operation	-	Yes	Yes
12.5/20/25 KHz Programmable Channels	Yes	Yes	Yes
Secure Capable	No	Yes	Yes
One Touch Operation	Yes	Yes	Yes
Real Time Clock	Yes	Yes	Yes
Surveillance Mode	Yes	Yes	Yes
Keypad Lock	Yes	Yes	Yes
Radio Lock	Yes	Yes	Yes
Smart Battery	Yes	Yes	Yes
Radio Wide Transmit Inhibit	Yes	Yes	Yes
Time Out Timer	Yes	Yes	Yes
FLASHport	Yes	Yes	Yes
ANALOG CONVENTIONAL FEATURES			
Conventional Features are additional radio wide features beyond those specified above.			
CSQ/PL/DPL	Yes	Yes	Yes
Dual Priority Channel Scan	Yes	Yes	Yes
Adaptive Power Control	Yes	Yes	Yes

Repeater/Talkaround Operation	Yes	Yes	Yes
Scan (Auto, Pre-programmed, Operator Selectable)	Yes	Yes	Yes
Smart PTT	Yes	Yes	Yes
Monitor	Yes	Yes	Yes
DTMF Tone Generation	Yes	Yes	Yes
DIGITAL CONVENTIONAL SIGNALING FEATURES			
These features are APCO Project 25 Conventional Interoperable Features when used in the ASTRO Digital CAI Mode (Q806).			
Unaddressed Voice Call	-	Yes	Yes
Talk Group Call	-	Yes	Yes
Group Call Alert™	-	Yes	Yes
Talk Group Identification (TGID)	-	Yes	Yes
Selective Call (Individual Voice Call)	-	Yes	Yes
Selective Call Decode (Individual Voice Call)	-	Yes	Yes
PTT ID (Individual Identification)	-	Yes	Yes
Call Alert Encode/Decode	-	Yes	Yes
Emergency Alarm w/Channel Revert & Ack.	-	Yes	Yes
Telephone Interconnect	-	Yes	Yes
Unlimited (Model III Only)	-	Future	Future
Selective Radio Inhibit	-	Yes	Yes
Radio Check	-	Yes	Yes
Status/Message	-	Yes	Yes
Trunking Type II Only Features			
Maximum Number of Trunked Systems-20	Yes	Yes	Yes
Talkgroup Calls	No	Yes	Yes
PTT ID (H14 option required)	Yes	Yes	Yes
Call Alert Encode/Decode	Yes	Yes	Yes
Dual Mode Scan	Yes	Yes	Yes
Failsoft by Talkgroup	Yes	Yes	Yes
Telephone Interconnect Encode/Decode	Yes	Yes	Yes
System Wide Call (Receive Only)	Yes	Yes	Yes
Selective Radio Inhibit	Yes	Yes	Yes
Priority Monitor Scan	Yes	Yes	Yes
Dynamic Regrouping	Yes	Yes	Yes
Status/Message	Yes	Yes	Status Only
Private/Enhanced Conversation Encode/Decode	Yes	Yes	Yes
Remote Monitor/Radio Trace	Yes	Yes	No
Reprogram Request	Future	Future	Future

SOFTWARE FEATURES SUPPORTED BY

H38 "SmartZone"			
	"Analog Operation" (Q241)	"ASTRO Digital" (Q806)	"ASTRO Digital" (H37/Q806/Q361)
		Non-Project 25	Project 25
		(3600 Baud)	(9600 Baud)
Trunking Type II Only Features			
Voice on Control	Future	Future	Future
SmartZone Automatic Site Registration	Yes	Yes	Yes
SmartZone RSSI Operation	Yes	Yes	Yes
SmartZone Preferred Site	Yes	Yes	Yes
SmartZone Forced Site Search	Yes	Yes	Yes
SmartZone Site Lock/Unlock	Yes	Yes	Yes
SmartZone Adjacent Control Channel OSW	Yes	Yes	Yes
Emergency Alarm Call Receive Indication	Yes	Yes	Yes

LIMITED MDC FEATURES	
Offered in 6.3	
MDC PTT ID ENCODE/DECODE	YES
MDC Selective Radio Inhibit	Decode ONLY
MDC Call Alert	Yes
MDC Radio Check	Decode ONLY
MDC Voice Selective Call	Yes
MDC Remote Monitor	Decode ONLY
MDC Call Lists (Call Alert / Select Call)	Yes
MDC Emergency	Yes

CONVENTIONAL FACTORY PROGRAMMING

ASTRO Digital XTS 5000 portables ship without customer specific factory programming unless a programming options is specified. **Programming of the following frequencies are not allowed: 772.8000, 774.0000, 856.8000, and 864.0000 MHz**

FREQUENCY AND SQUELCH CODES

Although some models of the ASTRO Digital XTS 5000 are capable of 512 channels, the factory can accommodate the programming of only 128 continuous channels in any one radio. If the programming of more than 128 continuous channels is desired, field programming software must be used. **H477 ADD: Frequency & Squelch Data No Charge**

ZONED OPERATION

This option converts MODE-ONLY ASTRO Digital XTS 5000 portables to Zone Operation radios. A maximum of 16 RX and TX pairs can be placed into a zone. There is a maximum of three zones (48 modes) on the "I" Model,

with zone operation programmed to the programmable top mounted two-position concentric switch. There is a maximum of 16 zones (512 modes) on the "II" and "III" models, and the zones will be programmed to be selected from the keypad. The factory can only accommodate the programming of only 128 continuous channels consisting of any combination of zones and channels and minimum of 32 channels with two zones on the "II" models. **When you ordering H477, H371 must be ordered. H371 ADD: ASTRO Digital XTS 5000 Zone Operation No Charge**

PROJECT 25 ENCRYPTION

When ordering any of the Encryption Algorithm:

- **Must** order the Encryption UCM Hardware (Q159)
  - The DES-OFB and AES encryptions offered are compliant with digital Project 25 standards and does not support analog encryption operation.
  - **Requires** the ASTRO Digital CAI (Q806) to operate the DES-OFB and AES encryption.
- If ordering a Dual Encryption:
  - The non-OFB encryption (XL versions) can be operated in either analog , or CAI digital mode, but will not be Project 25 compliant.
  - **Requires** the Multikey (H869).
- When used in CAI mode, the non-OFB Encryption will not be Project 25 compliant.
  - Encryption UCM Hardware (Q159) module may be ordered without an Encryption Algorithm for later upgrade in the field.

FIELD INSTALLED PROJECT 25 ENCRYPTION

The DES-OFB and AES encryptions offered are compliant with Project 25 standards. Operation of DES-OFB and/or AES encryption requires the ASTRO Digital CAI (Q806) option. Radios can be upgraded via FLASHport to CAI operation.

- If ordering a Dual Encryption:
  - The non-OFB encryption can be operated in analog or CAI mode (only XL versions operate in either digital mode).
  - **Requires** the Multikey (H869).
- When used in the CAI mode, the non-OFB encryption will not be Project 25 compliant.

FIPS 140-2 COMPLIANCE

Encryption Modules equipped with AES are FIPS 140-2 compliant. Further information regarding FIPS 140-2 certification may be found using the following links:

FIPS 140-2 Crypto Module Validation Program (CMVP)

NIST Cryptographic Module Validation Lists

FM INFORMATION

The XTS 5000 portable radio when properly equipped with options H223CC, H223RUGDCE, Q393AN, and Q393RUGDAR are Factory Mutual (FM/CSA) Approved as intrinsically safe for use in Class I, II, III, Division 1, Group C, D, E, F, and G and Nonicendive Class I, Division 2, Group A, B, C and D, when ordered without encryption modules.

The XTS 5000 portables equipped with UCM encryption modules and options H223CD, H223RUGDCF, Q393AP, and Q393RUGDAQ are FM Approved as Intrinsically Safe for use in Class I, II, III, Division 1, Group D, F, G and Nonicendive for use in Class I, Div 2, Group A, B, C, D only.

Type 1 is not offered on either the 700/800 or UHF R2 bands. XTS 5000 FM/CSA approved portable radio models installed with Type 1 encryption module (Q374 or Q400), are intrinsically safe for use in the Nonicendive, Class I, Division 2, Groups A, B, C, D, when used with Motorola FM/CSA approved battery options Q393AV and Q393RUGDAW or H223CP and H223RUGDCW.

ASTRO Text Messaging Service

ASTRO Text Messaging Service will be available on ASTRO 25 XTS 5000, XTS 2500 Portable radios and ASTRO 25 XTL 5000, XTL 2500 Mobile radios. Text Messaging Service (TMS) allows subscriber users to send and receive text messages to other subscribers or dispatch operators. Users can select messages and addresses from a predefined list or enter freeform text messages and addresses via the keypad. Text Messaging Service is available on ASTRO Trunked IV&D Systems and Subscribers. Subscribers must have version R09.00.00 or later of both Customer Programming Software (CPS) and Radio software .

For full Text Messaging functionality, including freeform text messaging and addressing, must order Model III XTS5000 portables. Model II versions support Limited Text Messaging functionality such as selecting predefined messages or addresses from a list programmed in the radio. Text messaging service is NOT supported on Model I Portables.
Ordering requirements for XTS 5000 Portable:

- Requires Model II or Model III XTS 5000
- ASTRO Digital CAI Operation (G806)
- SmartZone Operation (H38)
- ASTRO Project 25 Trunking Software (Q361)
- Packet Data Interface (Q947)

NOTE: *There is no specific option to order for the Text Messaging Service on the subscribers as the functionality is included in the Packet Data option.*

Outdoor Personnel Location Global Positioning Satellite (GPS) Feature

The personnel outdoor location tracking GPS feature enables a dispatcher the ability to locate on-foot patrols and out of the vehicle officers who are involved in life threatening situations. The radio user's GPS position information is sent over the ASTRO 25 Integrated Voice & Data (IV&D) network and is delivered to the dispatch operator using a third party mapping display application at the dispatch center *(Mapping Application is not yet available through Motorola at this time, however an Application Developers Tool Kit is available for 3rd party vendors to use to modify existing applications. See link below for more details.)*

This capability is now available on ASTRO 25 Conventional IV&D Systems and ASTRO 25 Trunking IV&D Systems on XTS 5000 Models I, II, III and Ruggedized with appropriate radio software (see below).

Required equipment for operating in ASTRO 25 Conventional IV&D and ASTRO 25 Trunking IV&D Systems is as follows:

	ASTRO 25 Conventional IV&D	**ASTRO 25 Trunking IV&D**
Radio Software	Version R09.00.00 or later	Version R09.00.00
Customer Programming Software (CPS)	Version R09.00.00 or later (RVN4181)	Version R09.00.00 or later (RVN4181)
ASTRO CAI operation	Q806	Q806
System Enhancement Software	H35 (or H37, H38 in Conventional Mode)	H38
ASTRO Project 25 Trunking Software		Q361

GPS Remote Speaker Microphone/GPS Remote Speaker Microphone with Earjack	HMN4080 or HMN4084	HMN4080 or HMN4084

For fielded XTS 5000 Portables that are already Conventional IMBE Digital Enabled or Trunking IMBE Digital Enabled, see FLASHport upgrade Price Pages to order a software refresh to get the GPS enabled software.

During normal operation the radio's battery capacity will be reduced by 10% to 16% based on 1 location update per minute.

NOT COMPATIBLE with Man -Down Side Connector (NTN7660), Clamshell Battery Holder (Q495, Q496, NTN9177, NTN9183).

For further information refer regarding System Requirements, go to the Location Solutions Price Page at: http://ecat.comm.mot.com/ecat/pricebooks/dup/ALOCATION.htm

NOTE:
The GPS technology uses radio signals from earth orbiting satellites, to establish the location co-ordinates, maximizing your view of clear, unobstructed sky is essential for optimum performance. Where adequate signals from multiple satellites are not available, (usually because you cannot establish a view of a wide area of the sky), the GPS feature of your GPS RSM WILL NOT WORK. Such situations include but are not limited to:

- *In underground locations*
- *Inside of buildings, trains, or other covered vehicles*
- *Under any other metal or concrete roof or structure*
- *Between tall buildings or under dense tree-cover*

PUBLIC SAFETY SPEAKER MICROPHONES (PSM)

The RF switch has been removed from the XTS Radio to provide cost savings on the model. Therefore, the EXTERNAL RF SWITCH must be ORDERED and then ATTACHED to the radio in order for the PSM to operate. A wrench tool must be used to place the RF switch. These kits must be ordered separately. The RF switch and microphones are FM approved.

FCC Information

FCC IDENTIFIER: AZ489FT5806

Name of Grantee: Motorola Solutions, Inc.

Equipment Class: **Licensed Non-Broadcast Transmitter Held to Face**
Notes: **Astro Digital XTS5000 Hand Held Portable Radio**
Modular Type: **Does not apply**

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance	Emission Designator
BH	**90R, 90S**	**764.0 - 870.0**	**3.0**	**1.5 PM**	**16K0F3E**
BH	**90R, 90S**	**764.0 - 870.0**	**3.0**	**1.5 PM**	**11K0F3E**

BH	**90R, 90S**	**764.0 - 870.0**	**3.0**	**1.5 PM**	**8K10F1E**
BH	**90R, 90S**	**764.0 - 870.0**	**3.0**	**1.5 PM**	**8K10F1D**
BH	**90R, 90S**	**764.0 - 870.0**	**3.0**	**1.5 PM**	**20K0F1E**

ALL ITEMS REQUIRE AN EXPORT LICENSE TO BE EXPORTED FROM THE UNITED STATES/CANADA

XTS 5000 Catalog Sheet

XTS Vehicular Adapter (XTVA)

Here is a link for the XTS 5000 notation. http://www.motorola.com/cgiss/portables/xts5000.htm.

ASTRO Advanced Messaging Solution (AMS)

The ASTRO 25 Advanced Messaging Solutions is the latest messaging platform from Motorola Solutions and will replace ASTRO Text Messaging Service (TMS). As a complete end-to-end solution it leverages the core assets of ASTRO 25 IV&D/CID networks, ASTRO 25 radios, Integrated Command Center applications and Unified Network Services. The application allows responders to send/receive messages and run database queries from ASTRO 25 data enabled portable radios, extending real time information access to the field so dispatchers and first responders can be more efficient and achieve safer outcomes.

Provides functional parity with TMS and leverages the PremierOne messaging services platform, offering multiple configurations to enhance and extend core messaging functionality that can include queries and dispatch notifications. Based upon the configuration chosen, ASTRO 25 Advanced Messaging Solution extends Computer Aided Dispatch (CAD) information beyond the vehicle to select ASTRO 25 Portable radios.

Many Public Safety agencies have experienced the benefits of messaging and sharing important information to/from the communication center (dispatch) and vehicles equipped with MDT's. With ASTRO 25 Advanced Messaging Solution we are extending that capability to responders when Outside the Vehicle.

ASTRO Advanced Messaging Solution will be available on XTS 5000 Dual Display Portable radios. Advanced Messaging is NOT supported on XTS 5000 Top Display Portable radios.

Ordering ASTRO Advanced Messaging Solution for XTS 5000 Portable Requires:

- XTS 5000 Dual Display
- ASTRO Digital CAI Operation (Q806)
- P25 Conventional (H35)
- Packet Data Interface (Q947)

OR

· XTS 5000 Dual Display

· ASTRO Digital CAI Operation (Q806)

· SmartZone Operation (H38)

· ASTRO Project 25 Trunking Software (Q361)

· Packet Data Interface (Q947)

NOTE: *There is no specific option to order for the Advanced Messaging Solution on the subscribers as the functionality is included in the Packet Data option. Also, the text messaging functionality carries a per-radio charge on the server side of $50 (one time license fee to access messaging services) per radio. When adding query the fee is $125 per radio. For additional ordering guidelines of the AMS feature which includes the server and radio license fees, please visit -*

http://ecat.comm.mot.com/ecat/pricebooks/dup/MCCP.htm

XTS 5000 - INTENT TO CANCEL MEMO

Models

Description	Nomenclature	APC	Price
PORTABLE ASTRO DIGITAL XTS5000 764-870MHZ 1-3W 48 CHANNEL BASIC	H18UCC9PW5 N	721	$1,933.00
Intent to Cancel, Last Order Date ? October 31, 2013		Intent to Cancel Date:	31-Oct-2013
PORTABLE XTS5000 MODEL II 3X2 KEYPAD DISPLAY 1000 CHANNELS 764-870MHZ	H18UCF9PW6 N	721	$2,458.00
Intent to Cancel, Last Order Date ? October 31, 2013		Intent to Cancel Date:	31-Oct-2013
PORTABLE ASTRO DIGITAL XTS5000 764-870MHZ 1-3W 1000 CHAN FULL FEATURE	H18UCH9PW7 N	721	$2,782.00
Intent to Cancel, Last Order Date ? October 31, 2013		Intent to Cancel Date:	31-Oct-2013

Options

Operation Mode

Description	Nomenclature	APC	Price
ENH: SOFTWARE ANALOG OPERATION	Q241	721	$0.00
MUST order Q241 or Q806.			
ADD: SOFTWARE ASTRO DIGITAL CAI OPERATION	Q806	721	$515.00
INCLUDES the Channel Announcement Feature			

System Enhancement Software

Description	Nomenclature	APC	Price
ENH: TACTICAL RADIO STW-STUN/KILL	H02	721	$75.00
ADD: LINK LAYER RADIO AUTHENTICATION	H345	721	$100.00
ADD: CONVENTIONAL SYSTEMS OPERATION SOFTWARE	H35	721	$800.00
LIMITED feature set for MDC-1200. Please see matrix for list of available features.			
ADD: SMARTNET SYSTEMS SOFTWARE	H37	721	$1,200.00

A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any

APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchased.			
ADD: SMARTZONE SYSTEM SOFTWARE A SOFTWARE or HARDWARE KEY or WACN KEY is REQUIRED to be purchased with any APX Radio operating in trunking. HARDWARE KEY or WACN KEY will still REQUIRE a DVN4046 to be purchesed.	H38	721	$1,500.00
ENH: SMARTZONE OMNILINK MULTIZONE SYSTEM SOFTWARE ONLY compatible with H38 SmertZone and Q806 Digital Operation (required for 3600 baud only trunked systems.) Auto roaming Across zones, zone registration, trespass protection, over the air site alias, 32 preferred sites, FastStart and AllStart Cell Set-up.	Q173	721	$200.00
ENH: PROJECT 25 9600 BAUD TRUNKING SOFTWARE MUST order H38 & Q806, when ordering. INCLUDED at "NO Charge" Q173-OminLink.	Q361	721	$300.00
ENH: MULTICAST VOTING SCAN	Q387	721	$200.00

Systems Enhancement Options

Description	Nomenclature	APC	Price
ENH: OVER THE AIR PROVISIONING POP25 requires UCM & AES encryption for ASTRO Conventional operation. Must have IV&D (Q947) enabled. To do in field POP25 programming must use Advanced System Key (DVN4048A)	G996	721	$100.00
ENH: ENHANCED PTT ID DISPLAY This option is required to display Radio ID or Redio Alias on the display for analog and digitel conventional and trunking configuretions	H14	721	$75.00
ADD: TRUNKED RADIO TRACE AND REMOTE MONITOR	H43	721	$100.00
ENH: ONE TOUCH BUTTON STATUS MESSAGE Quick feature provides access to Call Alert, Status, Message, Selective Call, or Telephone Interconnect. Telephone Interconnect applies to Model III ONLY!	H46	721	$150.00
ENH: RS232, IV&D PACKET INTERFACE	Q947	721	$200.00
ADD: AUTO ROAMING CAPABILITY FOR X-SERIES SUBSCRIBERS	QA04444	655	$100.00

Adapter

Description	Nomenclature	APC	Price
ADD: RF ANTENNA SWITCH (NTN8327) The RF Switch has baan removed from the XTS radio to improve water resistance. Therefore, the external RF switch must be attached to the redio in order for the PSM to operate. A wrench tool(which is not included with this adapter) must be used to place the RF switch. These kits must be ordered separately. REQUIRES ANTENNA. The RF switch and microphones are FM approved. No discount on the RF Adapter Switch if purchased separately from the radio.	Q44	721	$10.00

Algorithm Options

Description	Nomenclature	APC	Price
ADD: DVI-XL ENCRYPTION REQUIRES Q159AA Q159 MUST be orderad(REQUIRED). (Analog 25 khz Only)	H793	721	$520.00
ADD: DVP-XL ENCRYPTION SOFTWARE Q159 MUST BE ORDEREDI! (Analog 25 khz Only)	H797	721	$487.00
ADD: MULTIKEY Multiple encryption software packages can be ordered simultenaously. Multikey is REQUIRED when using more than one encryption elgorithm or ancryption key.	H869	721	$330.00
ADD:AES/DES-XL/DES-OFB ENCRYPTION	Q15	320	$799.00
ADD: XTS5000 UCM HARDWARE ENCRYPTION REQUIRED for ALL Encryption Algorithm or combination of Algorithms listed on page. *DES/XL Secure Analog Trunking NOT available. **ORDER at least 1 Encryption Algorithm Option, which is REQUIRED. *AES Encryption compatible with digital operation ONLY. SUPPORTS up to 4 Algorithms.	Q159	721	$150.00
ADD: ADP PRIVACY NOT AVAILABLE with 3600 Trunking and Analog Conventional software Packages. Compatible with: Q361 (P25 software package); and H35, H37, and H38 software packages ONLY when used with the Q806 CAI software in tha Digital Conventional mode. INCLUDES Multikey REQUIRES Q159. ADP Privacy is not FIPS compliant - ADP Privacy not supported by OTAR - ADP is digital P25 conventional / P25 trunking only	Q406	721	$349.00
ENH: MDC & ASTRO P25 OTAR W/ MULTIKEY Q159 REQUIRED.Tactical Rekay/Tactical OTAR is included and can be usad only whan IV&D is purchased. OTAR is NOT COMPATIBLE with TYPE 1 (Q374 or Q400).	Q498	721	$740.00
ADD: DES, DES-XL, DES-OFB ENCRYPTION			

	Q625	721	$599.00

Q159 MUST BE ORDERED!!.(Analog 25 khz) / DES-OFB (Digital 12.5 khz Only)

ADD: AES ENCRYPTION	Q629	721	$475.00
ADD: ADP WITH DES, DES-XL, DES-OFB	Q668	721	$799.00

Q159 Required! NOT AVAILABLE with 3600 Trunking and Analog Conventional software Packages. Compatible with: Q361 (P25 software package); and H35, H37, and H38 software packages ONLY when used with the Q808 CAI software in the Digital Conventional mode. Includes multikey (H869)

Antenna

Description	Nomenclature	APC	Price
DEL: ANTENNA, 800 MHZ (NAF5037)	H112	721	($10.00)

The standard antenna is 800MHz only, for 700 and 800 MHz operation please order the H123 or Q896 options

ALT: ANTENNA 1/4 WAVE WHIP STUBBY 700/800 MHZ (NAF5084)	H122	721	($5.00)

This option deletes the standard 806-870MHz 1/2 Wavelength Whip Antenna and adds the described antenna. Length: 3.93". The standard antenna is 800MHz only, for 700 and 800 MHz operation please order the H123 or Q696 options.

ALT: ANTENNA 1/2 WAVE 7" WHIP 700/800 MHZ (NAF5080)	Q696	721	$5.00

This option deletes the standard 806-870MHz 1/2 Wavelength Whip Antenna and adds the described antenna. The standard antenna is 800MHz only, for 700 and 800 MHz operation please order the H123 or Q696 options.

Battery

Description	Nomenclature	APC	Price
DEL: BATTERY ALTOGETHER (800/VHF/UHF NNTN4435)	H207	721	($57.00)
ALT: BATTERY LIION 3950 MAH FM IMMERSION , (NNTN7453)	H236	721	$97.00

Li-Ion 3950mAh, IMPRES, Intrinsically Safe, Ruggedized. Requires H499.

ALT: BATTERY IMPRES NIMH FM 1700MAH (NNTN4436)	Q393	721	$47.00

Deletes the Standard NiMH Battery that ships with this radio. Please Reference General Information for ordering instruction and Factory Mutual Information.

ALT: BATTERY IMPRES NIMH FM RUGGED 1700MAH (NNTN4437)	Q393RUGD	721	$47.00

Provides the rugged radio with FM Certification. Please reference general ordering instruction for additional Factory Mutual Information. Requires H499.

ALT: BATTERY FM NIMH ULTRA HIGH CAPACITY 3000MAH (RNN4007)	Q42	320	$68.00

Deletes the standard Battery that ships with the radio. Guaranteed for 70% of capacity 1 year, ONLY.

ALT: BATTERY HOLDER CLAMSHELL BLACK (NTN9177)	Q495	721	$0.00

Portable radio software version R07.00.002 or greater is REQUIRED for use with this product. Clamshell battery requires 12 "AA" Alkaline batteries to operate portable. "AA" batteries are NOT included. This battery is NOT FM approved or Intrinsically safe. This battery will automatically reduce the radio's RF power to 2 Watts. Carry case available. Clamshells do not ship with a clip, clip must be ordered separate. The NTN8288B belt clip will work with the clam shell battery.

ALT: BATTERY HOLDER CLAMSHELL ORANGE (NTN9183)	Q496	721	$0.00

Portable radio software version R07.00.002 or greater is REQUIRED for use with this product. Clamshell battery requires 12 "AA" Alkaline batteries to operate portable. "AA" batteries are NOT included. This battery is NOT FM approved or Intrinsically safe. This battery will automatically reduce the radio's RF power to 2 Watts. Carry case available.Clamshells do not ship with a clip, clip must be ordered separate. The NTN8288B belt clip will work with the clam shell battery.

ALT: BATTERY LITHIUM ION IMPRES THIN 2750MAH (NTN9862)	Q712	721	$93.00

DELETES the standard NICAD Battery that ships with the radio. REQUIRES new chargers including: NTN1667, NTN1873, WPLN4108 R, WPLN4111, WPLN4130, WPLN4206 & XTVA Rev "F"

ALT:BATTERY LITHIUM IMPRES HIGH CAPACITY 4150MAH (NNTN6034)	QA00212	721	$93.00

ALT:BATTERY LITHIUM IMPRES HIGH CAPACITY 4150MAH (NNTN8034). REQUIRES new chargers including: NTN1667, NTN1873, WPLN4108 R, WPLN4111, WPLN4130, WPLN4206 & XTVA Rev "F"

ALT: IMPRES STD IP54 NIMH 3000MAH	QA01541	721	$68.00

PMMN4093

Belt Clip(s)

Description	Nomenclature	APC	Price
DEL: DETACHABLE 2 1/2" BELT CLIP (NTN8266)	H301	721	($10.00)
ADD: 3 INCH BELT CLIP	H315	721	$11.25

Conventional Factory Programming

Description	Nomenclature	APC	Price
ADD:CONVENTIONAL FACTORY PROGRAMMING 160 CHANNELS	H477	721	$0.00

Refer to Frequency and Squelch Section in the General Information Section above.

Data Cable (s)

Description	Nomenclature	APC	Price
ADD: DATA CABLE	Q157	721	$150.00

This option gives you the RS232 programming cable (RKN4106)and requires Q947 Option.

Labels

Description	Nomenclature	APC	Price
ADD: ALTERNATE DISPLAY LABEL	Q768	721	$0.00

Includes 1 metallic red, metallic orange, metallic blue, metallic yellow, and reflective silver display label. ONLY available on Models 2 or 3.

Programming

Description	Nomenclature	APC	Price
ENH: FCC CONV FPP AND CLONE	Q53	320	$150.00

Compatible with Digitel Conventional Operation only - requires H35. Compatible with Model 3 radios only. The connector accessory key (PMTN4113) is required for utilizing FPP.
*When ordering the FPP option you only get 240 channels.

Ruggedized Housing

Description	Nomenclature	APC	Price
ALT: SUBMERSIBLE - 6 FT. 2 HOURS (RUGGED)	H499	721	$250.00

Delta T reting (6 ft- 2hrs). This option will ganerate the standard ruggedized battery.

ALT: HOUSING YELLOW	H64	721	$25.00

H499 is raquired when ordering this option.

Service Options

Description	Nomenclature	APC	Price
ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	H885BK	185	$84.00

Provides 2 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ENH: 3 YEAR REPAIR SERVICE ADVANTAGE	H886AQ	185	$125.00

Provides 3 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ADD: 3 YR RSA COMPREHENSIVE	HA00022AB	185	$228.00

Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ADD: 3YR REPAIR SERVICE ADVANTAGE COMPREHENSIVE (INCLUDING ENCRYPTION)	HA00025AA	185	$262.00

Provides for extended hardware repair coverage and chemical, liquid, and other physical damage on your Motorola portable and mobile subscriber radios. Comprehensive coverage starts from the first day the radio is put into use. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.

ENH: CANADA 3 YR ENCR EXT WARR	HA00048	386	$200.00
Upgrades the standard warranty period to a full three (3) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.			
ENH: CANADA 5 YR ENCR EXT WARR	HA00049	386	$244.00
Upgrades the standard warranty period to a full five (5) years of hardware service coverege on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.			
ENH: XTS5000 CANADA 3 YR EXT WARR	HA00050	386	$159.00
Upgrades the standard warranty period to a full three (3) years of hardware service coverege on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.			
ENH: XTS5000 CANADA 5 YR EXT WARR	HA00051	386	$212.00
Upgrades the standard warranty period to a full five (5) years of hardware service coverage on the internal components of your radio equipment. Repairs will be made only at Motorola authorized service centers. No discounts are allowed on this option.			
ENH: 1 YR ENCRYPTED REPAIR SERVICE ADVANTAGE	Q57	185	$51.00
Provides for extended hardware repair coverage, including encryption, beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: 2 YEAR ENCRYPTED REPAIR SERVICE ADVANTAGE	Q58	185	$97.00
Provides 2 years of extended hardware repair coverage, including encryption, beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
3 YR ENCRYPTED REPAIR SERVICE ADVANTAGE	Q58AK	185	$145.00
Provides for extended hardware repair coverage, including encryption, beginning after the standard warranty period. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: 1 YEAR REPAIR SERVICE ADVANTAGE	Q884	185	$44.00
Provides 1 year of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH:4 YEAR REPAIR SERVICE ADVANTAGE	Q887	185	$162.00
Provides 4 years of extended hardware repair coverage beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			
ENH: 3 YR ENCRY REPAIR SERVICE	QA01540	185	$145.00
Provides 3 years of extended hardware repair coverege, including encryption, beginning after the standard warranty period expires. Repairs will be made only at the designated Motorola repair depot. Local services are not included. Motorola will pay the inbound shipping charges only with use of the Motorola designated delivery service. Motorola will pay for outbound shipping via Motorola's normal shipping methods. No discounts are allowed on this option.			

Software Encryption

Description	Nomenclature	APC	Price
ADD: ADP PRIVACY	Q667	721	$10.00
NOT AVAILABLE with 3600 Trunking and Analog Conventional software Packages. Compatible with: Q361 (P25 software package); and H35, H37, and H38 software packages ONLY when used with the Q806 CAI software in the Digital Conventional mode. NOT COMPATIBLE with: Q159 (UCM Hardware Encryption. ADP Privacy is not FIPS compliant - ADP Privacy not supported by OTAR - ADP is digital P25 conventional / P25 trunking only			

Zone Operation

	Nomenclature	APC	Price
ADD: ZONE OPERATION MUST order H477 with this option. Refer to Zoned Operation Section above in the General Information.	H371	721	$0.00

Manual(s)

Description	Nomenclature	APC	Price
ADD: USER GUIDE MANUAL CD	H88	721	$0.00

Packaging

Description	Nomenclature	APC	Price
ADD: BULK PACKAGING Ships order in multi-unit (10 pack) boxes.	H415	721	$0.00
ADD: SINGLE PACKAGING Ships orders in single unit boxes.	H842	721	$0.00

Test Results

Description	Nomenclature	APC	Price
ADD: TEST RESULT PRINT OUT	H799	721	$0.00

Accessories

Adapter

Description	Nomenclature	APC	Price
3.5 MM JACK ADAPTER WITH QUICK DISCONNECT LATCH For use with 1, 2 & 3 wire earpiece.	BDN6676	742	$52.50

Antenna

Description	Nomenclature	APC	Price
ANTENNA, 806-870 MHZ 1/2 WAVELENGTH WHIP	NAF5037	476	$35.75
ANTENNA, 806-941MHZ 1/4 WAVELENGTH WHIP (STUBBY)	NAF5042	476	$25.50
ANTENNA 1/2 WAVE 7" WHIP 700/800 MHZ	NAF5080	555	$35.00
7/800 MHZ STUBBY ANTENNA	NAF5084	721	$25.50

Battery

Description	Nomenclature	APC	Price
IMPRES NIMH 1800 MAH BATT	NNTN4435B	453	$121.00
BATT 1700 MAH FM NIMH	NNTN4436B	453	$140.00
BATTERY IMPRES NIMH, 1700 MAH. INTRINSICALLY SAFE, RUGGEDIZED IMPRES batteries provide for automatic and adaptive reconditioning in IMPRES chergers, provide end of service life display, and real-time battery information when used with the IMPRES MUC with display.	NNTN4437B	453	$145.00
BATTERY IMPRES LI-ION 4150 MAH	NNTN6034A	453	$155.00
BATTERY IMPRES LI-ION 3950MAH FM RUGGED Li-Ion 3950mAh, IMPRES, Intrinsically Safe, Ruggedized	NNTN7453A	453	$169.00
BATTERY NIMH, 1800 MAH	NTN8923 R	453	$115.00
BAT HOLDER CLAMSHELL BLK Portable radio software version R07.00.02 or greater is required for use with this product. Clamshell battery requires 12 "AA" alkaline batteries to operate portable. "AA" batteries are NOT included. This battery is NOT FM approved or intrinsically safe. This battery will automatically reduce the radio's RF power to 2watts.	NTN9177	453	$66.00
BAT HOLDER CLAMSHELL ORG	NTN9183	453	$50.00

Portable radio software version R01.20 or greater is required for use with this product.

Clamshell battery requires 12 "AA" alkaline batteries to operate portable. "AA" batteries are NOT included. This battery is NOT FM approved or Intrinsically safe. This battery will automatically reduca tha radio's RF power to 2watts.			
BATTERY IMPRES LION 2750 MAH	NTN9862C	453	$150.00
IMPRES batteries provide for automatic and adaptive reconditioning in IMPRES chargers, provide end of service life display, and real-time battery information when used with the IMPRES MUC with display.			
BATTERY, IMPRES, NIMH, 3000 MAH	PMNN4093A	453	$125.00
PMNN4093A battery warranty to maintain 70% reted capacity for 12 monthe.			
BATTERY 3000 MAH FM NIMH	RNN4007 R	453	$150.00
Guaranteed for 70% of capacity 1 year, only Compatible with NTN1177/4796, 1166 and all TRI-Chem Chargers.			

Battery Maintenance Systems

Description	Nomenclature	APC	Price
NA FLEET MANAGEMENT LICENSE KEY	HKVN4036A	785	$489.00
IMPRES BATTERY DATA READER	NNTN7392	785	$250.00
Provides IMPRES battery users ability to access key usage data via PC. Competible w/all IMPRES battaries (HT/PRO,TRBO & APX adapter included)			

Belt Clip(s)

Description	Nomenclature	APC	Price
3" PLASTIC BELT CLIP ATTACHMENT	HLN6875A	721	$12.00

Data Compiled 16-May-2013 using DUP and all prices in USD

Timeline for Contract No. 12-84-057:
Refurbished Toner Cartridges Only, Computer Software, Hardware, Peripherals, Supplies and Related Equipment
For
Cook County Various Departments

May 7, 2013:	Dee and Ed met with Mike Kelly, from MCPC, about having Contract No. 12-84-057 put on the CC Marketplace.
May 7, 2013,10:00 AM :	I emailed Mike and gave him the contact person for the Office of Contract Compliance. I also let him know I will get back to him later on in the day about the item numbers.
May 7, 2013, 5:03 PM:	I emailed Mike and let him know I reviewed the attached list of MCPC items on the CC Marketplace and I requested him to clarify why I am reviewing only 69 items and not 75 items that I reviewed back in January 2013, clarify what "1-2 Weeks", "Available", "Call" and "Obsolete" mean and clarify what the obsolete items are.
May 5, 2013, 6:48 AM:	Mike emailed me and let me know he answered my clarification questions and he will follow up with replacements for the obsolete part numbers.
May 8, 2013, 11:59 AM:	I forwarded Dee Mike's clarification answers and I asked Dee about how to proceed with the obsolete items.
May 8, 2013, 12:48 PM:	Dee emailed me back letting me know to follow the normal process.
May 8, 2013, 2:00 PM:	I left a voice message on Mike's phone about the obsolete items and his clarification answers.
May 8, 2013, 5:20 PM:	Mike emailed me letting me know MCPC made exterior packaging changes to the boxes which resulted in creating new part numbers. He went on and stated the toner cartridges, specifications, pricing to the County and product descriptions on the website all remain exactly the same. He stated he will provide an update on MCPC's progress with replacing the obsolete items on CC Procurement's website tomorrow. He also informed me he can not provide clarification on CC Marketplace for the "1-2 Weeks", "Available", and "Call" because the change would affect all of MCPC's Ecommerce customers nationwide.
May 13, 2013, 5:48 PM:	I emailed Mike following up on his email from May 8th where he will provide me with an update on MCPC's progress with replacing the obsolete items on CC Procurement's website. I reminded him if part numbers are changing, the changes need to be refleeted in the amendment.
May 13, 2013, 6:13 PM:	Mike email me letting me know to go onto the marketplace and check for the obsolete items beeause he did not see any obsolete items.
May 14, 2013:	Verbally requested Steve to print me the CC Marketplace for MCPC.
May 15, 2013, 6:21 PM:	Mike emailed me wondering if I had a chance to check the CC Marketplace to see if any obsolete items remain.
May 15, 2013, 1:32 PM:	I emailed Steve reminding him I do not have "Production Rights" and "Administration Rights" on the CC Marketplace and I requested a print out of the items on the CC Marketplace for MCPC. I let Steve know I am available for training whenever he has the time.
May 15, 2013, 2:36 PM:	Steve sent me an email sending me the MCPC marketplace information. He also stated he will set me up as an admin in the test and production sites and show me how to do print the information.
May 16, 2013	Had Angela and Aaron review the MCPC marketplace information and they noticed half the part numbers listed are different from what is in the original contract.

May 17, 2013, 4:44 PM:	I emailed Mike and let him know over half the contract items listed on MCPC's CC Marketplace website have different part numbers starting with IVR and different prices. I requested a spreadsheet indicating what the previous part numbers, descriptions and prices and what the new part numbers, descriptions and prices will be. I reminded him that vendors are not allowed to raise their unit price. I also let him know some of the items are missing the OEM HP replacement part numbers and they are missing the list of printers the cartridges are used on. I also requested clarification on what MCPC plans on doing with the 5 obsolete cartridges and a list of obsolete items that MCPC will not be offering a replacement for.
May 21, 2013, 6:12 AM:	Mike emailed me letting me know he inserted answers to my questions and that he has attached a revised bid sheet with a new column L that has the new toner part numbers.
May 22, 2013, 1:42 PM:	I emailed Aaron requesting that he develop an Amendment No. 2 to reflect the changes MCPC made to their part numbers.
May 22, 2013, 7:05 PM:	Mike emailed me letting me know MCPC is working on the product descriptions for the new part numbers that will appear on the CC Marketplace. He requested I review the attached sample description and let him know if it contains sufficient information.
May 23, 2013, 9:40 AM:	I emailed Mike letting him know I review the sample product description and I requested several changes to the description such as adding the phrase "Replaces HP Q2613A", adding the number of cartridges per box, adding the word "page" after the yield amount, adding IVR in front of the part number, adding the list of printers the cartridges are used on and clarifying what (13A) means.
May 23, 2013, 12:58 PM:	Mike emailed me letting me know he will make all the changes except the 13A due to HP commonly uses it as a brief description of their cartridges.
June 4, 2013, 7:46 AM:	Mike emailed me requesting the status of the amendment.
June 4, 2013, 11:04 AM:	Aaron emailed me wondering if the attached bid sheet Mike sent is what he should use to develop the amendment. Aaron also had concerns that some of the prices may have changed.
June 4, 2013:	Aaron and I met with Dee and Dee said it was O.K. to refer to the spreadsheet in the amendment. Aaron said he would work on the amendment today. Dee also requested a time line on this amendment.
June 7, 2013:	Dee requested I email Mike and request the IVR part numbers.
June 7, 2013:	Aaron spoke with Jacinta requesting amendment language for MCPC's amendment and Jacinta provide Aaron with the language.
June 10, 2013, 9:19 AM:	I emailed Mike and let him know Procurement is in the process of finalizing the amendment but before it can be finalized I need clarification on if 12 other MCPC/DPC part numbers have changed to IVR part numbers.
June 10, 2013, 12:21 PM:	Mike emailed me letting me know he will check into the part numbers and also the status of the ecommerce site product descriptions. He also requested to know what paperwork needs to be signed for the amendment process.
June 10, 2013, 1:53 PM:	Dee emailed Mike letting him know Procurement needs all the IVR part numbers before the amendment can be sent to him. She also reminded him the amendment information along with the original contract information must correspond with the information MCPC is updating on the website in order for Procurement to approve the amendment once MCPC has signed and returned the amendment.
June 10, 2013, 5:11 PM:	Mike email Dee and I apologizing for the missing IVR part numbers. He made the revisions and attached a revised spreadsheet with the corresponding IVR part numbers listed. He also informed us that MCPC's ecommerce team is almost done with the product descriptions and hope to have the site ready for Procurement's review in the next couple of days.

June 10, 2013, 8:02 PM:	Dee emailed Mike thanking him for the information and letting him know Procurement will update the amendment and send the amendment shortly to him.
June 11, 2013:	I proofed Amendment No. 2 that Aaron developed and found no changes needed.
June 11, 2013:	Gave Dee the Amendment No. 2 for her review to send to MCPC.

EXHIBIT 2

Cook County Schedule of Compensation (Line Item Price Proposal)

MOTOROLA SOLUTIONS

Motorola Solutions, Inc.
1303 E. Algonquin Road
Schaumburg., IL 60196

Telephone: 1847-576-5000
Fax: 1847-576-4883

May 22, 2013

Ms. Susie Park
Director of Financial Control
Office of the President
Cook County Department of Homeland Security & Emergency Management
69 W. Washington, Suite 2630
Chicago, IL 60602

Dear Ms. Park:

This letter serves to confirm the discounts extended to Cook County for radios and accessories that are purchased utilizing the attached Northwest Central Purchasing Agreement.

The Northwest Central Purchasing Agreement allows for APX mobile and portable radios to be purchased at 25% discount from list price and APX subscriber accessories to be purchased at 25% discount from list price. However, Motorola has agreed to honor the previous contract discounts granted to Cook County and will extend the 32% discount (25% NWCD contract plus 7% 2013 purchasing incentive) from list price on all APX mobile and portable radios. Discounts on APX subscriber accessories will also remain at 31% for Cook County. No discounts are given on subscriber extended warranties. Subscriber replacement "parts" are discounted at 29% from list price. These Cook County promotional discounts will remain in effect for APX radio and APX accessory purchases that are contracted and shipped to Cook County on or before December 31, 2013.

Discounts on XTS & XTL radio subscribers and accessories shall be discounted as per the attached Northwest Central Purchasing Agreement and remain at 35% from list price. No discounts are given on subscriber extended warranties and subscriber replacement "parts" are discounted at 29% from list price.

Motorola Solutions is committed to working with Cook County on a successful partnership and to earn the continued trust and satisfaction of Cook County. We look forward to continuing the Radio Interoperability project and our close partnership. Please don't hesitate to call me if you have any questions.

Best Regards,

Chris Channell

Sr. Account Manager
Motorola Solutions Inc.
847-489-9379

Exhibit C-9
External Agency Purchasing Agreement
December 13, 2011

As applicable by law, definitions and terms and conditions listed below, other eligible authorized Illinois agencies may utilize this contract for purchases.

~~"Authorized Purchaser" means any State of Illinois governmental agency or local political~~ subdivision within the State of Illinois. Except as set forth herein, Authorized Purchasers may be eligible to purchase equipment pursuant to the terms and conditions of the Agreement, if such Authorized Purchasers are authorized, by law or their governing bodies, to execute such purchases. Said purchases shall be made upon the issuance of a purchase order or other document directly from the Authorized Purchaser to Motorola. Each order must refer to this Agreement and must specify the pricing and delivery terms. Notwithstanding any additional or contrary terms in the order, the applicable provisions of this Agreement (except for delivery, passage of title and risk of loss to Equipment, warranty commencement, and payment terms) will govern the purchase and sale of the additional Equipment or licensing of Software. For all Equipment purchased by Authorized Purchasers, title and risk of loss will pass at shipment. Title to Software shall never pass, warranty will commence upon delivery, and payment shall be due within thirty (30) days after the invoice date. Motorola will send the Authorized Purchaser an invoice as the additional Equipment is shipped or Software is licensed. Mobiles and portables include a standard one (1) year warranty.

The applicable discount for Motorola equipment is:

- Motorola APX Mobile & Portable Radio Units APC's :

  471, 795, 755, 185, 127, 481, 655, 798, 527, 656, and 207.

  At 25% discount from the current list price. APX accessories 25% discount from the current list price.

- Motorola XTS & XTL Mobile & Portable Radio Units APC's :

  687, 785, 271, 185, 205, 453, 514, 500, 127, 721, and 476

  At 35% discount from current list price. XTS/XTL accessories 35% discount from the current list price.

EXHIBIT 3

Northwest Central 911 System Contract No. 10-17184/LF/CMB

Exhibit C-9
External Agency Purchasing Agreement
December 13, 2011

As applicable by law, definitions and terms and conditions listed below, other eligible authorized Illinois agencies may utilize this contract for purchases.

"Authorized Purchaser" means any State of Illinois governmental agency or local political subdivision within the State of Illinois. Except as set forth herein, Authorized Purchasers may be eligible to purchase equipment pursuant to the terms and conditions of the Agreement, if such Authorized Purchasers are authorized, by law or their governing bodies, to execute such purchases. Said purchases shall be made upon the issuance of a purchase order or other document directly from the Authorized Purchaser to Motorola. Each order must refer to this Agreement and must specify the pricing and delivery terms. Notwithstanding any additional or contrary terms in the order, the applicable provisions of this Agreement (except for delivery, passage of title and risk of loss to Equipment, warranty commencement, and payment terms) will govern the purchase and sale of the additional Equipment or licensing of Software. For all Equipment purchased by Authorized Purchasers, title and risk of loss will pass at shipment. Title to Software shall never pass, warranty will commence upon delivery, and payment shall be due within thirty (30) days after the invoice date. Motorola will send the Authorized Purchaser an invoice as the additional Equipment is shipped or Software is licensed. Mobiles and portables include a standard one (1) year warranty.

The applicable discount for Motorola equipment is:

- Motorola APX Mobile & Portable Radio Units APC's :

  471, 795, 755, 185, 127, 481, 655, 798, 527, 656, and 207.

  At 25% discount from the current list price. APX accessories 25% discount from the current list price.

- Motorola XTS & XTL Mobile & Portable Radio Units APC's :

  687, 785, 271, 185, 205, 453, 514, 500, 127, 721, and 476

  At 35% discount from current list price. XTS/XTL accessories 35% discount from the current list price.

Communications System Agreement

Motorola, Inc. ("Motorola") and Northwest Central 911 System ("Customer") enter into this "Agreement," pursuant to which Customer will purchase and Motorola will sell the System, as described below. Motorola and Customer may be referred to individually as a "Party" and collectively as the "Parties." For good and valuable consideration, the Parties agree as follows:

Section 1 EXHIBITS

The exhibits listed below are incorporated into and made a part of this Agreement. In interpreting this Agreement and resolving any ambiguities, the main body of this Agreement takes precedence over the exhibits and any inconsistency between Exhibits A through G will be resolved in their listed order.

Exhibit A	Motorola "Software License Agreement"
Exhibit B	"Payment Schedule"
Exhibit C	"Technical and Implementation Documents"
C-1	"System Description" dated __December 14, 2010
C-2	"Equipment List" dated __ December 14, 2010
C-3	"Statement of Work" dated __ December 14, 2010
C-4	"Acceptance Test Plan" or "ATP" dated _ December 14, 2010
C-5	"Performance Schedule" dated _ December 14, 2010
Exhibit D	Addendum to Motorola CSA
Exhibit E	Service Statement(s) of Work and "Service Terms and Conditions" (if applicable)
Exhibit F	"System Acceptance Certificate"
Exhibit G	"Software Support Statement of Work"
Exhibit H	Motorola "Standard Managed Zone Core Agreement"
Exhibit I	STARCOM21 User Agreement and System Management Agreement

Section 2 DEFINITIONS

Capitalized terms used in this Agreement have the following meanings:

2.1. "Acceptance Tests" means those tests described in the Acceptance Test Plan.

2.2. "Administrative User Credentials" means an account that has total access over the operating system, files, end user accounts and passwords at either the System level or box level. Customer's personnel with access to the Administrative User Credentials may be referred to as the Administrative User.

2.3. "Beneficial Use" means when Customer first uses the System or a Subsystem for operational purposes (excluding training or testing).

2.4. "Confidential Information" means any information that is disclosed in written, graphic, verbal, or machine-recognizable form, and is marked, designated, or identified at the time of disclosure as being confidential or its equivalent; or if the information is in verbal form, it is identified as confidential at the time of disclosure and is confirmed in writing within thirty (30) days of the disclosure. Confidential Information does not include any information that: is or becomes publicly known through no wrongful act of the receiving Party; is already known to the receiving Party without restriction when it is disclosed; is or becomes, rightfully and without breach of this Agreement, in the receiving Party's possession without any obligation restricting disclosure; is independently developed by the receiving Party without breach of this Agreement; or is explicitly approved for release by written authorization of the disclosing Party.

2.5. "Contract Price" means the price for the System, excluding applicable sales or similar taxes and freight charges.

2.6. "Effective Date" means that date upon which the last Party executes this Agreement.

2.7. "Equipment" means the equipment that Customer purchases from Motorola under this Agreement. Equipment that is part of the System is described in the Equipment List.

2.8. "Equipment Lease-Purchase Agreement" means the agreement by which Customer finances all or a portion of the Contract Price

2.9. "Force Majeure" means an event, circumstance, or act of a third party that is beyond a Party's reasonable control (e.g., an act of God, an act of the public enemy, an act of a government entity, strikes or other labor disturbances, hurricanes, earthquakes, fires, floods, epidemics, embargoes, war, and riots).

2.10. "Infringement Claim" means a third party claim alleging that the Equipment manufactured by Motorola or the Motorola Software directly infringes a United States patent or copyright.

2.11. "Master Contract" means the Agreement between Motorola and the State of Illinois, known as the STARCOM21 Contract, including any and all amendments, revisions or replacements thereof as may now exist or be agreed upon from time to time.

2.12. "Motorola Software" means Software that Motorola or its affiliated company owns.

2.13. "Motorola's Standard Managed Zone Core Agreement" sets forth the terms and conditions for the Customer to access the STARCOM21 Network.

2.14. "Non-Motorola Software" means Software that another party owns.

2.15. "Open Source Software" (also called "freeware" or "shareware") means software that has its underlying source code freely available to evaluate, copy, and modify.

2.16. "Proprietary Rights" means the patents, patent applications, inventions, copyrights, trade secrets, trademarks, trade names, mask works, know-how, and other intellectual property rights in and to the Equipment and Software, including those created or produced by Motorola under this Agreement and any corrections, bug fixes, enhancements, updates or modifications to or derivative works from the Software whether made by Motorola or another party.

2.17. "Software" means the Motorola Software and Non-Motorola Software, in object code format that is furnished with the System or Equipment.

2.18. "Specifications" means the functionality and performance requirements that are described in the Technical and Implementation Documents.

2.19. "Subsystem" means a major part of the System that performs specific functions or operations. Subsystems are described in the Technical and Implementation Documents.

2.20. "System" means the Equipment, Software, and incidental hardware and materials that are combined together into an integrated system; the System is described in the Technical and Implementation Documents.

2.21. "System Acceptance" means the Acceptance Tests have been successfully completed.

2.22. "Warranty Period" means one (1) year from the date of System Acceptance or Beneficial Use, whichever occurs first.

Section 3 SCOPE OF AGREEMENT AND TERM

3.1. SCOPE OF WORK. Motorola will provide, install and test the System, and perform its other contractual responsibilities, all in accordance with this Agreement. Customer will perform its contractual responsibilities in accordance with this Agreement.

3.2. CHANGE ORDERS. Either Party may request changes within the general scope of this Agreement. If a requested change causes an increase or decrease in the cost or time required to perform this Agreement, the Parties will agree to an equitable adjustment of the Contract Price, Performance Schedule, or both, and will reflect the adjustment in a change order. Neither Party is obligated to perform requested changes unless both Parties execute a written change order.

3.3. TERM. Unless terminated in accordance with other provisions of this Agreement or extended by mutual agreement of the Parties, the term of this Agreement begins on the Effective Date and continues until the date of Final Project Acceptance or seven years after System Acceptance, whichever occurs last. Notwithstanding anything contained herein to the contrary, in the event of a termination of the Master Contract pursuant to the terms thereof of otherwise, this Agreement shall terminate on the same date. In such event, the Customer will be liable to pay Motorola for the portion of the Contract Price attributable to the Equipment and/or Software delivered, and all services performed, on or before the effective date of the termination.

3.4. ADDITIONAL EQUIPMENT OR SOFTWARE. For three (3) years after the Effective Date, Customer may order additional Equipment or Software if it is then available. Each order must refer to this Agreement and must specify the pricing and delivery terms. Notwithstanding any additional or contrary terms in the order, the applicable provisions of this Agreement (except for pricing, delivery, passage of title and risk of loss to Equipment, warranty commencement, and payment terms) will govern the purchase and sale of the additional Equipment or Software. Title and risk of loss to additional Equipment will pass at shipment, warranty will commence upon delivery, and payment is due within twenty (20) days after the invoice date. Motorola will send Customer an invoice as the additional Equipment is shipped or Software is licensed. Alternatively, Customer may register with and place orders through Motorola Online ("MOL"), and this Agreement will be the "Underlying Agreement" for those MOL transactions rather than the MOL On-Line Terms and Conditions of Sale. MOL registration and other information may be found at http://www.motorola.com/businessandgovernment/ and the MOL telephone number is (800) 814-0601.

3.5. MAINTENANCE SERVICE. During the Warranty Period, in addition to warranty services, Motorola will provide maintenance services for the Equipment and support for the Motorola Software pursuant to the Statement of Work set forth in Exhibit D. Those services and support are included in the Contract Price. If Customer wishes to purchase additional maintenance and support services for the Equipment during the Warranty Period, or any maintenance and support services for the Equipment either during the Warranty Period or after the Warranty Period, the description of and pricing for the services will be set forth in a separate document. If Customer wishes to purchase extended support for the Motorola Software after the Warranty Period, it may do so by ordering software subscription services. Unless otherwise agreed by the parties in writing, the terms and conditions applicable to those maintenance, support or software subscription services will be Motorola's standard Service Terms and Conditions, together with the appropriate statements of work. Notwithstanding the foregoing to the contrary, Customer agrees that it will purchase (a) a Software Maintenance Agreement for any consoles that are part of the Equipment ("Consoles") upon expiration of the Warranty Period and renew it annually for as long as any Consoles owned by Customer are connected to the STARCOM21 network, and (b) any and all associated hardware changes and/or upgrades required as a result of software releases issued pursuant to the Software Maintenance Agreement. The terms and conditions applicable to the Software Maintenance Agreement will be Motorola's standard Service Terms and Conditions, together with the appropriate statement of work which is attached hereto as Exhibit E. The price of the Software Maintenance Agreement and the term of the pricing validity for the Software Maintenance Agreement shall be listed in the Pricing Summary. Labor and hardware is quoted and priced separately based on the requirements of each software release.

3.6. MOTOROLA SOFTWARE. Any Motorola Software, including subsequent releases, is licensed to Customer solely in accordance with the Software License Agreement. Customer hereby accepts and agrees to abide by all of the terms and restrictions of the Software License Agreement.

3.7. NON-MOTOROLA SOFTWARE. Any Non-Motorola Software is licensed to Customer in accordance with the standard license, terms, and restrictions of the copyright owner on the Effective Date unless the copyright owner has granted to Motorola the right to sublicense the Non-Motorola Software

pursuant to the Software License Agreement, in which case it applies and the copyright owner will have all of Licensor's rights and protections under the Software License Agreement. Motorola makes no representations or warranties of any kind regarding Non-Motorola Software. Non-Motorola Software may include Open Source Software. All Open Source Software is licensed to Customer in accordance with, and Customer agrees to abide by, the provisions of the standard license of the copyright owner and not the Software License Agreement. Upon request by Customer, Motorola will use commercially reasonable efforts to determine whether any Open Source Software will be provided under this Agreement; and if so, identify the Open Source Software and provide to Customer a copy of the applicable standard license (or specify where that license may be found); and provide to Customer a copy of the Open Source Software source code if it is publicly available without charge (although a distribution fee or a charge for related services may be applicable).

3.8. SUBSTITUTIONS. At no additional cost to Customer, Motorola may substitute any Equipment, Software, or services to be provided by Motorola, if the substitute meets or exceeds the Specifications and is of equivalent or better quality to the Customer. Any substitution will be reflected in a change order.

3.9. OPTIONAL EQUIPMENT OR SOFTWARE. This paragraph applies only if a "Priced Options" exhibit is shown in Section 1, or if the parties amend this Agreement to add a Priced Options exhibit. During the term of the option as stated in the Priced Options exhibit (or if no term is stated, then for one (1) year after the Effective Date), Customer has the right and option to purchase the equipment, software, and related services that are described in the Priced Options exhibit. Customer may exercise this option by giving written notice to Seller which must designate what equipment, software, and related services Customer is selecting (including quantities, if applicable). To the extent they apply, the terms and conditions of this Agreement will govern the transaction; however, the parties acknowledge that certain provisions must be agreed upon, and they agree to negotiate those in good faith promptly after Customer delivers the option exercise notice. Examples of provisions that may need to be negotiated are: specific lists of deliverables, statements of work, acceptance test plans, delivery and implementation schedules, payment terms, maintenance and support provisions, additions to or modifications of the Software License Agreement, hosting terms, and modifications to the acceptance and warranty provisions.

3.10. CONTINGENCIES. This Agreement is contingent upon the following: Customer securing all FCC and other approvals necessary for the existing NWCDS frequency licenses to accommodate increased coverage requirements and capacity prior to the Effective Date; the STARCOM21 Oversight Committee approving Customer's access to the STARCOM21 Network prior to the Effective Date; Motorola entering into an acceptable site lease with Customer prior to the Effective Date; and Motorola entering into a Services Agreement with Customer, subject to mutually acceptable terms and conditions, to address the system management services for STARCOM21 to be performed by Customer, through its designated employee Jim Hunt, subject to approval, if any, of the State of Illinois.

3.11. MOTOROLA'S STANDARD MANAGED ZONE CORE AGREEMENT, STARCOM21 USER AGREEMENT and the STARCOM21 SYSTEM MANAGEMENT AGREEMENT. The Customer hereby accepts and agrees to execute upon System Acceptance (or Beneficial Use, if Beneficial Use occurs prior to System Acceptance) and abide by all the terms of Motorola's Standard Managed Zone Core Agreement attached hereto as Exhibit G, the STARCOM21 User Agreement and the STARCOM21 System Management Agreement attached hereto as Exhibit H.

3.12. MOTOROLA'S SOFTWARE MAINTENANCE AGREEMENT. Notwithstanding the foregoing to the contrary, Customer agrees that it will purchase (a) a Software Maintenance Agreement for any consoles ("Consoles"), Simulcast Remote Sites, or Simulcast Prime Sites that are part of the Equipment upon expiration of the Warranty Period and renew it annually for as long as any Consoles, Simulcast Remote Sites, or Simulcast Prime Sites owned by Customer are connected to the STARCOM21 network, and (b) any and all associated hardware changes and/or upgrades required as a result of software releases issued pursuant to the Software Maintenance Agreement. The terms and conditions applicable to the Software Maintenance Agreement will be Motorola's standard Service Terms and Conditions, together with the appropriate statement of work which is attached hereto as Exhibit E. The price of the Software Maintenance Agreement and the term of the pricing validity for the Software Maintenance

Agreement shall be listed in the Pricing Summary. Labor and hardware is quoted and priced separately based on the requirements of each software release.

Section 4 PERFORMANCE SCHEDULE

The Parties will perform their respective responsibilities in accordance with the Performance Schedule. By executing this Agreement, Customer authorizes Motorola to proceed with contract performance.

Section 5 CONTRACT PRICE, PAYMENT AND INVOICING

5.1. CONTRACT PRICE. The Contract Price in U.S. dollars is $10,947,411.00. If applicable, a ~~pricing summary is included with the Payment Schedule. Motorola has priced the services, Software, and~~ Equipment as an integrated system. A reduction in Software or Equipment quantities, or services, may affect the overall Contract Price, including discounts if applicable.

5.2. INVOICING AND PAYMENT. Motorola will submit invoices to Customer according to the Payment Schedule. Except for a payment that is due on the Effective Date, Customer will make payments to Motorola within twenty (20) days after the date of each invoice. Customer will make payments when due in the form of a wire transfer, check, or cashier's check from a U.S. financial institution. Overdue invoices will bear simple interest at the maximum allowable rate. For reference, the Federal Tax Identification Number for Motorola, Inc. is 36-1115800.

5.3 FREIGHT, TITLE, AND RISK OF LOSS. Motorola will pre-pay and add all freight charges to the invoices. Title to the Equipment will pass to Customer upon shipment. Title to Software will not pass to Customer at any time. Risk of loss will pass to Customer upon delivery of the Equipment to the Customer. Motorola will pack and ship all Equipment in accordance with good commercial practices.

5.4. INVOICING AND SHIPPING ADDRESSES. Invoices will be sent to the Customer at the following address:_____

The city which is the ultimate destination where the Equipment will be delivered to Customer is:

_____

The Equipment will be shipped to the Customer at the following address (insert if this information is known):

_____

_____

Customer may change this information by giving written notice to Motorola.

Section 6 SITES AND SITE CONDITIONS

6.1. ACCESS TO SITES. In addition to its responsibilities described elsewhere in this Agreement, Customer will provide a designated project manager; all necessary construction and building permits, zoning variances, licenses, and any other approvals that are necessary to develop or use the sites and mounting locations; and access to the work sites or vehicles identified in the Technical and Implementation Documents as reasonably requested by Motorola so that it may perform its duties in accordance with the Performance Schedule and Statement of Work. If the Statement of Work so indicates, Motorola may assist Customer in the local building permit process.

6.2. SITE CONDITIONS. Customer will ensure that all work sites it provides will be safe, secure, and in compliance with all applicable industry and OSHA standards. To the extent applicable and unless the Statement of Work states to the contrary, Customer will ensure that these work sites have adequate: physical space; air conditioning and other environmental conditions; adequate and appropriate electrical power outlets, distribution, equipment and connections; and adequate telephone or other communication lines (including modem access and adequate interfacing networking capabilities), all for the installation, use and maintenance of the System. Before installing the Equipment or Software at a work site, Motorola

will inspect the work site and advise Customer of any apparent deficiencies or non-conformities with the requirements of this Section. This Agreement is predicated upon normal soil conditions as defined by the version of E.I.A. standard RS-222 in effect on the Effective Date.

6.3. SITE ISSUES. If a Party determines that the sites identified in the Technical and Implementation Documents are no longer available or desired, or if subsurface, structural, adverse environmental or latent conditions at any site differ from those indicated in the Technical and Implementation Documents, the Parties will promptly investigate the conditions and will select replacement sites or adjust the installation plans and specifications as necessary. If change in sites or adjustment to the installation plans and specifications causes a change in the cost or time to perform, the Parties will equitably amend the Contract Price, Performance Schedule, or both, by a change order.

~~Section 7 TRAINING~~

Any training to be provided by Motorola to Customer will be described in the Statement of Work. Customer will notify Motorola immediately if a date change for a scheduled training program is required. If Motorola incurs additional costs because Customer reschedules a training program less than thirty (30) days before its scheduled start date, Motorola may recover these additional costs.

Section 8 SYSTEM ACCEPTANCE

8.1. COMMENCEMENT OF ACCEPTANCE TESTING. Motorola will provide to Customer at least ten (10) days notice before the Acceptance Tests commence. System testing will occur only in accordance with the Acceptance Test Plan.

8.2. SYSTEM ACCEPTANCE. System Acceptance will occur upon successful completion of the Acceptance Tests. Upon System Acceptance, the Parties will memorialize this event by promptly executing a System Acceptance Certificate. If the Acceptance Test Plan includes separate tests for individual Subsystems or phases of the System, acceptance of the individual Subsystem or phase will occur upon the successful completion of the Acceptance Tests for the Subsystem or phase, and the Parties will promptly execute an acceptance certificate for the Subsystem or phase. If Customer believes the System has failed the completed Acceptance Tests, Customer will provide to Motorola a written notice that includes the specific details of the failure. If Customer does not provide to Motorola a failure notice within thirty (30) days after completion of the Acceptance Tests, System Acceptance will be deemed to have occurred as of the completion of the Acceptance Tests. Minor omissions or variances in the System that do not materially impair the operation of the System as a whole will not postpone System Acceptance or Subsystem acceptance, but will be corrected according to a mutually agreed schedule.

8.3. BENEFICIAL USE. Customer acknowledges that Motorola's ability to perform its implementation and testing responsibilities may be impeded if Customer begins using the System before System Acceptance. Therefore, Customer will not commence Beneficial Use before System Acceptance without Motorola's prior written authorization, which will not be unreasonably withheld. Motorola is not responsible for System performance deficiencies that occur during unauthorized Beneficial Use. Upon commencement of Beneficial Use, Customer assumes responsibility for the use and operation of the System.

8.4 FINAL PROJECT ACCEPTANCE. Final Project Acceptance will occur after System Acceptance when all deliverables and other work have been completed. When Final Project Acceptance occurs, the parties will promptly memorialize this final event by so indicating on the System Acceptance Certificate.

Section 9 REPRESENTATIONS AND WARRANTIES

9.1. SYSTEM FUNCTIONALITY. Motorola represents that the System will perform in accordance with the Specifications in all material respects. Upon System Acceptance or Beneficial Use, whichever occurs first, this System functionality representation is fulfilled. Motorola is not responsible for System performance deficiencies that are caused by ancillary equipment not furnished by Motorola which is attached to or used in connection with the System or for reasons or parties beyond Motorola's control,

such as natural causes; the construction of a building that adversely affects the microwave path reliability or radio frequency (RF) coverage; the addition of frequencies at System sites that cause RF interference or intermodulation; or Customer changes to load usage or configuration outside the Specifications.

9.2. EQUIPMENT WARRANTY. During the Warranty Period, Motorola warrants that the Equipment under normal use and service will be free from material defects in materials and workmanship. If System Acceptance is delayed beyond six (6) months after shipment of the Equipment by events or causes within Customer's control, this warranty expires eighteen (18) months after the shipment of the Equipment.

9.3. MOTOROLA SOFTWARE WARRANTY. Unless otherwise stated in the Software License Agreement, during the Warranty Period, Motorola warrants the Motorola Software in accordance with the terms of the Software License Agreement and the provisions of this Section 9 that are applicable to the ~~Motorola Software. If System Acceptance is delayed beyond six (6) months after shipment of the~~ Motorola Software by events or causes within Customer's control, this warranty expires eighteen (18) months after the shipment of the Motorola Software. TO THE EXTENT, IF ANY, THAT THERE IS A SEPARATE LICENSE AGREEMENT PACKAGED WITH, OR PROVIDED ELECTRONICALLY WITH, A PARTICULAR PRODUCT THAT BECOMES EFFECTIVE ON AN ACT OF ACCEPTANCE BY THE END USER, THEN THAT AGREEMENT SUPERCEDES THIS SOFTWARE LICENSE AGREEMENT AS TO THE END USER OF EACH SUCH PRODUCT.

9.4. EXCLUSIONS TO EQUIPMENT AND MOTOROLA SOFTWARE WARRANTIES. These warranties do not apply to: (i) defects or damage resulting from: use of the Equipment or Motorola Software in other than its normal, customary, and authorized manner; accident, liquids, neglect, or acts of God; testing, maintenance, disassembly, repair, installation, alteration, modification, or adjustment not provided or authorized in writing by Motorola; Customer's failure to comply with all applicable industry and OSHA standards; (ii) breakage of or damage to antennas unless caused directly by defects in material or workmanship; (iii) Equipment that has had the serial number removed or made illegible; (iv) batteries (because they carry their own separate limited warranty) or consumables; (v) freight costs to ship Equipment to the repair depot; (vi) scratches or other cosmetic damage to Equipment surfaces that does not affect the operation of the Equipment; and (vii) normal or customary wear and tear.

9.5. WARRANTY CLAIMS. To assert a warranty claim, Customer must notify Motorola in writing of the claim before the expiration of the Warranty Period. Upon receipt of this notice, Motorola will investigate the warranty claim. If this investigation confirms a valid warranty claim, Motorola will (at its option and at no additional charge to Customer) repair the defective Equipment or Motorola Software, replace it with the same or equivalent product, or refund the price of the defective Equipment or Motorola Software. That action will be the full extent of Motorola's liability for the warranty claim. If this investigation indicates the warranty claim is not valid, then Motorola may invoice Customer for responding to the claim on a time and materials basis using Motorola's then current labor rates. Repaired or replaced product is warranted for the balance of the original applicable warranty period. All replaced products or parts will become the property of Motorola.

9.6. ORIGINAL END USER IS COVERED. These express limited warranties are extended by Motorola to the original user purchasing the System for commercial, industrial, or governmental use only, and are not assignable or transferable.

9.7. DISCLAIMER OF OTHER WARRANTIES. THESE WARRANTIES ARE THE COMPLETE WARRANTIES FOR THE EQUIPMENT AND MOTOROLA SOFTWARE PROVIDED UNDER THIS AGREEMENT AND ARE GIVEN IN LIEU OF ALL OTHER WARRANTIES. MOTOROLA DISCLAIMS ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Section 10 DELAYS

10.1. FORCE MAJEURE. Neither Party will be liable for its non-performance or delayed performance if caused by a Force Majeure. A Party that becomes aware of a Force Majeure that will significantly delay performance will notify the other Party promptly (but in no event later than fifteen days) after it discovers

the Force Majeure. If a Force Majeure occurs, the Parties will execute a change order to extend the Performance Schedule for a time period that is reasonable under the circumstances.

10.2. PERFORMANCE SCHEDULE DELAYS CAUSED BY CUSTOMER. If Customer (including its other contractors) delays the Performance Schedule, it will make the promised payments according to the Payment Schedule as if no delay occurred; and the Parties will execute a change order to extend the Performance Schedule and, if requested, compensate Motorola for all reasonable charges incurred because of the delay. Delay charges may include costs incurred by Motorola or its subcontractors for additional freight, warehousing and handling of Equipment; extension of the warranties; travel; suspending and re-mobilizing the work; additional engineering, project management, and standby time calculated at then current rates; and preparing and implementing an alternative implementation plan.

~~Section 11 DISPUTES~~

The Parties will use the following procedure to address any dispute arising under this Agreement (a "Dispute").

11.1. GOVERNING LAW. This Agreement will be governed by and construed in accordance with the laws of the State in which the System is installed.

11.2. NEGOTIATION. Either Party may initiate the Dispute resolution procedures by sending a notice of Dispute ("Notice of Dispute"). The Parties will attempt to resolve the Dispute promptly through good faith negotiations including 1) timely escalation of the Dispute to executives who have authority to settle the Dispute and who are at a higher level of management than the persons with direct responsibility for the matter and 2) direct communication between the executives. If the Dispute has not been resolved within ten (10) days from the Notice of Dispute, the Parties will proceed to mediation.

11.3 MEDIATION. The Parties will choose an independent mediator within thirty (30) days of a notice to mediate from either Party ("Notice of Mediation"). Neither Party may unreasonably withhold consent to the selection of a mediator. If the Parties are unable to agree upon a mediator, either Party may request that American Arbitration Association nominate a mediator. Each Party will bear its own costs of mediation, but the Parties will share the cost of the mediator equally. Each Party will participate in the mediation in good faith and will be represented at the mediation by a business executive with authority to settle the Dispute.

11.4. LITIGATION, VENUE and JURISDICTION. If a Dispute remains unresolved for sixty (60) days after receipt of the Notice of Mediation, either Party may then submit the Dispute to a court of competent jurisdiction in the state in which the System is installed. Each Party irrevocably agrees to submit to the exclusive jurisdiction of the courts in such state over any claim or matter arising under or in connection with this Agreement.

11.5. CONFIDENTIALITY. All communications pursuant to subsections 11.2 and 11.3 will be treated as compromise and settlement negotiations for purposes of applicable rules of evidence and any additional confidentiality protections provided by applicable law. The use of these Dispute resolution procedures will not be construed under the doctrines of laches, waiver or estoppel to affect adversely the rights of either Party.

Section 12 DEFAULT AND TERMINATION

12.1 DEFAULT BY A PARTY. If either Party fails to perform a material obligation under this Agreement, the other Party may consider the non-performing Party to be in default (unless a Force Majeure causes the failure) and may assert a default claim by giving the non-performing Party a written and detailed notice of default. Except for a default by Customer for failing to pay any amount when due under this Agreement which must be cured immediately, the defaulting Party will have thirty (30) days after receipt of the notice of default to either cure the default or, if the default is not curable within thirty (30) days, provide a written cure plan. The defaulting Party will begin implementing the cure plan

immediately after receipt of notice by the other Party that it approves the plan. If Customer is the defaulting Party, Motorola may stop work on the project until it approves the Customer's cure plan.

12.2. FAILURE TO CURE. If a defaulting Party fails to cure the default as provided above in Section 12.1, unless otherwise agreed in writing, the non-defaulting Party may terminate any unfulfilled portion of this Agreement. In the event of termination for default, the defaulting Party will promptly return to the non-defaulting Party any of its Confidential Information. If Customer is the non-defaulting Party, terminates this Agreement as permitted by this Section, and completes the System through a third Party, Customer may as its exclusive remedy recover from Motorola reasonable costs incurred to complete the System to a capability not exceeding that specified in this Agreement less the unpaid portion of the Contract Price. Customer will mitigate damages and provide Motorola with detailed invoices substantiating the charges.

Section 13 INDEMNIFICATION

13.1. GENERAL INDEMNITY BY MOTOROLA. Motorola will indemnify and hold Customer harmless from any and all liability, expense, judgment, suit, cause of action, or demand for personal injury, death, or direct damage to tangible property which may accrue against Customer to the extent it is caused by the negligence of Motorola, its subcontractors, or their employees or agents, while performing their duties under this Agreement, if Customer gives Motorola prompt, written notice of any the claim or suit. Customer will cooperate with Motorola in its defense or settlement of the claim or suit. This section sets forth the full extent of Motorola's general indemnification of Customer from liabilities that are in any way related to Motorola's performance under this Agreement.

13.2. GENERAL INDEMNITY BY CUSTOMER. Customer will indemnify and hold Motorola harmless from any and all liability, expense, judgment, suit, cause of action, or demand for personal injury, death, or direct damage to tangible property which may accrue against Motorola to the extent it is caused by the negligence of Customer, its other contractors, or their employees or agents, while performing their duties under this Agreement, if Motorola gives Customer prompt, written notice of any the claim or suit. Motorola will cooperate with Customer in its defense or settlement of the claim or suit. This section sets forth the full extent of Customer's general indemnification of Motorola from liabilities that are in any way related to Customer's performance under this Agreement.

13.3. PATENT AND COPYRIGHT INFRINGEMENT.

13.3.1. Motorola will defend at its expense any suit brought against Customer to the extent it is based on a third-party claim alleging that the Equipment manufactured by Motorola or the Motorola Software ("Motorola Product") directly infringes a United States patent or copyright ("Infringement Claim"). Motorola's duties to defend and indemnify are conditioned upon: Customer promptly notifying Motorola in writing of the Infringement Claim; Motorola having sole control of the defense of the suit and all negotiations for its settlement or compromise; and Customer providing to Motorola cooperation and, if requested by Motorola, reasonable assistance in the defense of the Infringement Claim. In addition to Motorola's obligation to defend, and subject to the same conditions, Motorola will pay all damages finally awarded against Customer by a court of competent jurisdiction for an Infringement Claim or agreed to, in writing, by Motorola in settlement of an Infringement Claim.

13.3.2. If an Infringement Claim occurs, or in Motorola's opinion is likely to occur, Motorola may at its option and expense: (a) procure for Customer the right to continue using the Motorola Product; (b) replace or modify the Motorola Product so that it becomes non-infringing while providing functionally equivalent performance; or (c) accept the return of the Motorola Product and grant Customer a credit for the Motorola Product, less a reasonable charge for depreciation. The depreciation amount will be calculated based upon generally accepted accounting standards.

13.3.3. Motorola will have no duty to defend or indemnify for any Infringement Claim that is based upon: (a) the combination of the Motorola Product with any software, apparatus or device not furnished by Motorola; (b) the use of ancillary equipment or software not furnished by Motorola and that is attached to or used in connection with the Motorola Product; (c) Motorola Product designed or manufactured in accordance with Customer's designs, specifications, guidelines or instructions, if the alleged infringement

would not have occurred without such designs, specifications, guidelines or instructions; (d) a modification of the Motorola Product by a party other than Motorola; (e) use of the Motorola Product in a manner for which the Motorola Product was not designed or that is inconsistent with the terms of this Agreement; or (f) the failure by Customer to install an enhancement release to the Motorola Software that is intended to correct the claimed infringement. In no event will Motorola's liability resulting from its indemnity obligation to Customer extend in any way to royalties payable on a per use basis or the Customer's revenues, or any royalty basis other than a reasonable royalty based upon revenue derived by Motorola from Customer from sales or license of the infringing Motorola Product.

13.3.4. This Section 13 provides Customer's sole and exclusive remedies and Motorola's entire liability in the event of an Infringement Claim. Customer has no right to recover and Motorola has no obligation to provide any other or further remedies, whether under another provision of this Agreement or any other legal theory or principle, in connection with an Infringement Claim. In addition, the rights and remedies provided in this Section 13 are subject to and limited by the restrictions set forth in Section 14.

Section 14 LIMITATION OF LIABILITY

Except for personal injury or death, Motorola's total liability, whether for breach of contract, warranty, negligence, strict liability in tort, indemnification, or otherwise, will be limited to the direct damages recoverable under law, but not to exceed the price of the Equipment, Software, or services with respect to which losses or damages are claimed. ALTHOUGH THE PARTIES ACKNOWLEDGE THE POSSIBILITY OF SUCH LOSSES OR DAMAGES, THEY AGREE THAT MOTOROLA WILL NOT BE LIABLE FOR ANY COMMERCIAL LOSS; INCONVENIENCE; LOSS OF USE, TIME, DATA, GOOD WILL, REVENUES, PROFITS OR SAVINGS; OR OTHER SPECIAL, INCIDENTAL, INDIRECT, OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO OR ARISING FROM THIS AGREEMENT, THE SALE OR USE OF THE EQUIPMENT OR SOFTWARE, OR THE PERFORMANCE OF SERVICES BY MOTOROLA PURSUANT TO THIS AGREEMENT. This limitation of liability provision survives the expiration or termination of the Agreement and applies notwithstanding any contrary provision. No action for contract breach or otherwise relating to the transactions contemplated by this Agreement may be brought more than one (1) year after the accrual of the cause of action, except for money due upon an open account.

Section 15 CONFIDENTIALITY AND PROPRIETARY RIGHTS

15.1. CONFIDENTIAL INFORMATION. During the term of this Agreement, the parties may provide each other with Confidential Information. Each Party will: maintain the confidentiality of the other Party's Confidential Information and not disclose it to any third party, except as authorized by the disclosing Party in writing or as required by a court of competent jurisdiction; restrict disclosure of the Confidential Information to its employees who have a "need to know" and not copy or reproduce the Confidential Information; take necessary and appropriate precautions to guard the confidentiality of the Confidential Information, including informing its employees who handle the Confidential Information that it is confidential and is not to be disclosed to others, but these precautions will be at least the same degree of care that the receiving Party applies to its own confidential information and will not be less than reasonable care; and use the Confidential Information only in furtherance of the performance of this Agreement. Confidential Information is and will at all times remain the property of the disclosing Party, and no grant of any proprietary rights in the Confidential Information is given or intended, including any express or implied license, other than the limited right of the recipient to use the Confidential Information in the manner and to the extent permitted by this Agreement.

15.2. PRESERVATION OF MOTOROLA'S PROPRIETARY RIGHTS. Motorola, the third party manufacturer of any Equipment, and the copyright owner of any Non-Motorola Software own and retain all of their respective Proprietary Rights in the Equipment and Software, and nothing in this Agreement is intended to restrict their Proprietary Rights. All intellectual property developed, originated, or prepared by Motorola in connection with providing to Customer the Equipment, Software, or related services remain vested exclusively in Motorola, and this Agreement does not grant to Customer any shared development rights of intellectual property. Except as explicitly provided in the Software License Agreement, Motorola does not grant to Customer, either directly or by implication, estoppel, or otherwise, any right, title or interest in Motorola's Proprietary Rights. Customer will not modify, disassemble, peel components,

decompile, otherwise reverse engineer or attempt to reverse engineer, derive source code or create derivative works from, adapt, translate, merge with other software, reproduce, distribute, sublicense, sell or export the Software, or permit or encourage any third party to do so. The preceding sentence does not apply to Open Source Software which is governed by the standard license of the copyright owner.

15.3. This Section 15 shall also apply to Motorola's Standard Managed Zone Core Agreement.

Section 16 GENERAL

16.1. TAXES. The Contract Price does not include any excise, sales, lease, use, property, or other taxes, assessments or duties, all of which will be paid by Customer except as exempt by law. If Motorola is required to pay any of these taxes, Motorola will send an invoice to Customer and Customer will pay to Motorola the amount of the taxes (including any interest and penalties) within twenty (20) days after the date of the invoice. Customer will be solely responsible for reporting the Equipment for personal property tax purposes, and Motorola will be solely responsible for reporting taxes on its income or net worth.

16.2. ASSIGNABILITY AND SUBCONTRACTING. Except as provided herein, neither Party may assign this Agreement or any of its rights or obligations hereunder without the prior written consent of the other Party, which consent will not be unreasonably withheld. Any attempted assignment, delegation, or transfer without the necessary consent will be void. Notwithstanding the foregoing, Motorola may assign this Agreement to any of its affiliates or its right to receive payment without the prior consent of Customer. In addition, in the event Motorola separates one or more of its businesses (each a "Separated Business"), whether by way of a sale, establishment of a joint venture, spin-off or otherwise (each a "Separation Event"), Motorola may, without the prior written consent of the other Party and at no additional cost to Motorola, assign this Agreement such that it will continue to benefit the Separated Business and its affiliates (and Motorola and its affiliates, to the extent applicable) following the Separation Event. Motorola may subcontract any of the work, but subcontracting will not relieve Motorola of its duties under this Agreement.

16.3 WAIVER. Failure or delay by either Party to exercise a right or power under this Agreement will not be a waiver of the right or power. For a waiver of a right or power to be effective, it must be in a writing signed by the waiving Party. An effective waiver of a right or power will not be construed as either a future or continuing waiver of that same right or power, or the waiver of any other right or power.

16.4. SEVERABILITY. If a court of competent jurisdiction renders any part of this Agreement invalid or unenforceable, that part will be severed and the remainder of this Agreement will continue in full force and effect.

16.5. INDEPENDENT CONTRACTORS. Each Party will perform its duties under this Agreement as an independent contractor. The Parties and their personnel will not be considered to be employees or agents of the other Party. Nothing in this Agreement will be interpreted as granting either Party the right or authority to make commitments of any kind for the other. This Agreement will not constitute, create, or be interpreted as a joint venture, partnership or formal business organization of any kind.

16.6. HEADINGS AND SECTION REFERENCES. The section headings in this Agreement are inserted only for convenience and are not to be construed as part of this Agreement or as a limitation of the scope of the particular section to which the heading refers. This Agreement will be fairly interpreted in accordance with its terms and conditions and not for or against either Party.

16.7. ENTIRE AGREEMENT. This Agreement, including all Exhibits, constitutes the entire agreement of the Parties regarding the subject matter of the Agreement and supersedes all previous agreements, proposals, and understandings, whether written or oral, relating to this subject matter. This Agreement may be amended or modified only by a written instrument signed by authorized representatives of both Parties. The preprinted terms and conditions found on any Customer purchase order, acknowledgment or other form will not be considered an amendment or modification of this Agreement, even if a representative of each Party signs that document.

16.8. NOTICES. Notices required under this Agreement to be given by one Party to the other must be in writing and either personally delivered or sent to the address shown below by certified mail, return receipt requested and postage prepaid (or by a recognized courier service, such as Federal Express, UPS, or DHL), or by facsimile with correct answerback received, and will be effective upon receipt:

Motorola, Inc.
Attn: Christine Binotti, Commercial Counsel
1301 E. Algonquin Rd., SH5
Schaumburg, IL 60196
fax: 847-576-0721

Customer Northwest Central 911 System
Attn: Cindy Barbera-Brelle
1975 E. Davis Street
Arlington Heights, IL 60005
fax: 847-590-3369

16.9. COMPLIANCE WITH APPLICABLE LAWS. Each Party will comply with all applicable federal, state, and local laws, regulations and rules concerning the performance of this Agreement or use of the System. Customer will obtain and comply with all Federal Communications Commission ("FCC") licenses and authorizations required for the installation, operation and use of the System before the scheduled installation of the Equipment. Although Motorola might assist Customer in the preparation of its FCC license applications, neither Motorola nor any of its employees is an agent or representative of Customer in FCC or other matters.

16.10. AUTHORITY TO EXECUTE AGREEMENT. Each Party represents that it has obtained all necessary approvals, consents and authorizations to enter into this Agreement and to perform its duties under this Agreement; the person executing this Agreement on its behalf has the authority to do so; upon execution and delivery of this Agreement by the Parties, it is a valid and binding contract, enforceable in accordance with its terms; and the execution, delivery, and performance of this Agreement does not violate any bylaw, charter, regulation, law or any other governing authority of the Party.

16.11. ADMINISTRATOR LEVEL ACCOUNT ACCESS. Motorola will provide Customer with Administrative User Credentials. Customer agrees to only grant Administrative User Credentials to those personnel with the training or experience to correctly use the access. Customer is responsible for protecting Administrative User Credentials from disclosure and maintaining Credential validity by, among other things, updating passwords when required. Customer may be asked to provide valid Administrative User Credentials when in contact with Motorola System support. Customer understands that changes made as the Administrative User can significantly impact the performance of the System. Customer agrees that it will be solely responsible for any negative impact on the System or its users by any such changes. System issues occurring as a result of changes made by an Administrative User may impact Motorola's ability to perform its obligations under the Agreement or its Maintenance and Support Agreement. In such cases, a revision to the appropriate provisions of the Agreement, including the Statement of Work, may be necessary. To the extent Motorola provides assistance to correct any issues caused by or arising out of the use of or failure to maintain Administrative User Credentials, Motorola will be entitled to bill Customer and Customer will pay Motorola on a time and materials basis for resolving the issue.

16.12. SURVIVAL OF TERMS. The following provisions will survive the expiration or termination of this Agreement for any reason: Section 3.6 (Motorola Software); Section 3.7 (Non-Motorola Software); if any payment obligations exist, Sections 5.1 and 5.2 (Contract Price and Invoicing and Payment); Subsection 9.7 (Disclaimer of Implied Warranties); Section 11 (Disputes); Section 14 (Limitation of Liability); and Section 15 (Confidentiality and Proprietary Rights); and all of the General provisions in Section 16.

The Parties hereby enter into this Agreement as of the Effective Date.

Motorola, Inc.

By: _____
Name: Kelly Kirwan
Title: Corporate Vice President
Date: December 13, 2010

Customer

By: _____
Name: Reid T. Ottesen
Title: Chairman
Date: 12/22/10

Exhibit A

SOFTWARE LICENSE AGREEMENT

This Exhibit A Software License Agreement ("Agreement") is between Motorola, Inc., ("Motorola"), and **Northwest Central 911 System** ("Licensee").

For good and valuable consideration, the parties agree as follows:

Section 1 DEFINITIONS

1.1 "Designated Products" means products provided by Motorola to Licensee with which or for which the Software and Documentation is licensed for use.

1.2 "Documentation" means product and software documentation that specifies technical and performance features and capabilities, and the user, operation and training manuals for the Software (including all physical or electronic media upon which such information is provided).

1.3 "Open Source Software" means software with either freely obtainable source code, license for modification, or permission for free distribution.

1.4 "Open Source Software License" means the terms or conditions under which the Open Source Software is licensed.

1.5 "Primary Agreement" means the agreement to which this exhibit is attached.

1.6 "Security Vulnerability" means a flaw or weakness in system security procedures, design, implementation, or internal controls that could be exercised (accidentally triggered or intentionally exploited) and result in a security breach such that data is compromised, manipulated or stolen or the system damaged.

1.7 "Software" (i) means proprietary software in object code format, and adaptations, translations, de-compilations, disassemblies, emulations, or derivative works of such software; (ii) means any modifications, enhancements, new versions and new releases of the software provided by Motorola; and (iii) may contain one or more items of software owned by a third party supplier. The term "Software" does not include any third party software provided under separate license or third party software not licensable under the terms of this Agreement.

Section 2 SCOPE

Motorola and Licensee enter into this Agreement in connection with Motorola's delivery of certain proprietary Software or products containing embedded or pre-loaded proprietary Software, or both. This Agreement contains the terms and conditions of the license Motorola is providing to Licensee, and Licensee's use of the Software and Documentation.

Section 3 GRANT OF LICENSE

3.1. Subject to the provisions of this Agreement and the payment of applicable license fees, Motorola grants to Licensee a personal, limited, non-transferable (except as permitted in Section 7) and non-exclusive license under Motorola's copyrights and Confidential Information (as defined in the Primary Agreement) embodied in the Software to use the Software, in object code form, and the Documentation solely in connection with Licensee's use of the Designated Products. This Agreement does not grant any rights to source code.

3.2. If the Software licensed under this Agreement contains or is derived from Open Source Software, the terms and conditions governing the use of such Open Source Software are in the Open Source Software Licenses of the copyright owner and not this Agreement. If there is a conflict between the terms and conditions of this Agreement and the terms and conditions of the Open Source Software Licenses governing Licensee's use of the Open Source Software, the terms and conditions of the license grant of the applicable Open Source Software Licenses will take precedence over the license grants in this Agreement. If requested by Licensee, Motorola will use commercially reasonable efforts to: (i) determine whether any Open Source Software is provided under this Agreement; (ii) identify the Open Source Software and provide Licensee a copy of the applicable Open Source Software License (or specify where that license may be found); and, (iii) provide Licensee a copy of the Open Source Software source code, without charge, if it is publicly available (although distribution fees may be applicable).

Section 4 LIMITATIONS ON USE

4.1. Licensee may use the Software only for Licensee's internal business purposes and only in accordance with the Documentation. Any other use of the Software is strictly prohibited. Without limiting the general nature of these restrictions, Licensee will not make the Software available for use by third parties on a "time sharing," "application service provider," or "service bureau" basis or for any other similar commercial rental or sharing arrangement.

4.2. Licensee will not, and will not allow or enable any third party to: (i) reverse engineer, disassemble, peel components, decompile, reprogram or otherwise reduce the Software or any portion to a human perceptible form or otherwise attempt to recreate the source code; (ii) modify, adapt, create derivative works of, or merge the Software; (iii) copy, reproduce, distribute, lend, or lease the Software or Documentation to any third party, grant any sublicense or other rights in the Software or Documentation to any third party, or take any action that would cause the Software or Documentation to be placed in the public domain; (iv) remove, or in any way alter or obscure, any copyright notice or other notice of Motorola's proprietary rights; (v) provide, copy, transmit, disclose, divulge or make the Software or Documentation available to, or permit the use of the Software by any third party or on any machine except as expressly authorized by this Agreement; or (vi) use, or permit the use of, the Software in a manner that would result in the production of a copy of the Software solely by activating a machine containing the Software. Licensee may make one copy of Software to be used solely for archival, back-up, or disaster recovery purposes; *provided* that Licensee may not operate that copy of the Software at the same time as the original Software is being operated. Licensee may make as many copies of the Documentation as it may reasonably require for the internal use of the Software.

4.3. Unless otherwise authorized by Motorola in writing, Licensee will not, and will not enable or allow any third party to: (i) install a licensed copy of the Software on more than one unit of a Designated Product; or (ii) copy onto or transfer Software installed in one unit of a Designated Product onto one other device. Licensee may temporarily transfer Software installed on a Designated Product to another device if the Designated Product is inoperable or malfunctioning, if Licensee provides written notice to Motorola of the temporary transfer and identifies the device on which the Software is transferred. Temporary transfer of the Software to another device must be discontinued when the original Designated Product is returned to operation and the Software must be removed from the other device. Licensee must provide prompt written notice to Motorola at the time temporary transfer is discontinued.

4.4. When using Motorola's Radio Service Software ("RSS"), Licensee must purchase a separate license for each location at which Licensee uses RSS. Licensee's use of RSS at a licensed location does not entitle Licensee to use or access RSS remotely. Licensee may make one copy of RSS for each licensed location. Licensee shall provide Motorola with a list of all locations at which Licensee uses or intends to use RSS upon Motorola's request.

4.5. Licensee will maintain, during the term of this Agreement and for a period of two years thereafter, accurate records relating to this license grant to verify compliance with this Agreement. Motorola or an independent third party ("Auditor") may inspect Licensee's premises, books and records, upon reasonable prior notice to Licensee, during Licensee's normal business hours and subject to Licensee's facility and

security regulations. Motorola is responsible for the payment of all expenses and costs of the Auditor. Any information obtained by Motorola and the Auditor will be kept in strict confidence by Motorola and the Auditor and used solely for the purpose of verifying Licensee's compliance with the terms of this Agreement.

Section 5 OWNERSHIP AND TITLE

Motorola, its licensors, and its suppliers retain all of their proprietary rights in any form in and to the Software and Documentation, including, but not limited to, all rights in patents, patent applications, inventions, copyrights, trademarks, trade secrets, trade names, and other proprietary rights in or relating to the Software and Documentation (including any corrections, bug fixes, enhancements, updates, modifications, adaptations, translations, de-compilations, disassemblies, emulations to or derivative works from the Software or Documentation, whether made by Motorola or another party, or any improvements that result from Motorola's processes or, provision of information services). No rights are granted to Licensee under this Agreement by implication, estoppel or otherwise, except for those rights which are expressly granted to Licensee in this Agreement. All intellectual property developed, originated, or prepared by Motorola in connection with providing the Software, Designated Products, Documentation or related services, remains vested exclusively in Motorola, and Licensee will not have any shared development or other intellectual property rights.

Section 6 LIMITED WARRANTY; DISCLAIMER OF WARRANTY

6.1. The commencement date and the term of the Software warranty will be a period of ninety (90) days from Motorola's shipment of the Software (the "Warranty Period"). If Licensee is not in breach of any of its obligations under this Agreement, Motorola warrants that the unmodified Software, when used properly and in accordance with the Documentation and this Agreement, will be free from a reproducible defect that eliminates the functionality or successful operation of a feature critical to the primary functionality or successful operation of the Software. Whether a defect occurs will be determined by Motorola solely with reference to the Documentation. Motorola does not warrant that Licensee's use of the Software or the Designated Products will be uninterrupted, error-free, completely free of Security Vulnerabilities, or that the Software or the Designated Products will meet Licensee's particular requirements. Motorola makes no representations or warranties with respect to any third party software included in the Software.

6.2. Motorola's sole obligation to Licensee and Licensee's exclusive remedy under this warranty is to use reasonable efforts to remedy any material Software defect covered by this warranty. These efforts will involve either replacing the media or attempting to correct significant, demonstrable program or documentation errors or Security Vulnerabilities. If Motorola cannot correct the defect within a reasonable time, then at Motorola's option, Motorola will replace the defective Software with functionally-equivalent Software, license to Licensee substitute Software which will accomplish the same objective, or terminate the license and refund the Licensee's paid license fee.

6.3. Warranty claims are described in the Primary Agreement.

6.4. The express warranties set forth in this Section 6 are in lieu of, and Motorola disclaims, any and all other warranties (express or implied, oral or written) with respect to the Software or Documentation, including, without limitation, any and all implied warranties of condition, title, non-infringement, merchantability, or fitness for a particular purpose or use by Licensee (whether or not Motorola knows, has reason to know, has been advised, or is otherwise aware of any such purpose or use), whether arising by law, by reason of custom or usage of trade, or by course of dealing. In addition, Motorola disclaims any warranty to any person other than Licensee with respect to the Software or Documentation.

Section 7 TRANSFERS

Licensee will not transfer the Software or Documentation to any third party without Motorola's prior written consent. Motorola's consent may be withheld at its discretion and may be conditioned upon transferee paying all applicable license fees and agreeing to be bound by this Agreement. If the Designated

Products are Motorola's radio products and Licensee transfers ownership of the Motorola radio products to a third party, Licensee may assign its right to use the Software (other than RSS and Motorola's FLASHport® software) which is embedded in or furnished for use with the radio products and the related Documentation; *provided* that Licensee transfers all copies of the Software and Documentation to the transferee, and Licensee and the transferee sign a transfer form to be provided by Motorola upon request, obligating the transferee to be bound by this Agreement.

Section 8 TERM AND TERMINATION

8.1 Licensee's right to use the Software and Documentation will begin when the Primary Agreement is signed by both parties and will continue for the life of the Designated Products with which or for which the Software and Documentation have been provided by Motorola, unless Licensee breaches this Agreement, in which case this Agreement and Licensee's right to use the Software and Documentation may be terminated immediately upon notice by Motorola.

8.2 Within thirty (30) days after termination of this Agreement, Licensee must certify in writing to Motorola that all copies of the Software have been removed or deleted from the Designated Products and that all copies of the Software and Documentation have been returned to Motorola or destroyed by Licensee and are no longer in use by Licensee.

8.3 Licensee acknowledges that Motorola made a considerable investment of resources in the development, marketing, and distribution of the Software and Documentation and that Licensee's breach of this Agreement will result in irreparable harm to Motorola for which monetary damages would be inadequate. If Licensee breaches this Agreement, Motorola may terminate this Agreement and be entitled to all available remedies at law or in equity (including immediate injunctive relief and repossession of all non-embedded Software and associated Documentation unless Licensee is a Federal agency of the United States Government).

Section 9 UNITED STATES GOVERNMENT LICENSING PROVISIONS

This Section applies if Licensee is the United States Government or a United States Government agency. Licensee's use, duplication or disclosure of the Software and Documentation under Motorola's copyrights or trade secret rights is subject to the restrictions set forth in subparagraphs (c)(1) and (2) of the Commercial Computer Software-Restricted Rights clause at FAR 52.227-19 (JUNE 1987), if applicable, unless they are being provided to the Department of Defense. If the Software and Documentation are being provided to the Department of Defense, Licensee's use, duplication, or disclosure of the Software and Documentation is subject to the restricted rights set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013 (OCT 1988), if applicable. The Software and Documentation may or may not include a Restricted Rights notice, or other notice referring to this Agreement. The provisions of this Agreement will continue to apply, but only to the extent that they are consistent with the rights provided to the Licensee under the provisions of the FAR or DFARS mentioned above, as applicable to the particular procuring agency and procurement transaction.

Section 10 CONFIDENTIALITY

Licensee acknowledges that the Software and Documentation contain Motorola's valuable proprietary and Confidential Information and are Motorola's trade secrets, and that the provisions in the Primary Agreement concerning Confidential Information apply.

Section 11 LIMITATION OF LIABILITY

The Limitation of Liability provision is described in the Primary Agreement.

Section 12 NOTICES

Notices are described in the Primary Agreement.

Section 13 GENERAL

13.1. COPYRIGHT NOTICES. The existence of a copyright notice on the Software will not be construed as an admission or presumption of publication of the Software or public disclosure of any trade secrets associated with the Software.

13.2. COMPLIANCE WITH LAWS. Licensee acknowledges that the Software is subject to the laws and regulations of the United States and Licensee will comply with all applicable laws and regulations, including export laws and regulations of the United States. Licensee will not, without the prior authorization of Motorola and the appropriate governmental authority of the United States, in any form export or re-export, sell or resell, ship or reship, or divert, through direct or indirect means, any item or technical data or direct or indirect products sold or otherwise furnished to any person within any territory for which the United States Government or any of its agencies at the time of the action, requires an export license or other governmental approval. Violation of this provision is a material breach of this Agreement.

13.3. ASSIGNMENTS AND SUBCONTRACTING. Motorola may assign its rights or subcontract its obligations under this Agreement, or encumber or sell its rights in any Software, without prior notice to or consent of Licensee.

13.4. GOVERNING LAW. This Agreement is governed by the laws of the United States to the extent that they apply and otherwise by the internal substantive laws of the State to which the Software is shipped if Licensee is a sovereign government entity, or the internal substantive laws of the State of Illinois if Licensee is not a sovereign government entity. The terms of the U.N. Convention on Contracts for the International Sale of Goods do not apply. In the event that the Uniform Computer Information Transaction Act, any version of this Act, or a substantially similar law (collectively "UCITA") becomes applicable to a party's performance under this Agreement, UCITA does not govern any aspect of this Agreement or any license granted under this Agreement, or any of the parties' rights or obligations under this Agreement. The governing law will be that in effect prior to the applicability of UCITA.

13.5. THIRD PARTY BENEFICIARIES. This Agreement is entered into solely for the benefit of Motorola and Licensee. No third party has the right to make any claim or assert any right under this Agreement, and no third party is deemed a beneficiary of this Agreement. Notwithstanding the foregoing, any licensor or supplier of third party software included in the Software will be a direct and intended third party beneficiary of this Agreement.

13.6. SURVIVAL. Sections 4, 5, 6.3, 7, 8, 9, 10, 11 and 13 survive the termination of this Agreement.

13.7. ORDER OF PRECEDENCE. In the event of inconsistencies between this Exhibit and the Primary Agreement, the parties agree that this Exhibit prevails, only with respect to the specific subject matter of this Exhibit, and not the Primary Agreement or any other exhibit as it applies to any other subject matter.

13.8 SECURITY. Motorola uses reasonable means in the design and writing of its own Software and the acquisition of third party Software to limit Security Vulnerabilities. While no software can be guaranteed to be free from Security Vulnerabilities, if a Security Vulnerability is discovered, Motorola will take the steps set forth in Section 6 of this Agreement.

Exhibit B

Payment Schedule (If applicable)

PAYMENT SCHEDULE.
10% of the Contract Price due upon contract execution;
10% of the Contract Price due upon completion of the Detailed Design Review
55% of the Contract Price due upon shipment of equipment;
5% of the Contract Price upon installation of equipment;
5% of the Contract Price upon start of beneficial use; and
15% of the Contract Price upon Final Acceptance.

Exhibit C

Technical and Implementation Documents

Attached

"System Description" dated __December 14, 2010
"Equipment List" dated __ December 14, 2010
"Statement of Work" dated __ December 14, 2010
"Acceptance Test Plan" or "ATP" dated _ December 14, 2010
"Performance Schedule" dated _ December 14, 2010

Exhibit D

ADDENDUM TO MOTOROLA COMMUNICATIONS SYSTEM AGREEMENT

1. PRECEDENCE.
   All work undertaken by **MOTOROLA** subject to the Scope of Work of this Agreement shall be subject to the terms and conditions of the documents, as set forth below in descending order of precedence.
   a. This Addendum to the Communications System Agreement;
   b. This terms of the Communications System Agreement;
   c. The technology standards and specifications as found in Exhibit C to the Communications System Agreement.

2. CHANGES AND DELAYS. (Modifies Section 4)
   MOTOROLA shall perform all requirements of the work set out in the Scope of Work in a timely manner. Should **NWC911** notify **MOTOROLA** of a failure to perform in a timely manner any aspect of the Scope of Work, **MOTOROLA** will remedy the failure to perform in a timely manner. "Performance in a timely manner" shall be judged on the basis of the reasonable ability of MOTOROLA to perform as designated in the Attached Exhibits Statement of Work, Acceptance Test Plans, and Implementation Schedule

3. STANDARDS OF PERFORMANCE; ACCEPTANCE. (Modifies Section 8)
   The work subject to this Agreement shall be accepted only upon completion of the ninety (90) day reliability period and Final Acceptance by NWC911. **NWC911** shall accept the system and begin Beneficial Use only after successful completion of all appropriate acceptance tests and execution of acceptance certificates by NWC911. The System shall operate for a period of ninety (90) days from Beneficial Use per the Acceptance Test Plans, System Description and Statement of Work and after Acceptance Testing as provided in Sections 8.1 and 8.2 of this Agreement. Upon completion of the ninety (90) day reliability period, NWC911 will execute a Final Acceptance Certificate.

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Exhibit E

Service Statement(s) of Work and Service Terms and Conditions (if applicable)

Service Terms and Conditions

Motorola, Inc. ("Motorola") and the customer named in this Agreement ("Customer") hereby agree as follows:

Section 1 APPLICABILITY

These Service Terms and Conditions apply to service contracts whereby Motorola will provide to Customer either (1) maintenance, support, or other services under a Motorola Service Agreement, or (2) installation services under a Motorola Installation Agreement.

Section 2 DEFINITIONS AND INTERPRETATION

2.1. "Agreement" means these Service Terms and Conditions; the cover page for the Service Agreement or the Installation Agreement, as applicable; and any other attachments, all of which are incorporated herein by this reference. In interpreting this Agreement and resolving any ambiguities, these Service Terms and Conditions take precedence over any cover page, and the cover page takes precedence over any attachments, unless the cover page or attachment states otherwise.

2.2. "Equipment" means the equipment that is specified in the attachments or is subsequently added to this Agreement.

2.3. "Services" means those installation, maintenance, support, training, and other services described in this Agreement.

Section 3 ACCEPTANCE

Customer accepts these Service Terms and Conditions and agrees to pay the prices set forth in the Agreement. This Agreement becomes binding only when accepted in writing by Motorola. The term of this Agreement begins on the "Start Date" indicated in this Agreement.

Section 4 SCOPE OF SERVICES

4.1. Motorola will provide the Services described in this Agreement or in a more detailed statement of work or other document attached to this Agreement. At Customer's request, Motorola may also provide additional services at Motorola's then-applicable rates for the services.

4.2. If Motorola is providing Services for Equipment, Motorola parts or parts of equal quality will be used; the Equipment will be serviced at levels set forth in the manufacturer's product manuals; and routine service procedures that are prescribed by Motorola will be followed.

4.3. If Customer purchases from Motorola additional equipment that becomes part of the same system as the initial Equipment, the additional equipment may be added to this Agreement and will be billed at the applicable rates after the warranty for that additional equipment expires.

4.4. All Equipment must be in good working order on the Start Date or when additional equipment is added to the Agreement. Upon reasonable request by Motorola, Customer will provide a complete serial and model number list of the Equipment. Customer must promptly notify Motorola in writing when any Equipment is lost, damaged, stolen or taken out of service. Customer's obligation to pay Service fees for this Equipment will terminate at the end of the month in which Motorola receives the written notice.

4.5. Customer must specifically identify any Equipment that is labeled intrinsically safe for use in hazardous environments.

4.6. If Equipment cannot, in Motorola's reasonable opinion, be properly or economically serviced for any reason, Motorola may modify the scope of Services related to that Equipment; remove that Equipment from the Agreement; or increase the price to Service that Equipment.

4.7. Customer must promptly notify Motorola of any Equipment failure. Motorola will respond to Customer's notification in a manner consistent with the level of Service purchased as indicated in this Agreement.

Section 5 EXCLUDED SERVICES

5.1. Service excludes the repair or replacement of Equipment that has become defective or damaged from use in other than the normal, customary, intended, and authorized manner; use not in compliance with applicable industry standards; excessive wear and tear; or accident, liquids, power surges, neglect, acts of God or other force majeure events.

5.2. Unless specifically included in this Agreement, Service excludes items that are consumed in the normal operation of the Equipment, such as batteries or magnetic tapes.; upgrading or reprogramming Equipment; accessories, belt clips, battery chargers, custom or special products, modified units, or software; and repair or maintenance of any transmission line, antenna, microwave equipment, tower or tower lighting, duplexer, combiner, or multicoupler. Motorola has no obligations for any transmission medium, such as telephone lines, computer networks, the internet or the worldwide web, or for Equipment malfunction caused by the transmission medium.

Section 6 TIME AND PLACE OF SERVICE

Service will be provided at the location specified in this Agreement. When Motorola performs service at Customer's location, Customer will provide Motorola, at no charge, a non-hazardous work environment with adequate shelter, heat, light, and power and with full and free access to the Equipment. Waivers of liability from Motorola or its subcontractors will not be imposed as a site access requirement. Customer will provide all information pertaining to the hardware and software elements of any system with which the Equipment is interfacing so that Motorola may perform its Services. Unless otherwise stated in this Agreement, the hours of Service will be 8:30 a.m. to 4:30 p.m., local time, excluding weekends and holidays. Unless otherwise stated in this Agreement, the price for the Services exclude any charges or expenses associated with helicopter or other unusual access requirements; if these charges or expenses are reasonably incurred by Motorola in rendering the Services, Customer agrees to reimburse Motorola for those charges and expenses.

Section 7 CUSTOMER CONTACT

Customer will provide Motorola with designated points of contact (list of names and phone numbers) that will be available twenty-four (24) hours per day, seven (7) days per week, and an escalation procedure to enable Customer's personnel to maintain contact, as needed, with Motorola.

Section 8 PAYMENT

Unless alternative payment terms are stated in this Agreement, Motorola will invoice Customer in advance for each payment period. All other charges will be billed monthly, and Customer must pay each invoice in U.S. dollars within twenty (20) days of the invoice date. Customer will reimburse Motorola for all property taxes, sales and use taxes, excise taxes, and other taxes or assessments that are levied as a result of Services rendered under this Agreement (except income, profit, and franchise taxes of Motorola) by any governmental entity.

Section 9 WARRANTY

Motorola warrants that its Services under this Agreement will be free of defects in materials and workmanship for a period of ninety (90) days from the date the performance of the Services are completed. In the event of a breach of this warranty, Customer's sole remedy is to require Motorola to re-perform the non-conforming Service or to refund, on a pro-rata basis, the fees paid for the non-conforming Service. MOTOROLA DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Section 10 DEFAULT/TERMINATION

10.1. If either party defaults in the performance of this Agreement, the other party will give to the non-performing party a written and detailed notice of the default. The non-performing party will have thirty (30) days thereafter to provide a written plan to cure the default that is acceptable to the other party and begin implementing the cure plan immediately after plan approval. If the non-performing party fails to provide or implement the cure plan, then the injured party, in addition to any other rights available to it under law, may immediately terminate this Agreement effective upon giving a written notice of termination to the defaulting party.

10.2. Any termination of this Agreement will not relieve either party of obligations previously incurred pursuant to this Agreement, including payments which may be due and owing at the time of termination. All sums owed by Customer to Motorola will become due and payable immediately upon termination of this Agreement. Upon the effective date of termination, Motorola will have no further obligation to provide Services.

Section 11 LIMITATION OF LIABILITY

Except for personal injury or death, Motorola's total liability, whether for breach of contract, warranty, negligence, strict liability in tort, or otherwise, will be limited to the direct damages recoverable under law, but not to exceed the price of twelve (12) months of Service provided under this Agreement. ALTHOUGH THE PARTIES ACKNOWLEDGE THE POSSIBILITY OF SUCH LOSSES OR DAMAGES, THEY AGREE THAT MOTOROLA WILL NOT BE LIABLE FOR ANY COMMERCIAL LOSS; INCONVENIENCE; LOSS OF USE, TIME, DATA, GOOD WILL, REVENUES, PROFITS OR SAVINGS; OR OTHER SPECIAL, INCIDENTAL, INDIRECT, OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO OR ARISING FROM THIS AGREEMENT OR THE PERFORMANCE OF SERVICES BY MOTOROLA PURSUANT TO THIS AGREEMENT. No action for contract breach or otherwise relating to the transactions contemplated by this Agreement may be brought more than one (1) year after the accrual of the cause of action, except for money due upon an open account. This limitation of liability will survive the expiration or termination of this Agreement and applies notwithstanding any contrary provision.

Section 12 EXCLUSIVE TERMS AND CONDITIONS

12.1. This Agreement supersedes all prior and concurrent agreements and understandings between the parties, whether written or oral, related to the Services, and there are no agreements or representations concerning the subject matter of this Agreement except for those expressed herein. The Agreement may not be amended or modified except by a written agreement signed by authorized representatives of both parties.

12.2. Customer agrees to reference this Agreement on any purchase order issued in furtherance of this Agreement, however, an omission of the reference to this Agreement will not affect its applicability. In no event will either party be bound by any terms contained in a Customer purchase order, acknowledgement, or other writings unless: the purchase order, acknowledgement, or other writing specifically refers to this Agreement; clearly indicate the intention of both parties to override and modify this Agreement; and the purchase order, acknowledgement, or other writing is signed by authorized representatives of both parties.

Section 13 PROPRIETARY INFORMATION; CONFIDENTIALITY; INTELLECTUAL PROPERTY RIGHTS

13.1. Any information or data in the form of specifications, drawings, reprints, technical information or otherwise furnished to Customer under this Agreement will remain Motorola's property, will be deemed proprietary, will be kept confidential, and will be promptly returned at Motorola's request. Customer may not disclose, without Motorola's written permission or as required by law, any confidential information or data to any person, or use confidential information or data for any purpose other than performing its obligations under this Agreement. The obligations set forth in this Section survive the expiration or termination of this Agreement.

13.2. Unless otherwise agreed in writing, no commercial or technical information disclosed in any manner or at any time by Customer to Motorola will be deemed secret or confidential. Motorola will have

no obligation to provide Customer with access to its confidential and proprietary information, including cost and pricing data.

13.3. This Agreement does not grant directly or by implication, estoppel, or otherwise, any ownership right or license under any Motorola patent, copyright, trade secret, or other intellectual property, including any intellectual property created as a result of or related to the Equipment sold or Services performed under this Agreement.

Section 14 FCC LICENSES AND OTHER AUTHORIZATIONS

Customer is solely responsible for obtaining licenses or other authorizations required by the Federal Communications Commission or any other federal, state, or local government agency and for complying with all rules and regulations required by governmental agencies. Neither Motorola nor any of its employees is an agent or representative of Customer in any governmental matters.

Section 15 COVENANT NOT TO EMPLOY

During the term of this Agreement and continuing for a period of two (2) years thereafter, Customer will not hire, engage on contract, solicit the employment of, or recommend employment to any third party of any employee of Motorola or its subcontractors without the prior written authorization of Motorola. This provision applies only to those employees of Motorola or its subcontractors who are responsible for rendering services under this Agreement. If this provision is found to be overly broad under applicable law, it will be modified as necessary to conform to applicable law.

Section 16 MATERIALS, TOOLS AND EQUIPMENT

All tools, equipment, dies, gauges, models, drawings or other materials paid for or furnished by Motorola for the purpose of this Agreement will be and remain the sole property of Motorola. Customer will safeguard all such property while it is in Customer's custody or control, be liable for any loss or damage to this property, and return it to Motorola upon request. This property will be held by Customer for Motorola's use without charge and may be removed from Customer's premises by Motorola at any time without restriction.

Section 17 GENERAL TERMS

17.1. If any court renders any portion of this Agreement unenforceable, the remaining terms will continue in full force and effect.

17.2. This Agreement and the rights and duties of the parties will be interpreted in accordance with the laws of the State in which the Services are performed.

17.3. Failure to exercise any right will not operate as a waiver of that right, power, or privilege.

17.4. Neither party is liable for delays or lack of performance resulting from any causes that are beyond that party's reasonable control, such as strikes, material shortages, or acts of God.

17.5. Motorola may subcontract any of the work, but subcontracting will not relieve Motorola of its duties under this Agreement.

17.6. Except as provided herein, neither Party may assign this Agreement or any of its rights or obligations hereunder without the prior written consent of the other Party, which consent will not be unreasonably withheld. Any attempted assignment, delegation, or transfer without the necessary consent will be void. Notwithstanding the foregoing, Motorola may assign this Agreement to any of its affiliates or its right to receive payment without the prior consent of Customer. In addition, in the event Motorola separates one or more of its businesses (each a "Separated Business"), whether by way of a sale, establishment of a joint venture, spin-off or otherwise (each a "Separation Event"), Motorola may, without the prior written consent of the other Party and at no additional cost to Motorola, assign this Agreement such that it will continue to benefit the Separated Business and its affiliates (and Motorola and its affiliates, to the extent applicable) following the Separation Event.

17.7. THIS AGREEMENT WILL RENEW, FOR AN ADDITIONAL ONE (1) YEAR TERM, ON EVERY ANNIVERSARY OF THE START DATE UNLESS EITHER THE COVER PAGE SPECIFICALLY STATES A TERMINATION DATE OR ONE PARTY NOTIFIES THE OTHER IN WRITING OF ITS INTENTION TO DISCONTINUE THE AGREEMENT NOT LESS THAN THIRTY (30) DAYS OF THAT ANNIVERSARY DATE. At the anniversary date, Motorola may adjust the price of the Services to reflect its current rates.

17.8. If Motorola provides Services after the termination or expiration of this Agreement, the terms and conditions in effect at the time of the termination or expiration will apply to those Services and Customer agrees to pay for those services on a time and materials basis at Motorola's then effective hourly rates.

Exhibit F

System Acceptance Certificate

Customer Name: _____

Project Name: _____

This System Acceptance Certificate memorializes the occurrence of System Acceptance. Motorola and Customer acknowledge that:

1. The Acceptance Tests set forth in the Acceptance Test Plan have been successfully completed.

2. The System is accepted.

Customer Representative:	Motorola Representative:
Signature: _____	Signature: _____
Print Name: _____	Print Name: _____
Title: _____	Title: _____
Date: _____	Date: _____

FINAL PROJECT ACCEPTANCE:

Motorola has provided and Customer has received all deliverables, and Motorola has performed all other work required for Final Project Acceptance.

Customer Representative:	Motorola Representative:
Signature: _____	Signature: _____
Print Name: _____	Print Name: _____
Title: _____	Title: _____
Date: _____	Date: _____

Exhibit G

Software Support Statement of Work

Exhibit H

Motorola's Standard Managed Zone Core Agreement

[NOTE: Motorola's Standard Managed Zone Core Agreement will be provided subsequently]

Exhibit I

STARCOM21 User Agreement and System Management Agreement

AMENDMENT NUMBER ONE
TO THE COMMUNICATIONS SYSTEM AGREEMENT
BY AND BETWEEN
NORTHWEST CENTRAL 9-1-1 SYSTEM
AND
MOTOROLA SOLUTIONS, INC.

This amendment number one to the Communications System Agreement ("Amendment") is entered into by and between Northwest Central 9-1-1 System ("Customer") and Motorola Solutions, Inc. ("Motorola"), each of whom may be individually referred to as a "Party" and collectively as the "Parties."

WHEREAS, Customer and Motorola entered into a Communications System Agreement ("Agreement") on December 22, 2010, whereby Motorola would provide a radio communications system ("System"); and

WHEREAS, Customer issued a public solicitation in the form of a Request for Quote for APCO Project 25 Subscriber Units ("RFQ") on June 21, 2011 for the purchase of radio subscriber units for use on the System; and

WHEREAS, Motorola submitted a proposal in response to the RFQ dated July 18, 2011 ("Proposal"); and

WHEREAS, Customer seeks to award Motorola a contract for radio subscriber units as a result of the RFQ and that Proposal; and

WHEREAS, Section 16.7 of the Agreement authorizes the Parties to amend the Agreement, provided such amendment is in writing and signed by an authorized representative of each Party; and

WHEREAS, the Parties believe that it is in their best interest to enter into this amendment to the Agreement.

NOW THEREFORE, in consideration of the promises contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereto agree to amend the Agreement as follows.

Section 1 – EXHIBITS

The following changes apply only to radio subscriber unit purchases and are not intended to amend the Agreement with respect to the System.

Exhibit B – Payment Schedule is hereby replaced with the attached Exhibit B (Customer-funded purchases) dated December 8, 2011;

Exhibits C-1 through C-5 to the Agreement shall not apply to radio subscriber unit purchases. The following Exhibits C – Technical and Implementation documents shall instead apply to all radio subscriber unit purchases:

Exhibit C-6 – Equipment List dated December 8, 2011;
Exhibit C-7 – Warranty Statement of Work dated December 8, 2011;
Exhibit C-8 – NWCD Revised Pricing Summary dated December 13, 2011;
Exhibit C-9 – External Agency Purchasing Agreement dated December 13, 2011;
Exhibit C-10 – Motorola's Proposal dated July 18, 2011; and
Exhibit C-11 – Customer's RFQ dated June 21, 2011.

The following exhibits shall not apply to radio subscriber unit purchases but shall remain in full force and effect with regard to the System:

Exhibit F
Exhibit G
Exhibit H
Exhibit I

Section 2 – DEFINITIONS

Add the following new definition to Section 2:

"Eligible Purchaser" means Customer and those other government agencies, bodies, districts, or entities described in Section 3.13 below.

Section 3 – Scope of Work

3.3 Term. This Amendment, as well as the applicable portions of the Agreement that are intended to govern radio subscriber unit purchases, shall remain in full force and effect for a period of five (5) years from the date on which the last Party executed this Amendment.

Sections 3.10, 3.11, and 3.12 shall not apply to radio subscriber unit purchases but shall remain in full force and effect with regard to the System.

Add a new Section 3.13 as follows:

3.13. ELIGIBLE PURCHASERS. Customer and all of its agencies, and any city or governmental district, body or agency located within the State of Illinois may purchase radio subscriber units pursuant to this Amendment to the Agreement. After the execution date of this Amendment, Eligible Purchasers have the same rights and responsibilities as Customer under this Amendment to the Agreement with respect to their purchases from this Agreement.

Section 8 – SYSTEM ACCEPTANCE

Sections 8.1, 8.2, and 8.4 shall not apply to radio subscriber unit purchases but shall remain in full force and effect with regard to the System.

Section 9 – REPRESENTATIONS AND WARRANTIES

Section 9.1 shall not apply to radio subscriber unit purchases but shall remain in full force and effect with regard to the System.

IN WITNESS WHEREOF, the parties hereto have executed this Amendment on the date set forth below.

MOTOROLA SOLUTIONS, INC.	**NORTHWEST CENTRAL 9-1-1 SYSTEM**
By:	**By:**
Gino Bonanotte	Kenneth J. Fritz
Name	**Name**
Corporate Vice President Finance	Village Manager /Chairman
Title	**Title**
December 21, 2011	December 20, 2011
Date	**Date**

Exhibit B
Payment Schedule
December 8, 2011

CUSTOMER-FUNDED

CONTRACT PRICE. With respect to radio subscriber unit purchases, "Contract Price" means the price for the ordered Products or services, excluding any applicable sales or similar taxes and freight charges, as shown on Exhibit C-6 – Equipment List and Exhibit C-8 – Pricing. Customer will pay the Contract Price as correctly stated in an order when due in U.S. dollars.

INVOICING AND PAYMENT. Motorola will submit invoices to Customer for Products that are listed as Customer-Funded when they are shipped and for services, if applicable, when they are performed. Customer will make payments to Motorola within twenty (20) days after the date of each invoice. Customer will make payments when due in the form of a wire transfer, check, or cashier's check from a U.S. financial institution. Overdue invoices will bear simple interest at the maximum allowable rate. For Customer's reference, the Federal Tax Identification Number for Motorola Solutions, Inc. is 36-1115800.

Customer-Funded(Ex B):		
Arlington Heights	$878,751.08	Cash
Elk Grove	$918,670.50	Cash
Palatine	$743,587.61	Cash
Palatine Rural	$88,434.26	Cash
Prospect Heights	$93,302.79	Cash
Rolling Meadows	$357,549.75	Cash
Schaumburg Park district	$20,467.56	Cash
Buffalo Grove	$615,418.00	Cash
Hoffman Estates	$1,238931.84	Cash
Mount Prospect	$797,458.05	Cash
Streamwood	$545,456.29	Cash
Schaumburg	$776,232.05	Cash
Inverness	$45,620.18	Cash
NWCD	$59,970.02	Cash
Discount for Order by 12/28/11	-$82,000	
Grand Total	**$7,097,849.98**	

INVOICING AND SHIPPING ADDRESSES.

Invoices will be sent to the Customer at the following address:

Northwest Central 9-1-1 System
1975 E. Davis Street
Arlington Heights, IL 60005

The address which is the ultimate destination where the Equipment will be delivered to Customer is:

Northwest Central 9-1-1 System
1975 E. Davis Street
Arlington Heights, IL 60005

The Equipment will be shipped to the Customer at the following address (insert if this information is known):

Chicago Communications LLC
200 Spangler Ave
Elmhurst, IL 60126

Customer may change this information by giving written notice to Motorola. Any Eligible Purchaser other than Customer will provide in writing to Motorola the information identified in this Exhibit B-1 immediately upon becoming an Eligible Purchaser.

Exhibits C-6 through C-8
Technical and Implementation Documents

RADIO SUBSCRIBER UNITS ONLY

Exhibit C-6 – Equipment List dated December 8, 2011;
Exhibit C-7 – Warranty Statement of Work dated December 8, 2011; and
Exhibit C-8 – NWCD Revised Pricing Summary dated December 13, 2011
Exhibit C-9 – External Agency Purchasing Agreement dated December 13, 2011;
Exhibit C-10 – Motorola's Proposal dated July 18, 2011; and
Exhibit C-11 – Customer's RFQ dated June 21, 2011.

Exhibit C-6

Exhibit C-6
Equipment List
December 8, 2011

Qty	Description	Part Number
29	APX6000 7/800 MHZ MODEL 1 PORTABLE	H98UCD9PW5 N
29	ENH: DIGITAL 9600 TRUNKING ONLY	QA02756
29	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
29	ADD: TDMA OPERATION	QA00580
29	ADD: RADIO PACKET DATA	Q947
29	ADD: PROGRAMMING OVER P25 (OTAP) - Q947 REQUIRED	G996
29	ENH: AES ENCRYPTION	Q629
29	ENH: MULTIKEY	H869
29	ADD: ENABLE INTERNAL GPS OPERATION	QA00782
29	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	H886AQ
18	APX6000 7/800 MHZ MODEL 1 PORTABLE	H98UCD9PW5 N
18	ENH: DIGITAL 9600 TRUNKING ONLY	QA02756
16	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
16	ADD: TDMA OPERATION	QA00580
18	ADD: RADIO PACKET DATA	Q947
18	ADD: PROGRAMMING OVER P25 (OTAP) - Q947 REQUIRED	G996
18	ALT: LIION IMPRES FM 2300	QA0218
16	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	H886AQ
10	APX6000 7/800 MHZ MODEL 1 PORTABLE	H98UCD9PW5 N
10	ENH: DIGITAL 9600 TRUNKING ONLY	QA02756
10	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
10	ADD: TDMA OPERATION	QA00580
10	ADD: RADIO PACKET DATA	Q947
10	ADD: PROGRAMMING OVER P25 (OTAP) - Q947 REQUIRED	G996
10	ENH: AES ENCRYPTION	Q629
10	ENH: MULTIKEY	H869
10	ALT: LIION IMPRES FM 2300	QA0218
10	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	H886AQ
38	APX6000 7/800 MHZ MODEL 1 PORTABLE	H98UCD9PW5 N
38	ADD: ASTRO DIGITAL CAI OPERATION	Q806
38	ADD: SMARTZONE OPERATION	H38
38	ADD: P25 9600 BAUD TRUNKING	Q361
38	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
38	ADD: TDMA OPERATION	QA00580
38	ADD: RADIO PACKET DATA	Q947
36	ADD: PROGRAMMING OVER P25 (OTAP) - Q947 REQUIRED	G996
36	ADD: ENABLE INTERNAL GPS OPERATION - Q947 REQUIRED	QA00782
38	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	H886AQ
12	APX6000 7/800 MHZ MODEL 1 PORTABLE	H98UCD9PW5 N
12	ADD: ASTRO DIGITAL CAI OPERATION	Q806
12	ADD: SMARTZONE OPERATION	H38
12	ADD: P25 9600 BAUD TRUNKING	Q361
12	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
12	ADD: TDMA OPERATION	QA00580
12	ADD: RADIO PACKET DATA	Q947
12	ADD: PROGRAMMING OVER P25 (OTAP) - Q947 REQUIRED	G996
12	ENH: AES ENCRYPTION	Q629
12	ENH: MULTIKEY	H869
12	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	H886AQ
11	APX6000 7/800 MHZ MODEL 1 PORTABLE	H98UCD9PW5 N
11	ADD: ASTRO DIGITAL CAI OPERATION	Q806
11	ADD: SMARTZONE OPERATION	H38
11	ADD: P25 9600 BAUD TRUNKING	Q361
11	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
11	ADD: TDMA OPERATION	QA00580
11	ADD: RADIO PACKET DATA	Q947
11	ADD: PROGRAMMING OVER P25 (OTAP) - Q947 REQUIRED	G996
11	ENH: AES ENCRYPTION	Q629
11	ALT: LIION IMPRES 2900 MAH IP67 (NNTN7038)	QA001837
11	ENH: MULTIKEY	H869
11	ADD: ENABLE INTERNAL GPS OPERATION - Q947 REQUIRED	QA00782
11	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	H886AQ
323	APX6000 7/800 MHZ MODEL 1 PORTABLE	H98UCD9PW5 N
323	ADD: ASTRO DIGITAL CAI OPERATION	Q806
323	ADD: SMARTZONE OPERATION	H38
323	ADD: P25 9600 BAUD TRUNKING	Q361
323	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
323	ADD: TDMA OPERATION	QA00580
323	ADD: RADIO PACKET DATA	Q947
323	ADD: PROGRAMMING OVER P25 (OTAP) - Q947 REQUIRED	G996
323	ENH: AES ENCRYPTION	Q629
323	ENH: MULTIKEY	H869
323	ADD: ENABLE INTERNAL GPS OPERATION - Q947 REQUIRED	QA00782
323	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	H886AQ
88	APX6000 7/800 MHZ MODEL 1 PORTABLE	H98UCD9PW5 N
88	ADD: ASTRO DIGITAL CAI OPERATION	Q806
88	ADD: SMARTZONE OPERATION	H38
88	ADD: P25 9600 BAUD TRUNKING	Q361
88	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
88	ADD: TDMA OPERATION	QA00580
88	ADD: RADIO PACKET DATA	Q947
88	ADD: PROGRAMMING OVER P25 (OTAP) - Q947 REQUIRED	G996
88	ENH: AES ENCRYPTION	Q629
88	ENH: MULTIKEY	H869
88	ADD: ENABLE INTERNAL GPS OPERATION - Q947 REQUIRED	QA00782
88	ALT: LIION IMPRES FM 2300 (NNTN8092)	QA02818

88	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	H886AO
430	APX6000 700/800 MODEL 2 PORTABLE	H98UCF9PW8 N
430	ADD: ASTRO DIGITAL CAI OPERATION	Q806
430	ADD: SMARTZONE OPERATION	H38
430	ADD: P25 9600 BAUD TRUNKING	Q361
430	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
430	ADD: TDMA OPERATION	QA00580
430	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	H886AO
430	ADD. RADIO PACKET DATA	Q947
430	ADD: PROGRAMMING OVER P25 (OTAP) - Q947 REQUIRED	G996
430	ENH: AES ENCRYPTION	Q629
430	ENH: MULTIKEY	H869
430	ADD: ENABLE INTERNAL GPS OPERATION - Q947 REQUIRED	QA00782
6	APX6000 700/800 MODEL 3 PORTABLE	H98UCH9PW7 N
6	ADD: ASTRO DIGITAL CAI OPERATION	Q806
6	ADD: SMARTZONE OPERATION	H38
6	ADD: P25 9600 BAUD TRUNKING	Q361
6	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
6	ADD: TDMA OPERATION	QA00580
6	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	H886AO
6	ADD. RADIO PACKET DATA	Q947
6	ADD: PROGRAMMING OVER P25 (OTAP) - Q947 REQUIRED	G996
6	ENH: AES ENCRYPTION	Q629
6	ENH: MULTIKEY	H869
6	ADD: ENABLE INTERNAL GPS OPERATION - Q947 REQUIRED	QA00782
119	APX7000 DIGITAL PORTABLE RADIO	H97TGD9PW1 N
119	ADD: 7/800MHZ PRIMARY BAND	QA00569
119	ADD: ASTRO DIGITAL CAI OPERATION	Q806
119	ADD: SMARTZONE OPERATION	H38
119	ADD: P25 9600 BAUD TRUNKING	Q361
119	ADD: TDMA OPERATION	QA00580
119	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
119	ADD: RADIO PACKET DATA	Q947
119	ADD: PROGRAMMING OVER P25 (OTAP) - Q947 REQUIRED	G996
119	ENH: AES ENCRYPTION	Q629
119	ADD: OPTION BOARD MODULE	QA01729
119	ENH: MULTIKEY	H869
119	ADD: ENABLE INTERNAL GPS OPERATION	QA00782
119	ADD: ENABLE DUAL BAND OPERATION	QA00579
119	ADD: VHF SECONDARY BAND	QA00574
119	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	GA00232
15	APX7000 DIGITAL PORTABLE RADIO	H97TGD9PW1 N
15	ADD: LARGE COLOR DISPLAY AND FULL KEYPAD	QA00577
15	ADD: 7/800MHZ PRIMARY BAND	QA00569
15	ADD: ASTRO DIGITAL CAI OPERATION	Q806
15	ADD: SMARTZONE OPERATION	H38
15	ADD: P25 9600 BAUD TRUNKING	Q361
15	ADD: TDMA OPERATION	QA00580
15	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
15	ADD: RADIO PACKET DATA	Q947
15	ADD: PROGRAMMING OVER P25 (OTAP) - Q947 REQUIRED	G996
15	ENH: AES ENCRYPTION	Q629
15	ADD: OPTION BOARD MODULE	QA01729
15	ENH: MULTIKEY	H869
15	ADD: ENABLE INTERNAL GPS OPERATION	QA00782
15	ADD: ENABLE DUAL BAND OPERATION	QA00579
15	ADD: VHF SECONDARY BAND	QA00574
15	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	GA00232
39	APX7000XE DIGITAL PORTABLE RADIO	H49TGD9PW1 N
39	ADD: 7/800MHZ PRIMARY BAND	QA00569
39	ADD: ASTRO DIGITAL CAI OPERATION	Q806
39	ADD: SMARTZONE OPERATION	H38
39	ADD: P25 9600 BAUD TRUNKING	Q361
39	ADD: TDMA OPERATION	QA00580
39	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
39	ADD: RADIO PACKET DATA	Q947
39	ADD: PROGRAMMING OVER P25 (OTAP) - Q947 REQUIRED	G996
39	ENH: AES ENCRYPTION	Q629
39	ENH: MULTIKEY	H869
39	ADD: OPTION BOARD MODULE	QA01729
39	ADD: ENABLE DUAL BAND OPERATION	QA00579
39	ADD: VHF SECONDARY BAND	QA00574
39	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	GA00232
49	APX7000XE DIGITAL PORTABLE RADIO	H49TGD9PW1 N
49	ADD: 7/800MHZ PRIMARY BAND	QA00569
49	ADD: ASTRO DIGITAL CAI OPERATION	Q806
49	ADD: SMARTZONE OPERATION	H38
49	ADD: P25 9600 BAUD TRUNKING	Q361
49	ADD: TDMA OPERATION	QA00580
49	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
49	ADD: RADIO PACKET DATA	Q947
49	ADD. PROGRAMMING OVER P25 (OTAP) - Q947 REQUIRED	G996
49	ENH: AES ENCRYPTION	Q629
49	ENH: MULTIKEY	H869
49	ADD: OPTION BOARD MODULE	QA01729
49	ADD: ENABLE DUAL BAND OPERATION	QA00579
49	ADD: VHF SECONDARY BAND	QA00574
49	ALT: NIMH IMPRESS 2000 MAH FM DELTA T (NNTN7035A)	QA00581
49	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	GA00232
55	APX7000XE DIGITAL PORTABLE RADIO	H49TGD9PW1 N
55	ADD: 7/800MHZ PRIMARY BAND	QA00569
55	ADD: ASTRO DIGITAL CAI OPERATION	Q806
55	ADD: SMARTZONE OPERATION	H38
55	ADD. P25 9600 BAUD TRUNKING	Q361
55	ADD. TDMA OPERATION	QA00580
55	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
55	ADD: RADIO PACKET DATA	Q947
55	ADD: PROGRAMMING OVER P25 (OTAP) - Q947 REQUIRED	G996
65	ENH: AES ENCRYPTION	Q629
65	ENH: MULTIKEY	H869

55	ADD: OPTION BOARD MODULE	QA01729
55	ADD: ENABLE INTERNAL GPS OPERATION	QA00782
55	ALT: APX7000 LIION 4000MAH IMPRES FM IP67 BATT	QA00592
55	ADD: ENABLE DUAL BAND OPERATION	QA00579
55	ADD: VHF SECONDARY BAND	QA00574
55	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	GA00232
150	APX7000XE DIGITAL PORTABLE RADIO	H49TGD9PW1 N
150	ADD: 7/800MHZ PRIMARY BAND	QA00569
150	ADD: ASTRO DIGITAL CAI OPERATION	Q806
150	ADD: SMARTZONE OPERATION	H36
150	ADD: P25 9600 BAUD TRUNKING	Q361
150	ADD: TDMA OPERATION	QA00580
150	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
150	ADD: RADIO PACKET DATA	Q947
150	ADD: PROGRAMMING OVER P25 (OTAP) - Q947 REQUIRED	G996
150	ENH: AES ENCRYPTION	Q629
150	ENH: MULTIKEY	H869
150	ADD: OPTION BOARD MODULE	QA01729
150	ADD: ENABLE INTERNAL GPS OPERATION	QA00782
150	ADD: ENABLE DUAL BAND OPERATION	QA00579
150	ADD: VHF SECONDARY BAND	QA00574
150	ALT: NIMH IMPRESS 2000 MAH FM DELTA T (NNTN7035A)	QA00581
150	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	GA00232
75	APX7000XE DIGITAL PORTABLE RADIO	H49TGD9PW1 N
75	ADD: 7/800MHZ PRIMARY BAND	QA00569
75	ADD: ASTRO DIGITAL CAI OPERATION	Q806
75	ADD: SMARTZONE OPERATION	H36
75	ADD: P25 9600 BAUD TRUNKING	Q361
75	ADD: TDMA OPERATION	QA00580
75	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
75	ADD: RADIO PACKET DATA	Q947
75	ADD: PROGRAMMING OVER P25 (OTAP) - Q947 REQUIRED	G996
75	ENH: AES ENCRYPTION	Q629
75	ENH: MULTIKEY	H869
75	ADD: OPTION BOARD MODULE	QA01729
75	ADD: ENABLE INTERNAL GPS OPERATION	QA00782
75	ADD: ENABLE DUAL BAND OPERATION	QA00579
75	ADD: VHF SECONDARY BAND	QA00574
75	ALT: NIMH IMPRESS 2000 MAH FM DELTA T (NNTN7035A)	QA00581
75	ADD: MAN DOWN	QA01843
75	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	GA00232
7	APX7000XE DIGITAL PORTABLE RADIO	H49TGD9PW1 N
7	ADD: 7/800MHZ PRIMARY BAND	QA00569
7	ADD: ASTRO DIGITAL CAI OPERATION	Q806
7	ADD: SMARTZONE OPERATION	H36
7	ADD: P25 9600 BAUD TRUNKING	Q361
7	ADD: TDMA OPERATION	QA00580
7	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
7	ADD: RADIO PACKET DATA	Q947
7	ADD: PROGRAMMING OVER P25 (OTAP) - Q947 REQUIRED	G996
7	ENH: AES ENCRYPTION	Q629
7	ENH: MULTIKEY	H869
7	ADD: ENABLE INTERNAL GPS OPERATION	QA00782
7	ADD: OPTION BOARD MODULE	QA01729
7	ADD: ENABLE DUAL BAND OPERATION	QA00579
7	ADD: VHF SECONDARY BAND	QA00574
7	ALT: NIMH IMPRESS 2000 MAH FM DELTA T (NNTN7035A)	QA00581
7	ADD: BLUETOOTH	QA00583
7	ADD: MAN DOWN	QA01843
7	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	GA00232
20	APX6500 7/800 MHZ MID POWER MOBILE	M25URS9PW1AN
20	ENH: DIGITAL 9600 TRUNKING ONLY	QA02756
20	ADD: DASH MOUNT 05	G66
20	ADD: APX 05 CONTROL HEAD	G442
20	ADD: CONTROL HEAD SOFTWARE	G444
20	ADD: ANT 3DB LOW-PROFILE 762-870	G335
20	ADD: PALM MICROPHONE	W22
20	ADD: AUXILARY SPKR 7.5W	B18
20	ADD: TDMA OPERATION	QA00580
20	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
20	ADD: RS232 PACKET DATA INTERFACE	W947
20	ENH: OVER THE AIR PROVISIONING - W947 REQUIRED	G996
20	ADD: AES ENCRYPTION APX7500	G843
20	ADD: MULTIKEY	W969
20	ADD: GPS ACTIVATION	QA00229
20	ADD: GPS ANTENNA	QA00228
20	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	GA398AU
70	APX6500 7/800 MHZ MID POWER MOBILE	M25URS9PW1AN
70	ENH: DIGITAL 9600 TRUNKING ONLY	QA02756
70	ADD: DASH MOUNT 05	G66
70	ADD: APX 05 CONTROL HEAD	G442
70	ADD: CONTROL HEAD SOFTWARE	G444
70	ADD: ANT 3DB LOW-PROFILE 762-870	G335
70	ADD: PALM MICROPHONE	W22
70	ADD: AUXILARY SPKR 7.5W	B18
70	ADD: TDMA OPERATION	QA00580
70	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
70	ADD: RS232 PACKET DATA INTERFACE	W947
70	ENH: OVER THE AIR PROVISIONING - W947 REQUIRED	G996
70	ADD: GPS ACTIVATION	QA00229
70	ADD: GPS ANTENNA	QA00228
70	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	GA398AU
59	APX6500 7/800 MHZ MID POWER MOBILE	M25URS9PW1AN
59	ENH: DIGITAL 9600 TRUNKING ONLY	QA02756
59	ADD: DASH MOUNT 05	G66
59	ADD: APX 05 CONTROL HEAD	G442
59	ADD: CONTROL HEAD SOFTWARE	G444
59	ADD: ANT 3DB LOW-PROFILE 762-870	G335
59	ADD: KEYPAD MICROPHONE	W20
59	ADD: AUXILARY SPKR 7.5W	B16

59	ADD: TDMA OPERATION	QA00580
59	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
59	ADD: RS232 PACKET DATA INTERFACE	W947
59	ENH: OVER THE AIR PROVISIONING - W947 REQUIRED	G996
59	ADD: AES ENCRYPTION APX7500	G843
59	ADD: MULTIKEY	W969
59	ADD: GPS ACTIVATION	GA00229
59	ADD: GPS ANTENNA	GA00228
59	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	GA398AU
4	APX6500 7/800 MHZ MID POWER MOBILE	M25URS9PW1 N
4	ENH: DIGITAL 9600 TRUNKING ONLY	QA02758
4	ADD: REMOTE MOUNT MID POWER	G87
4	ADD: APX O5 CONTROL HEAD	G442
4	ADD: CONTROL HEAD SOFTWARE	G444
4	ADD: ANT 3DB LOW-PROFILE 762-870	G335
4	ADD: KEYPAD MICROPHONE	W20
4	ADD: AUXILARY SPKR 7.5W	B18
4	ADD: TDMA OPERATION	QA00580
4	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
4	ADD: RS232 PACKET DATA INTERFACE	W947
4	ENH: OVER THE AIR PROVISIONING - W947 REQUIRED	G996
4	ADD: AES ENCRYPTION APX7500	G843
4	ADD: MULTIKEY	W969
4	ADD: GPS ACTIVATION	GA00229
4	ADD: GPS ANTENNA	GA00226
4	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	GA398AU
59	APX6500 7/800 MHZ MID POWER MOBILE	M25URS9PW1AN
59	ENH: ASTRO DIGITAL CAI OP APX	G806
59	ENH: SMARTZONE OPERATION APX6500	G51
59	ADD: P25 TRUNKING SOFTWARE	G361
59	ADD: DASH MOUNT O5	G66
59	ADD: APX O5 CONTROL HEAD	G442
59	ADD: CONTROL HEAD SOFTWARE	G444
59	ADD: ANT 3DB LOW-PROFILE 762-870	G335
59	ADD: KEYPAD MICROPHONE	W20
59	ADD: AUXILARY SPKR 7.5W	B18
59	ADD: TDMA OPERATION	QA00580
59	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
59	ADD: RS232 PACKET DATA INTERFACE	W947
59	ENH: OVER THE AIR PROVISIONING - W947 REQUIRED	G996
59	ADD: AES ENCRYPTION APX7500	G843
59	ADD: MULTIKEY	W969
59	ADD: GPS ACTIVATION	GA00228
59	ADD: GPS ANTENNA	GA00226
59	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	GA398AU
60	APX6500 7/800 MHZ MID POWER MOBILE	M25URS9PW1 N
60	ENH: ASTRO DIGITAL CAI OP APX	G806
60	ENH: SMARTZONE OPERATION APX6500	G51
60	ADD: P25 TRUNKING SOFTWARE	G361
60	ADD: REMOTE MOUNT MID POWER	G87
60	ADD: APX O5 CONTROL HEAD	G442
60	ADD: CONTROL HEAD SOFTWARE	G444
60	ADD: ANT 3DB LOW-PROFILE 762-870	G335
60	ADD: PALM MICROPHONE	W22
60	ADD: AUXILARY SPKR 7.5W	B18
60	ADD: TDMA OPERATION	QA00580
60	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
60	ADD: RS232 PACKET DATA INTERFACE	W947
60	ENH: OVER THE AIR PROVISIONING - W947 REQUIRED	G996
60	ADD: AES ENCRYPTION APX7500	G843
60	ADD: MULTIKEY	W969
60	ADD: GPS ACTIVATION	GA00228
60	ADD: GPS ANTENNA	GA00226
60	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	GA398AU
17	APX6500 7/800 MHZ MID POWER MOBILE	M25URS9PW1 N
17	ENH: ASTRO DIGITAL CAI OP APX	G806
17	ENH: SMARTZONE OPERATION APX6500	G51
17	ADD: P25 TRUNKING SOFTWARE	G361
17	ADD: REMOTE MOUNT MID POWER	G87
17	ADD: APX O5 CONTROL HEAD	G442
17	ADD: CONTROL HEAD SOFTWARE	G444
17	ADD: ANT 3DB LOW-PROFILE 762-870	G335
17	ADD: KEYPAD MICROPHONE	W20
17	ADD: AUXILARY SPKR 7.5W	B18
17	ADD: TDMA OPERATION	QA00580
17	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
17	ADD: RS232 PACKET DATA INTERFACE	W947
17	ENH: OVER THE AIR PROVISIONING - W947 REQUIRED	G996
17	ADD: AES ENCRYPTION APX7500	G843
17	ADD: MULTIKEY	W969
17	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	GA398AU
63	APX6500 7/800 MHZ MID POWER MOBILE	M25URS9PW1 N
63	ENH: ASTRO DIGITAL CAI OP APX	G806
63	ENH: SMARTZONE OPERATION APX6500	G51
63	ADD: P25 TRUNKING SOFTWARE	G361
63	ADD: REMOTE MOUNT MID POWER	G87
63	ADD: APX O5 CONTROL HEAD	G442
63	ADD: CONTROL HEAD SOFTWARE	G444
63	ADD: ANT 3DB LOW-PROFILE 762-870	G335
63	ADD: KEYPAD MICROPHONE	W20
63	ADD: AUXILARY SPKR 7.5W	B18
63	ADD: TDMA OPERATION	QA00580
63	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
63	ADD: RS232 PACKET DATA INTERFACE	W947
63	ENH: OVER THE AIR PROVISIONING - W947 REQUIRED	G996
63	ADD: AES ENCRYPTION APX7500	G843
63	ADD: MULTIKEY	W969
63	ADD: GPS ACTIVATION	GA00229
63	ADD: GPS ANTENNA	GA00228
63	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	GA398AU
17	APX6500 7/800 MHZ MID POWER MOBILE	M25URS9PW1AN

17	ENH: ASTRO DIGITAL CAI OP APX	G806
17	ENH: SMARTZONE OPERATION APX6500	G51
17	ADD: P25 TRUNKING SOFTWARE	G361
17	ADD: REMOTE MOUNT MID POWER	G67
17	ADD: APX O5 CONTROL HEAD	G442
17	ADD: CONTROL HEAD SOFTWARE	G444
17	ADD: DUAL-CONTROL HARDWARE	GA00092
34	ADD: REMOTE MOUNT CBL 17 FEET	G628
17	ADD: ANT 3DB LOW-PROFILE 762-870	G335
34	ADD: KEYPAD MICROPHONE	W20
34	ADD; AUXILARY SPKR 7.5W	B18
17	ADD: TDMA OPERATION	QA00580
17	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
17	ADD: RS232 PACKET DATA INTERFACE	W947
17	ENH: OVER THE AIR PROVISIONING - W947 REQUIRED	G996
17	ADD: AES ENCRYPTION APX7500	G843
17	ADD: MULTIKEY	W969
17	ADD: GPS ACTIVATION	GA00229
17	ADD: GPS ANTENNA	GA00226
17	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	GA398AU
10	APX7500 DUAL BAND MID POWER	M30TSS9PW1 N
10	ADD: 7/800MHZ PRIMARY BAND	GA00244
10	ENH: IMBE ASTRO DIGITAL CAI OPERATION	G806
10	ENH: ENHANCED SMARTNET OP APX	G51
10	ADD: P25 TRUNKING SOFTWARE	G361
10	ADD: DASH MOUNT 05	G66
10	ADD: APX O5 CONTROL HEAD	G442
10	ADD: CONTROL HEAD SOFTWARE	G444
10	ADD: ANT 3DB LOW-PROFILE 762-870	G335
10	ADD: KEYPAD MICROPHONE	W20
10	ADD: AUXILARY SPKR 7.5W	B18
10	ADD: TDMA OPERATION	QA00580
10	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
10	ADD: RS232 PACKET DATA INTERFACE	W947
10	ENH: OVER THE AIR PROVISIONING - W947 REQUIRED	G996
10	ADD: AES ENCRYPTION APX7500	G843
10	ADD: MULTIKEY	W969
10	ADD: GPS ACTIVATION	GA00229
10	ADD: ENABLE DUAL BAND OPERATION	GA00578
10	ADD: VHF HP SECONDARY BAND	GA00308
10	ADD:VHF ANT WIDEBAND 146-174 MHZ	G629
10	ADD: GPS ANTENNA	GA00226
10	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	GA00232
2	APX7500 DUAL BAND MID POWER	M30TSS9PW1 N
2	ADD: 7/800MHZ PRIMARY BAND	GA00244
2	ENH: IMBE ASTRO DIGITAL CAI OPERATION	G806
2	ENH: ENHANCED SMARTNET OP APX	G51
2	ADD: P25 TRUNKING SOFTWARE	G361
2	ADD: DASH MOUNT 05	G66
2	ADD: APX O5 CONTROL HEAD	G442
2	ADD: CONTROL HEAD SOFTWARE	G444
2	ADD: ANT 3DB LOW-PROFILE 762-870	G335
2	ADD: PALM MICROPHONE	W22
2	ADD: AUXILARY SPKR 7.5W	B18
2	ADD: TDMA OPERATION	QA00580
2	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
2	ADD: RS232 PACKET DATA INTERFACE	W947
2	ENH: OVER THE AIR PROVISIONING - W947 REQUIRED	G996
2	ADD: AES ENCRYPTION APX7500	G843
2	ADD: MULTIKEY	W969
2	ADD: GPS ACTIVATION	GA00229
2	ADD: ENABLE DUAL BAND OPERATION	GA00579
2	ADD: VHF HP SECONDARY BAND	GA00308
2	ADD:VHF ANT WIDEBAND 146-174 MHZ	G629
2	ADD: GPS ANTENNA	GA00226
2	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	GA00232
3	APX7500 DUAL BAND HIGH POWER	M30TX59PW1 N
3	ADD: 7/800MHZ PRIMARY BAND	GA00244
3	ENH: IMBE ASTRO DIGITAL CAI OPERATION	G806
3	ENH: ENHANCED SMARTNET OP APX	G51
3	ADD: P25 TRUNKING SOFTWARE	G361
3	ADD: REMOTE MOUNT	G67
3	ADD: APX O5 CONTROL HEAD	G442
3	ADD: CONTROL HEAD SOFTWARE	G444
3	ADD: ANT 3DB LOW-PROFILE 762-870	G335
3	ADD: PALM MICROPHONE	W22
3	ADD: AUXILARY SPKR 7.5W	B18
3	ADD: TDMA OPERATION	QA00580
3	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
3	ADD: RS232 PACKET DATA INTERFACE	W947
3	ENH: OVER THE AIR PROVISIONING - W947 REQUIRED	G996
3	ADD: AES ENCRYPTION APX7500	G843
3	ADD: MULTIKEY	W969
3	ADD: GPS ACTIVATION	GA00229
3	ADD: ENABLE DUAL BAND OPERATION	GA00579
3	ADD: VHF HP SECONDARY BAND	GA00309
3	ADD:VHF ANT WIDEBAND 146-174 MHZ	G629
3	ADD: GPS ANTENNA	GA00226
3	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	GA00232
1	APX7500 DUAL BAND HIGH POWER	M30TX59PW1 N
1	ADD: 7/800MHZ PRIMARY BAND	GA00244
1	ENH: IMBE ASTRO DIGITAL CAI OPERATION	G806
1	ENH: ENHANCED SMARTNET OP APX	G51
1	ADD: P25 TRUNKING SOFTWARE	G361
1	ADD: REMOTE MOUNT MID POWER	G67
1	ADD: APX O5 CONTROL HEAD	G442
1	ADD: CONTROL HEAD SOFTWARE	G444
1	ADD: DUAL-CONTROL HARDWARE	GA00092
2	ADD: REMOTE MOUNT CBL 17 FEET	G628
1	ADD: ANT 3DB LOW-PROFILE 762-870	G335
2	ADD: KEYPAD MICRDPHONE	W20

2	ADD: AUXILARY SPKR 7.5W	B18
1	ADD: TDMA OPERATION	QA00580
1	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
1	ADD: RS232 PACKET DATA INTERFACE	W947
1	ENH: OVER THE AIR PROVISIONING - W947 REQUIRED	G996
1	ADD: AES ENCRYPTION APX7500	G843
1	ADD: MULTIKEY	W969
1	ADD: GPS ACTIVATION	QA00228
1	ADD: ENABLE DUAL BAND OPERATION	QA00579
1	ADD: VHF HP SECONDARY BAND	QA00309
1	ADD: VHF ANT WIDEBAND 146-174 MHZ	G629
1	ADD: GPS ANTENNA	QA00225
1	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	QA00232
20	APX7500 DUAL BAND HIGH POWER	M30TXS9PW1 N
20	ADD: 7/800MHZ PRIMARY BAND	QA00244
20	ENH: IMBE ASTRO DIGITAL CAI OPERATION	G806
20	ENH: ENHANCED SMARTNET OP APX	G51
20	ADD: P25 TRUNKING SOFTWARE	G361
20	ADD: REMOTE MOUNT	G67
20	ADD: APX O5 CONTROL HEAD	G442
20	ADD: CONTROL HEAD SOFTWARE	G444
20	ADD: ANT 3DB LOW-PROFILE 762-870	G335
20	ADD: KEYPAD MICROPHONE	W20
20	ADD: AUXILARY SPKR 7.5W	B18
20	ADD: TDMA OPERATION	QA00580
20	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
20	ADD: RS232 PACKET DATA INTERFACE	W947
20	ENH: OVER THE AIR PROVISIONING - W947 REQUIRED	G996
20	ADD: AES ENCRYPTION APX7500	G843
20	ADD: MULTIKEY	W969
20	ADD: GPS ACTIVATION	QA00220
20	ADD: ENABLE DUAL BAND OPERATION	QA00579
20	ADD: VHF HP SECONDARY BAND	QA00309
20	ADD:VHF ANT WIDEBAND 146-174 MHZ	G629
20	ADD: GPS ANTENNA	QA00725
20	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	QA00232
34	APX7500 SINGLE BAND CONSOLETTE	L30URS9PW1 N
34	ENH: ASTRO DIGITAL CAI OPERATION	G806
34	ENH: ENHANCED SMARTZONE OP APX	G51
34	ADD: P25 TRUNKING SOFTWARE	G361
34	ADD: TDMA OPERATION	QA00580
34	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
34	ADD: AC LINE CORD US	CA01698
34	ADD: FULL FRONT PANEL W/O5/KEYPAD/CLOCK/VU	L999
34	ADD: CONTROL STATION DESK GCAI MIC	W382
34	ADD: RS232 PACKET DATA INTERFACE	W947
34	ENH: OVER THE AIR PROVISIONING - W947 REQUIRED	G996
34	ADD: AES ENCRYPTION APX7500	G843
34	ADD: MULTIKEY	W969
34	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	QA00232
7	APX7500 CONSOLETTE DUAL BAND MODEL	L30TSS9PW1 N
7	ADD: PRIMARY BAND	QA00244
7	ADD: SECONDARY BAND	QA00308
7	ADD: ENABLE DUAL BAND OPERATION	QA00579
7	ENH: ASTRO DIGITAL CAI OPERATION	G806
7	ENH: ENHANCED SMARTZONE OP APX	G51
7	ADD: P25 TRUNKING SOFTWARE	G361
7	ADD: TDMA OPERATION	QA00580
7	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	QA01648
7	ADD: AC LINE CORD US	CA01698
7	ADD: FULL FRONT PANEL W/O5/KEYPAD/CLOCK/VU	L999
7	ADD: CONTROL STATION DESK GCAI MIC	W382
7	ADD: RS232 PACKET DATA INTERFACE	W947
7	ENH: OVER THE AIR PROVISIONING - W947 REQUIRED	G996
7	ADD: AES ENCRYPTION APX7500	G843
7	ADD: MULTIKEY	W969
7	ENH: 3 YEAR SVC EXTENDED WARRANTY (4 Years Total Warranty)	QA00232
39	MCD 5000 DESKSETS	F2380
40	IMPRES RSM NO DSPLY W JACK, NO CHNL	HMN4101A
2	IMPRES RSM DSPLY W JACK, NO CHNL	HMN4103A
157	IMPRES RSM DSPLY W JACK, W CHNL	HMN4104A
92	XE FIRE DEPARTMENT PSM	NNTN8203
20	IMPRES 3 WR W/TRANS TUBE BLK	PMLN5111A
4	HEAVY DUTY HEADSET PMLN5275B	PMLN5275B
93	PSM IP55 WITH 3.5MM JACK RX 18"	PMMN4059A
302	PSM IP55 WITH 3.5MM JACK RX 24"	PMMN4060A
170	PSM IP55 WITH 3.5MM JACK RX 30"	PMMN4061A
20	PLUS RSM NC IP54 3.5MM JACK RX	PMMN4062A
170	IMPRES RSM, IP57	PMMN4065A
229	RECEIVE ONLY EARPIECE	RLN4941
25	IMPRES 2 WR W/TRANS TUBE BLK	RLN5882A
12	EAR RCVR W/COIL CBL&3.5MM PLUG	WADN4190B
2	ASSY, MIC, FRNT, GRY, STD PALM MIC (GCAI)	HMN1090C
17	BATT IMP FM IP67 LION 4100M 4400T	NNTN7039A
278	BATT IMP STD IP67 LION 4200M 4400T	NNTN7034A
60	BATT IMP FM IP NIMH 2000M 2200T	NNTN7035A
132	BATT IMP STD IP67 NIMH 2100M 2300T	NNTN7037A
196	BATT IMP STD IP67 LION 2900M 3100T	NNTN7038A
163	BATT IMP LION 2300mAh, INTRINSICALLY SAFE	NNTN8092A
47	BATT IMP STD IP67 LION 2150M 2700T	PMNN4403A
50	APX7000XE - LEATHER CASE 2.75" SWL BL	NNTN8111
38	APX7000XE - LEATHER CASE 3" SWL BL	NNTN8112
60	APX7000XE - LEATHER CASE 3" FLIP BL	NNTN8116
52	ADJUSTABLE CARRYING STRAP	NTN5243
142	BELT CLIP	NTN8266B
96	LEATHER SWIVEL BELT LOOP & D-CLIP	NTN9179
2	APX7000 - LEATHER CASE 2.75" SWL BL 4200MAH	PMLN5327B
41	APX7000 DUAL DISPLAY LEATHER FLIP CARRY	PMLN5560
187	APX6000 - LEATHER CASE 2.75" SWL BL 2500MAH	PMLN5657A

94	APX6000 - LEATHER CASE 3" FIX BL	PMLN5658
133	APX6000 - LEATHER CASE 3" FIX BL	PMLN5660
33	700/800 WHIP ANTENNA	NAF5065A
173	GPS STUBBY ANTENNA	NAG4000A
479	PSM SINGLE BAND STUBBY ANTENNA 700/800 MHz	PMAF4002
28	WALL MOUNT FOR 6 POS CHARGER	NLN7967A
79	IMPRES CHRG MU MACKINAW US/NA/CA/LA	NNTN7065B
32	IMPRES CG MUD MACKINAW US/NA/CA/LA	NNTN7073B
219	IMPRES SINGLE UNIT CHARGER	NNTN7080A
10	CHR IMP DUC EXT US/NA/CA/LA	NNTN7586A
11	CHR IMP DISP DUC EXT US/NA/CA/LA	NNTN7593A
131	CHR IMP IN-VEH EXT NA/EU KIT	NNTN7624B
5	FLEET MANAGEMENT RELEASE 1.0	NNTN7676B
9	FLEET MNGMNT CHRGR INTERFACE UNIT	NNTN7677A
20	IMPRES MUC ADAPTER	NNTN7686A
73	IMPRES SUC ADAPTER	NNTN7687A
4	CHRGR INTRFCE UNT GEN 3 IMPRES SUC	NNTN8015A
13	APX TRAVEL CHARGER	RLN6434A
79	SINGLE POS CHARGER	WPLN7050A
18	APX 7000 Model 3 - Green Sleeve	XHN7062AS
9	APX 7000 Model 3 - Blue Sleeve	XHN7056AS
8	HAND MIC (GCAI), WATER RESISTANT	HKN1089B
2	MOBILE PWR CABLE 10FT, 12 AWG, 20A	HKN1191B
8	MOBILE PWR CABLE 20FT, 10 AWG, 20A	HKN1192B
8	CABLE, REMOTE MOUNT, 3M	HKN5169B

Exhibit C-7

Warranty Statement of Work

Exhibit C-7

December 8, 2011

4.1.1 Warranty

Warranty Service Overview	Included	Optional
Repair Service Advantage (RSA)	✓	
Local Radio Support – Pick-up & Delivery	✓	
Local Radio Support – Radio Survey and Analysis	✓	

4.1.2 Included Services

Motorola's comprehensive warranty and maintenance services address all of Northwest Central Dispatch's day-to-day and emergency communication needs for seamless system operations.

Motorola's service delivery process has evolved to meet the challenging demands of mission critical users. Our support systems are designed to detect potential system problems, before they occur, and proactively take the steps necessary to restore a system to normal operation quickly and efficiently. Our case escalation and management process is designed to ensure that all cases are managed successfully and that the appropriate resource is assigned when necessary.

Northwest Central Dispatch can be confident that Motorola will be a trusted and loyal partner every step of the way. From the initial system purchase, through the migratory future upgrades, Motorola will continue to deliver a service support

to equipment that enables them to recreate the network issue at hand and design a solution for fast resolution. Development software and hardware engineers provide a third level of support and are brought in to consult on the Northwest Central Dispatch system as needed. This multi-tiered team of technical support professionals identifies every possible issue that could potentially impact the Northwest Central Dispatch system and reviews issues for quick and successful resolution to the NWCD's complete satisfaction.

4.1.4.1 Local Radio Support and Radio Repair Advantage

Motorola recognizes that mobile and portable subscriber support issues do not normally require the diagnostic and escalation process that is so integral to infrastructure support. Therefore, Northwest Central Dispatch can best implement mobile and portable subscriber support by either forwarding units in need of repair directly to Motorola's **Radio Support Center** (RSC) Depot or receive first echelon support from their local technicians and/or the Authorized Motorola Local Service. The following figure provides an overview of this process within the Mobile and Portable Subscriber Service Plan.

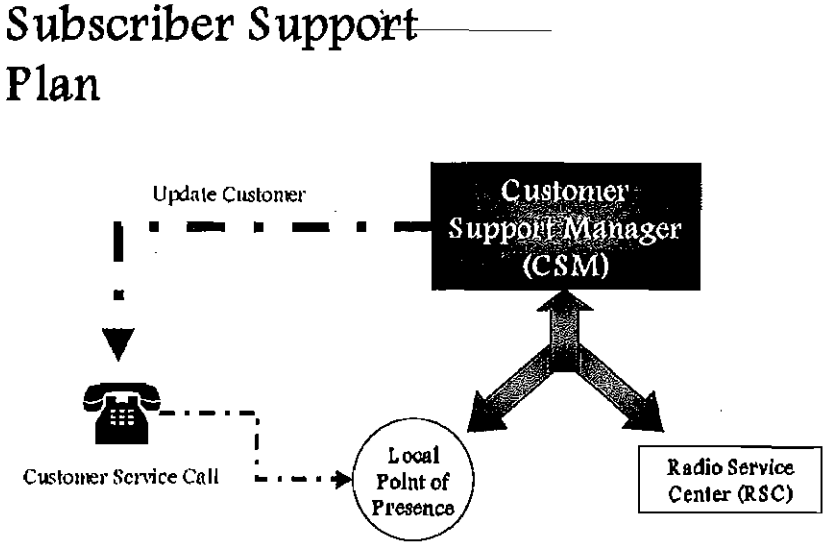

Figure 2: Subscriber Support Plan.

Motorola's Radio Support Center Depot was designed to provide expertise in the full range of Motorola subscriber devices. Technicians specially selected for their expertise in the Motorola mobile and portable subscriber portfolio will test and repair

malfunctioning radios down to the component level, utilizing state-of-the-art equipment.

All modified or repaired equipment will be configured and verified before it is shipped back to Northwest Central Dispatch. Once repaired, the equipment is tested and restored to Motorola Factory Specifications to ensure that the equipment is in the best operating condition possible. This also helps eliminate problems before they occur and ensures maximum uptime for the customer's mobile and portable radios. Motorola will also maintain past and current versions of firmware to ensure the equipment sent back to Northwest Central Dispatch is programmed correctly.

4.2 Annual Maintenance Support Plan

After the warranty period, Motorola offers a suite of services to support the Northwest Central Dispatch system. These services will provide a seamless transition from warranty to on-going maintenance support to provide peak system performance throughout the system life cycle. Northwest Central Dispatch can tailor a support program to uniquely match its specific needs.

Motorola strongly encourages Northwest Central Dispatch to evaluate the suite of service products provided during the warranty period to establish an appropriate level of support for ongoing maintenance. Prior to the end of the warranty period, the Motorola Customer Support Manager will meet with Northwest Central Dispatch to develop a plan for post warranty support that meets operational and budgetary requirements. It is recommended that all of the services provided during the warranty be continued in the post-warranty periods. A comprehensive life cycle support plan will help to protect the investment over the life of the system.

Table Error! No text of specified style in document.-1: **Annual Maintenance Support**

Warranty Service Overview	Included	Optional
Repair Service Advantage (RSA)	✓	
Local Radio Support – Pick-up & Delivery	✓	
Local Radio Support – Radio Survey and Analysis	✓	

4.3 Summary

Motorola is the best choice for warranty and support of the Northwest Central Radio System. Motorola's experience is without equal in delivering support to public safety agencies and is the world leader in wireless technology. We have the skilled resources, capacity, and experience to respond to any contingency in support of the Northwest Central Dispatch System. The Motorola support team is committed to the safety and security of the citizens of the Northwest Central Dispatch Area. We recognize the importance of fast and effective response to system issues. Whether it's

a routine service call or a disaster situation, Motorola understands its responsibility and takes pride in its proven response to the public safety community.

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Repair Service Advantage (Service Agreement)
End Users

1.0 Description

Repair Service Advantage provides board level service for the Equipment that is specifically named in the applicable agreement to which this Statement of Work (SOW) is attached or any of the agreement's subsequent revisions. Services are performed at the Radio Support Center (RSC), or Federal Technical Support Center.

In addition to Equipment specifically named in the applicable agreement to which this Statement of Work is attached, Repair Service Advantage includes service on single mobile control heads provided that they are required for normal operation of the Equipment and are included at the point of manufacture.

Repair Service Advantage excludes repairs to: optional accessories; standard mobile palm microphones; non-standard mobile microphones; iDEN accessories; iDEN mobile microphones; portable remote speaker microphones; optional or additional control heads; mobile external speakers; single and multiple unit portable chargers; batteries; mobile power and antenna cables; mobile antennas; portable antennas, and power supplies. Engraving service is not covered under standard Repair Service Advantage. This service does not cover defects, malfunctions, performance failures or damage to the unit resulting from physical, liquid, or chemical damage. An estimate for non-covered repairs will be provided for units displaying extensive damage.

Repair Service Advantage is non-cancelable and non-refundable. If Equipment is added to the agreement subsequent to the Start Date, these units are also non-cancelable and non-refundable for the agreement duration. All Equipment must be in good working order on the Start Date or when additional Equipment is added to the agreement. Equipment may only be added to the agreement, via a customer signed or emailed Motorola Inventory Adjustment Form (IAF). Complete and accurate serial numbers and model descriptions must be supplied.
All inventory adjustment requests for add-on subscriber units received prior to the 15th of the month will be effective the 1st of the following month. Equipment add-on requests received after the 15th of the month will be effective the 1st of the next succeeding month.

Equipment deletions from the agreement may only be deleted under the following limited conditions:
a) Equipment was stolen and proof of theft is provided to Motorola; or
b) Motorola determines Equipment is damaged beyond repair; or
c) Motorola determines Equipment is no longer supportable or is obsolete; or
d) Equipment had already been under a previous contract for at least the twelve month requirement.
Equipment deletions, where applicable, will be effective at the end of the month in which the request was received.

The terms and conditions of this Statement of Work are an integral part of the Motorola service agreement or other applicable agreement to which it is attached and made a part thereof by this reference. If there are any inconsistencies between the provisions of the Motorola service agreement or other applicable agreement and this Statement of Work, the provisions of this Statement of Work shall prevail.

2.0 Motorola has the following responsibilities:

2.1 Test and Restore the Equipment to Motorola factory specifications, including Factory Mutual (FM), and Mine Hazard Safety Association (MHSA).

2.2 Reprogram Equipment to original operating parameters based on the Customer template, if retrievable, or from a Customer supplied backup diskette. If the Customer template or code plug is not usable, a generic template or code plug utilizing the latest Radio Service Software (RSS) or Customer Programming Software (CPS) version for that Equipment will be used. The Equipment will require additional programming by the Customer to Restore the original template. All Firmware is upgraded to the latest release for each individual product line.

2.3 Clean external housing of the Equipment. External components of unit will only be replaced when functionality has been diminished.

2.4 Pay the outbound freight charges. Motorola will pay the inbound freight charges if the Customer uses the Motorola designated delivery service.

2.5 Provide the Motorola repair request and Inventory Adjustment Form (IAF) via Motorola On Line (MOL).

2.6 Process inventory adjustment requests received by email or fax from Customer. If the request is received by email, Motorola will email an acknowledgement to the sender.

2.7 Perform covered services as requested by Customer on the Motorola repair request form.

2.8 If applicable, notify Customer of changes in Motorola designated inventory adjustment email address or fax number.

3.0 Customer has the following Responsibilities:

3.1 Supply Motorola complete and accurate serial numbers and model description.

3.2 Utilize the Motorola designated delivery service program to obtain Motorola payment for inbound shipping

3.3 Access the Motorola repair request form and Inventory Adjustment Form (IAF) through Motorola On Line (MOL).

3.4 Initiate service request via Motorola On Line (MOL) or complete a Motorola repair request form with contract number referenced, and submit with each unit of Equipment sent in for service. Mobile control heads or accessory items sent in must reference the serial number of the main unit.

3.5 If desired, supply Motorola with a 3.5" backup diskette with the Software template or programming in order to assist in returning the Equipment to original operating parameters. This step must be completed for Equipment that will not power up. If applicable, record the current flashcode for each radio.

3.6 If Motorola must utilize a generic template or code plug to Restore Equipment to operating condition, Customer is responsible for any programming required to Restore Equipment to desired parameters.

3.7 Provide a signed or emailed Motorola Inventory Adjustment Form (IAF) for all Equipment additions.

3.8 Local services or annual maintenance required for maintaining normal operation of the equipment, unless specified on the service agreement.

MOTOROLA

Local Radio Support

1.0 Description of Service

Local Radio Support provides an operational check of Equipment that is specifically named in the applicable Agreement to which this Statement of Work is attached. An operational check is an analysis of the Equipment to identify external or internal defects.

If the Equipment has an external defect, or can be Restored without opening the radio case, the Equipment will be Restored and returned to Customer. If the Equipment has an internal defect, or is not serviceable without opening the radio case, then the Equipment will require additional service provided by the Servicer and not described in this Statement of Work.

Local Radio Support includes service on standard palm microphones and single mobile control heads, provided that they are required for normal operation of the two-way mobile and are included at the point of manufacture. Local Radio Support excludes repairs to: optional accessories; iDEN accessories; iDEN mobile microphones; non-standard mobile microphones, mobile external speakers; optional or additional control heads, single and multiple unit portable chargers; batteries, mobile antennas; mobile power & antenna cables and power supplies.

The following are excluded from Local Radio Support service unless they are purchased as an option for an additional fee. The options are OnSite, Radio Survey and Analysis, Portable Remote Speaker Microphones, Portable Antenna Replacements Mobile Remote Control Heads.

The terms and conditions of this SOW are an integral part of Motorola's Service Terms and Conditions or other applicable agreement to which it is attached and made a part thereof by this reference.

2.0 Motorola has the following responsibilities:
- 2.1 Service to be performed at the Servicer facility during Standard Business Days.
- 2.2 Perform an operational check on Equipment to determine the nature of the problem.
- 2.3 Remove/reinstall mobile or data Equipment from/to vehicle as needed for servicing.

3.0 Customer has the following responsibilities:
- 3.1 Deliver and pick up Equipment to/from the Servicer facility.
- 3.2 Inform Servicer of description of problem for Equipment brought in for service.
- 3.3 Cooperate with Motorola and perform all acts that are reasonable or necessary to enable Motorola to provide the Local Radio Support service to Customer.

MOTOROLA

Statement of Work

Local Radio Support
OnSite Option - Pick & Delivery

1.0 Description of Service

For the OnSite Option ("Option"), equipment will be picked up from and delivered to the Customer's location, within a designated radius of the Servicer facility. Schedule pickups will be mutually agreed upon and outlined in the Customer Support Plan.

The OnSite Option of Local Radio Support SOW covers Equipment that is specifically named in the applicable Agreement to which this Statement of Work is attached.

2.0 Motorola has the following responsibilities:

2.1. Use reasonable efforts to pickup and deliver Equipment per the mutually agreed upon Customer location, days of week, and preferred time. If a pick up/delivery cannot occur according to the preferred schedule, Customer will be contacted prior to the scheduled pick up/delivery, to arrange a mutually agreeable alternative date and/or time for pick up/delivery.

2.2. Generate service receipt and leave with Customer.

3.0 Customer has the following responsibilities:

3.1. Designate mutually agreeable location for service pickup and delivery, days of week, and preferred time.

3.2. Provide problem description along with Equipment.

REPAIR SERVICE ADVANTAGE (RSA) WITH RADIO PURCHASE SERVICE COVERAGE PLAN TERMS & CONDITIONS

DESCRIPTION OF REPAIR SERVICE ADVANTAGE (RSA)

RSA is an optional service plan available in addition to Motorola's standard Commercial Warranty for select Motorola manufactured two-way, data, and paging subscriber equipment for an additional fee. This plan is available for purchase at the time of an equipment order. Service performed under this plan consists of repair or replacement of the covered equipment as set forth in the terms and conditions herein. Service is provided by a designated Motorola facility. This plan is extended by Motorola, Inc. ("Motorola") to the original purchaser or lessee only, and only to those purchasing or leasing for commercial, industrial, or public service use ("Customer"). This plan is not assignable or transferable to any other party and applies within the fifty (50) United States and the District of Columbia.

EQUIPMENT COVERED

Subscriber equipment includes portables, mobiles, pagers, and consolettes. In addition, two-way subscriber standard palm microphones and single mobile control heads are covered provided that they are required for normal operation of the equipment and are included at the point of manufacture.

EQUIPMENT EXCLUDED

Excluded equipment includes: encryption; analog voice secure board (manufactured by Transcrypt); custom or special products; belt clips; optional accessories; non-standard mobile microphones; iDEN accessories; iDEN mobile microphones; portable remote speaker microphones; optional or additional control heads; mobile external speakers; single and multiple unit portable chargers; batteries; mobile power and antenna cables; mobile antennas; portable antennas; power supplies; and Motorola Software. Equipment whose serial number has been removed or made illegible and will not power up is also excluded.

DURATION OF COVERAGE

The duration of the plan varies by equipment model and may provide for up to three (3) years of coverage. The plan provides service coverage for one (1), two (2), or three (3) years beyond the Commercial Warranty, at a designated Motorola rate. The term of coverage begins on the first day after the Commercial Warranty expires and continues for the duration purchased as per Customer's invoice.

SERVICES PROVIDED

If equipment covered by the plan fails to perform in accordance with the published specifications in effect at the time equipment was purchased, Motorola, at its option, will either repair or replace the equipment at a designated Motorola service facility, as listed in the service manual. Such action on the part of Motorola shall be the full extent of Motorola's liability under the plan.

Under this plan, repair includes:

A) Testing and restoring the equipment to Motorola factory specifications. Restoration, at Motorola's option, may include the replacement of parts or boards with functionally equivalent reconditioned or new parts or boards. Replaced parts, boards or equipment, are

covered for the remaining time period of the plan. All replaced parts, boards or equipment shall become the property of Motorola and will not be returned to the Customer.
B) Reprogramming equipment to original operating parameters based on the Customer template, if retrievable, or from a Customer supplied backup diskette. If the Customer template is not retrievable, a generic template utilizing the latest Radio Service Software (RSS)/Customer Programming Software (CPS) version for that equipment will be used.
C) Cleaning of external housing of the equipment.
D) Liquid damage coverage for ruggedized units ONLY (Units ordered with the H499/H64 option)
E) Priority Processing when repair is initiated via Motorola On-Line (MOL). Motorola will pay the inbound shipping charges only if the Customer uses the Motorola designated delivery service. For delivery service options for the Federal Technical Center call 1-800-969-6680.
Motorola will pay for outbound shipping via Motorola's published ship card.

EXCLUDED SERVICES UNDER RSA
This plan does not cover defects, malfunctions, performance failures or damages to the unit resulting from:
A) Use in other than its normal and customary manner
B) Misuse, vandalism, accident, Acts of God, or neglect
C) Defects or damage due to physical, chemical or liquid damage (Liquid damage is covered on units ordered with the H499/H64 ruggedized option ONLY)
D) Improper disassembly, testing, operation, maintenance, installation, modification, adjustment, alteration or repair.

This plan also excludes:
A) Radio frequency coverage or range over which the equipment will transmit and receive signals.
B) Upgrades and reprogramming.
C) Local services or annual maintenance required for maintaining normal operation of the equipment.
D) Scratches or cosmetic damage to equipment surfaces that does not affect operation.
E) Inbound freight insurance charges for declared values in excess of $100 on inbound shipments.

REQUESTING SERVICE
Customer must complete the repair request form for the designated Motorola service facility and include a copy in the box with the equipment sent for repair. The repair request form is available on Motorola OnLine at https://businessonline.motorola.com or upon request by calling a Motorola customer service representative at 1-800-227-6772. Federal Government Customers should call 1-800-969-6680. Mobile control heads or accessory items sent in must reference the serial number of the main unit. If desired, Customer may supply Motorola with a 3.5" backup diskette with the software template or programming in order to assist in returning

CANCELLATION
The plan is paid in full at the time of purchase and is non-cancelable and non-refundable.

GENERAL PROVISIONS
THERE ARE NO WARRANTIES EXPRESS OR IMPLIED REGARDING REPAIR SERVICE ADVANTAGE, INCLUDING, WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. LIMITATION OF LIABILITY: NOTWITHSTANDING ANY OTHER PROVISION, EXCEPT FOR PERSONAL INJURY, MOTOROLA'S TOTAL LIABILITY FOR LOSSES ARISING OUT OF OR RELATED TO THIS PLAN WHETHER FOR BREACH OF CONTRACT, NEGLIGENCE, WARRANTY, STRICT LIABILITY IN TORT, OR OTHERWISE, IS LIMITED TO THE PRICE OF TWELVE (12) MONTHS OF SERVICES PROVIDED UNDER THE PLAN FOR THE PARTICULAR EQUIPMENT COVERED. IN NO EVENT WHETHER FOR BREACH OF CONTRACT, WARRANTY, OR OTHERWISE, WILL MOTOROLA BE LIABLE FOR INCIDENTAL, SPECIAL, INDIRECT, PUNITIVE, OR CONSEQUENTIAL DAMAGES TO THE FULL EXTENT SUCH MAY BE DISCLAIMED BY LAW INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFIT OR REVENUE, LOSS OF USE OF THE PRODUCTS OR ANY ASSOCIATED EQUIPMENT, LOSS OF DATA, COST OF CAPITAL, COST OF SUBSTITUTE PRODUCT (S), FACILITIES OR SERVICES, OR DOWN TIME COSTS OR FOR ANY CLAIM AGAINST CUSTOMER BY ANY PARTY. EXCEPT FOR MONEY DUE UPON AN OPEN ACCOUNT, NO ACTION SHALL BE BROUGHT FOR ANY BREACH OF THESE PLANS MORE THAN ONE (1) YEAR AFTER THE ACCRUAL OF SUCH CAUSE OF ACTION.

GENERAL TERMS
A) If any court renders any portion of this plan unenforceable, the remaining terms will continue in full force and effect.
B) This plan and the rights and duties of the parties will be governed and interpreted in accordance with the laws of the State of Illinois.
C) Failure to exercise any right will not operate as a waiver of that right, power, or privilege.
D) Neither party is liable for delays or lack of performance resulting from any causes such as strikes, material shortages, or acts of God that are beyond that party's reasonable control.
E) These terms and conditions may not be altered, amended, or modified.
F) Neither party will be bound by any terms contained in Customer's purchase orders, acknowledgements or other writings.

CUSTOMER SUPPORT
For questions pertaining to RSA, such as equipment covered or duration of coverage available, please contact your account representative or
Motorola at 1-800-227-6772.

Exhibit C-8

NWCD Revised Summary Pricing 12-13-11 Exhibit C-8		Starcom Integrated W Purchase of Radios In January 2012 Dec 2011 Contract	Starcom Integrated W Purchase of Radios In January 2012 Revised 12-13-11
		with 1909 subs	with 1916 subs
Project 25 Phase 2 TDMA Infrastructure Equipment		12,491,778.00	12,491,778.00
Redundant Prime Site Included in Infrastructure Equipment		DNA	DNA
Project Management		410,627.00	410,627.00
Engineering		726,127.00	726,127.00
Installation		1,276,584.00	1,276,584.00
Dynamic Dual Mode (FDMA/TDMA Interoperability) Option		469,449.00	469,449.00
Training		Removed	Removed
Total NWCDS Infrastructure		**15,374,565.00**	**15,374,565.00**
Equipment Discount Already Taken In Line Item Pricing		-3,074,631.00	-3,074,631.00
Large System Incentive		-1,000,662.91	-1,000,662.91
Infrastructure Incentive For Executed Contract By December 24, 2010		-299,950.00	-299,950.00
Remove ISSI with Incentives		-51,909.39	-51,909.39
Subtotal Total NWCDS Infrastructure After Incentives		**$10,947,411.70**	**$10,947,411.70**
Project 25 Phase 2 Subscribers Includes No Programming or Install		12,897,667.80	12,686,923.00
Standard Equipment Discount		-2,398,489.74	-2,481,019.00
Incentive For Purchase of Subscriber Radios With Infrastructure			
Subtotal Subscriber Pricing		**10,499,178.06**	**10,205,904.00**
System Total With Subscribers		**21,446,589.76**	**21,153,315.70**
System Purchase Incentives			
System Incentive For Infrastructure Contract By December 24, 2010 & Subscribers as listed by January 31, 2012		-2,116,906.00	-2,116,906.00
Trade In Of Existing Equipment (Infrastructure)		-825,990.00	-825,990.00
Trade In Of Existing Equipment (Subscribers)		-527,426.00	-527,426.00
Additional 2011 Only Purchase Incentive			-82,000.00
New Total Subscriber Sale Price		**7,028,856.00**	**6,653,582.00**
Accessories (Attached) List Price			643,865.60
State Discount For Accessories			-199,598.33
Accessories Sale Price			**444,267.27**
Total Subscriber Order		**7,028,856.00**	**7,097,849.27**
Additional 2 Years Warranty Premier 24 X 7 On Site		DNA	DNA
Additional 2 Years Warranty 4hr 24 X 7 On Site		487,397.00	487,397.00
Additional 2 Years Services Network Monitoring, And Security Services		133,780.92	133,780.92
Additional Two Years System Software Upgrades Including Labor		245,400.00	245,400.00
Additional Two Years System Hardware Upgrades Including Labor		74,321.00	74,321.00
2 Year Warranty Rebate		-940,898.92	-940,898.92
System Total With Subscribers Purchase & System Purchase Incentives		**$17,976,267.70**	**$18,045,260.97**

1. If Mix of radio model changes from model mix used to determine incentives above incentive levels will change accordingly .2. Incentives cannot be changed or moved up in the spreadsheet i.e. Incentives for executed contracts by Dec 24, 2010 & Jan 31, 2012, Trade In of Infrastructure or Subscribers or Two Year Warranty rebate cannot be factored in unless subscribers are purchased by end of January 2012 3. Total Price for Infrastructure for contract executed by Dec. 24,2010 is $10,947,411.70 no other incentives can apply until subscribers are purchased 4. Incentives and pricing are placed under non disclosure and cannot be shared with other agencies or individuals 5.Order must be one bulk order for the above placed quantities and placed by NWCD.

CONTRACT TERM PRICING AGREEMENTS:

Amendment can be used to purchase future subscribers for 5 years from amendment signing
Pricing below is for NWCD member agencies only:

- First 2 years APX radios 30% off, XTS/XTL 35% off, Accessories 31%
- Next 3 years APX radios & Accessories 25% off, XTS/XTL radios & Accessories 35% off
- Contingent on amendment signing by 12/28/11

- Other Illinois Agencies can use amendment for future procurement purposes NWCD does not hold performance or financial responsibility for those separate purchases.
- Motorola can negotiate future bulk purchases

Exhibit C-9

Exhibit C-9
External Agency Purchasing Agreement
December 13, 2011

As applicable by law, definitions and terms and conditions listed below, other eligible authorized Illinois agencies may utilize this contract for purchases.

"Authorized Purchaser" means any State of Illinois governmental agency or local political subdivision within the State of Illinois. Except as set forth herein, Authorized Purchasers may be eligible to purchase equipment pursuant to the terms and conditions of the Agreement, if such Authorized Purchasers are authorized, by law or their governing bodies, to execute such purchases. Said purchases shall be made upon the issuance of a purchase order or other document directly from the Authorized Purchaser to Motorola. Each order must refer to this Agreement and must specify the pricing and delivery terms. Notwithstanding any additional or contrary terms in the order, the applicable provisions of this Agreement (except for delivery, passage of title and risk of loss to Equipment, warranty commencement, and payment terms) will govern the purchase and sale of the additional Equipment or licensing of Software. For all Equipment purchased by Authorized Purchasers, title and risk of loss will pass at shipment. Title to Software shall never pass, warranty will commence upon delivery, and payment shall be due within thirty (30) days after the invoice date. Motorola will send the Authorized Purchaser an invoice as the additional Equipment is shipped or Software is licensed. Mobiles and portables include a standard one (1) year warranty.

The applicable discount for Motorola equipment is:

- Motorola APX Mobile & Portable Radio Units APC's :

  471, 795, 755, 185, 127, 481, 655, 798, 527, 656, and 207.

  At 25% discount from the current list price. APX accessories 25% discount from the current list price.

- Motorola XTS & XTL Mobile & Portable Radio Units APC's :

  687, 785, 271, 185, 205, 453, 514, 500, 127, 721, and 476

  At 35% discount from current list price. XTS/XTL accessories 35% discount from the current list price.

Exhibit C-10

Exhibit C-11

EXHIBIT 4

Cook County General Conditions

PART II
GENERAL CONDITIONS
BID CONTRACTS
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GENERAL CONDITIONS
BID CONTRACTS
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GENERAL CONDITIONS

GC-01 SUBCONTRACTING OR ASSIGNMENT OF CONTRACT OR CONTRACT FUNDS

Once awarded, this Contract shall not be subcontracted or assigned, in whole or in part, without advance written approval of the Chief Procurement Officer which approval shall be granted or withheld at the sole discretion of the Chief Procurement Officer. In no case, however, shall such approval relieve the Contractor from his obligations or change the terms of the Contract. The Contractor shall not transfer or assign any Contract funds or claims due or to become due without the advance written approval of the Chief Procurement Officer. The unauthorized subcontracting or assignment of the Contract, in whole or in part, or the unauthorized transfer or assignment of any Contract funds, either in whole or in part, or any interest therein, which shall be due or are to become due the Contractor shall have no effect on the County and are null and void.

Prior to the commencement of the Contract, the Contractor shall identify in writing to the Chief Procurement Officer any and all subcontractors it intends to use in the performance of the Contract. The Chief Procurement Officer shall have

the right to disapprove any subcontractor. Identification of subcontractors to the Chief Procurement Officer shall be in addition to any communications with the County offices other than the Chief Procurement Officer. All subcontractors shall be subject to the terms of this Contract. Contractor shall incorporate into all subcontracts all of the provisions of the Contract which affect such subcontract. Copies of subcontracts shall be provided to the Chief Procurement Officer upon request.

Excluding suppliers and materialmen, the Contractor must disclose the name and business address of each subcontractor, attorney, lobbyist, accountant, consultant and any other person or entity whom the Contractor has retained or expects to retain solely in connection to the Matter, as well as the relationship and the total amount of fees paid or estimated to be paid. The Contractor is not required to disclose employees who are paid or estimated to be paid. The Contractor is not required to disclosed employees who are paid solely through the contractor's regular payroll. "Lobbyist" means any person or entity who undertakes to influence any legislation or administrative action on behalf of any person or entity other than (1) a not-for-profit entity, on an unpaid basis, or (2), himself. "Lobbyist" also means any person or entity any part of whose duties as an employee of another includes undertaking to influence any legislative or administrative action. If the Contractor is uncertain whether a disclosure is required under this Section, the Contractor may either ask the County, whether disclosure is required or make the disclosure. The County reserves the right to prohibit any person from entering any County facility for any reason. All contractors and subcontractors of the Contractor shall be accountable to the Director of the Using Department or his designee while on any County property and shall abide by all rules and regulations imposed by the County.

GC-02 PERSONNEL

The quality, experience and availability of personnel employed by the Contractor is of the essence. The Contractor shall provide the County with a list of all key personnel to be used on the project and their designated assignment. The list shall include qualifications of each person named. The County may at any time request, in writing, the Contractor to remove any of the assigned personnel for cause and forthwith furnish to the County other acceptable personnel with thirty (30) days of notification. Notwithstanding the County's approval of Contractor's personnel, the Contractor shall be fully responsible to the County for all work performed pursuant to this Contract by Contractor's employees, subcontractors or others who may be retained by the Contractor with the approval of the County.

GC-03 INSURANCE REQUIREMENTS

[Intentionally Omitted]. The insurance requirements set forth in Exhibit B shall apply to this contract.

GC-04 INSPECTION AND RESPONSIBILITY

At any and all times during the term of the Contract and at any location where the Contract is performed, the County shall have a right to inspect any Deliverables provided in carrying out this Contract. The Contractor shall be solely responsible for the quality and standards of all Deliverables furnished under this Contract. Deliverables may be rejected by the Chief Procurement Officer and/or the Director of the Using Department if they fail to meet Contract requirements or provided in a manner which does not meet Contract requirements. Deliverables shall be replaced and/or re-performed by the Contractor promptly and at no additional cost to the County. Any Deliverable rejected shall be removed within a reasonable time from the premises of the County at the entire expense of the Contractor, after notice has been given by the County to the Contractor that such Deliverables have been rejected.

GC-05 INDEMNIFICATION

The Contractor shall indemnify the County and its commissioners, officials, employees, agents and representatives, and their respective heirs, successors and assigns, from and against any and all costs, expenses, attorney's fees, losses, damages and liabilities incurred or suffered directly from or attributable to any third party claims alleging negligent acts and negligent omissions of the Contractor, its agents, employees, contractors, subcontractors of the Contractor. The Contractor expressly understands and agrees that any insurance protection required of the Contractor, or otherwise provided by the Contractor, shall in no way limit the responsibility to indemnify the County as hereinabove provided. This indemnity shall not apply to the acts and omissions (negligent or otherwise) of the County or other parties. Except in case of personal injury or death, Contractor will be responsible for direct and not "indirect" damages.

GC-06 PAYMENT

All invoices submitted by the Contractor shall be in accordance with the cost provisions contained in the Contract

Documents. The Contractor must submit itemized records indicating the dates or time period in which the services being invoiced were provided, a detailed description of the Deliverables for each such date the services were provided and the amount of time spent performing work on each such date for which payment is requested. All invoices shall reflect the amounts invoiced by and the amounts paid to the Contractor as of the date of the invoice, and shall be submitted together with a properly completed County Voucher form (29A). Invoices for new charges shall not include "past due" amounts, if any, which amounts must be set forth on a separate invoice. No payments shall be made with respect to invoices which do not include the County Voucher form or which otherwise fail to comply with the requirement of this paragraph. Contractor shall not be entitled to invoice the County for any late fees or penalties.

GC-07 PREPAID FEES

In the event this Contract is terminated by either party, for cause or otherwise, and the County has prepaid for any Deliverables, Contractor shall refund to the County, on a prorated basis to the effective date of termination, all amounts prepaid for Deliverables not actually provided as of the effective date of the termination. The refund shall be made within thirty (30) days of the effective date of termination.

GC-08 TAXES

Federal Excise Tax does not apply to materials purchased by the County by virtue of Exemption Certificate No. 36-75-0038K. Illinois Retailers' Occupation Tax, Use Tax and Municipal Retailers' Occupation Tax do not apply to materials or services purchased by the County by virtue of statute. The price or prices quoted herein shall include any and all other federal and/or state, direct and/or indirect taxes which apply to this Contract. The County's State of Illinois Sales Tax Exemption Identification No. is E-9998-2013-05.

GC-09 PRICE REDUCTION

[Intentionally Omitted]

GC-10 CONTRACTOR CREDITS

To the extent the Contractor gives credits toward future purchases of goods or services, financial incentives, discounts, value points or other benefits based on the purchase of the materials or services provided for under this Contract, such credits belong to the County and not any specific using department. Contractor shall report any such credits to the Chief Procurement Officer.

GC-11 DISPUTES

Any dispute arising under the Contract between the County and Contractor shall be decided by the Chief Procurement Officer. The complaining party shall submit a written statement detailing the dispute and specifying the specific relevant Contract provision(s) to the Chief Procurement Officer. Upon request of the Chief Procurement Officer, the party complained against shall respond to the complaint in writing within five days of such request. The Chief Procurement Officer will reduce his decision to writing and mail or otherwise furnish a copy thereof to the Contractor and Director of the Using Department.. Dispute resolution as provided herein shall be a condition precedent to any other action at law or in equity. However, unless a notice is issued by the Chief Procurement Officer indicating that additional time is required to review a dispute, the parties may exercise their contractual remedies; if no decision is made within (60) days following notification to the Chief Procurement Officer of a dispute , Contractor reserves the right to file any action prior to the issuance of the Chief Procurement Officer's decision only if necessary to preserve its legal claim. No inference shall be drawn from the absence of a decision by the Chief Procurement Officer. Notwithstanding a dispute, Contractor shall continue to discharge all its obligations, duties and responsibilities set forth in the Contract during any dispute resolution proceeding unless otherwise agreed to by the County in writing.

GC-12 DEFAULT

Contractor shall be in default hereunder in the event of a material breach by Contractor of any term or condition of this Contract including but not limited to, a representation or warranty, where Contractor has failed to cure such breach within thirty (30) days after written notice of breach is given to Contractor by the County, setting forth the nature of such breach.

In the event Contractor shall breach any material term or condition of this Contract on more than one occasion during any twelve month period during the term hereof, or in the event Contractor expresses an unwillingness or inability to

continue performing the Contract in accordance with its terms, the County may, at its option, declare the Contractor to be in default and the County shall be entitled to exercise all available remedies including, but not limited to, termination of the Contract, without affording the Contractor further opportunity to cure such breach. Failure of the County to give written notice of the breach to the Contractor shall not be deemed to be a waiver of the County's right to assert such a breach at a later time, should the Contractor commit a subsequent breach of this Contract.

A material breach of the contract by the Contractor includes but is not limited to the following:

1. Failure to begin performance under this Contract within the specified time;

2. Failure to perform under this Contract with sufficient personnel, equipment, or materials to ensure completion of said performance within the specified time or failure to assign qualified personnel to ensure completion within the specified time;

3. ~~Performance of this contract in an unsatisfactory manner;~~

4. Refusal to perform services deemed to be defective or unsuitable;

5. Discontinuance of performance of Contractor's obligations under the Contract or the impairment or the reasonable progress of performance;

6. Becoming insolvent, being declared bankrupt or committing any act of bankruptcy or insolvency;

7. Any assignment of this contract for the benefit of creditors;

8. Any cause whatsoever which impairs performance in an acceptable manner; or

9. Any other material breach of any term or condition of this Contract.

County shall be in default hereunder if any material breach of the Contract by the County occurs which is not cured by the County within thirty (30) days after written notice of breach has been given by Contractor to the County, setting forth the nature of such breach.

GC-13 COUNTY'S REMEDIES

Following notice of material breach to Contractor, the County reserves the right to withhold payments otherwise owed to Contractor until such time as Contractor has cured the breach.

If the Contractor fails to remedy a material breach during the thirty (30) day cure period pursuant to General Condition GC-12, Default, or if Contractor commits a subsequent material breach within a twelve month period or expresses an unwillingness or inability to continue performing the Contract in accordance with its terms, the County shall have the right to terminate this Contract upon written notice to the Contractor which shall set forth the effective date of such termination.

In addition, the County shall have the right to pursue all remedies in law or equity.

GC-14 CONTRACTOR'S REMEDIES

If the County has been notified of breach and fails to remedy the breach during the thirty (30) day cure period pursuant to General Condition GC-12, Default, the Contractor shall have the right to terminate this Contract providing, upon not less than thirty (30) days prior written notice to the County, which notice shall set forth the effective date of termination.

Contractor shall have the right to pursue all remedies available in law or equity. In all cases the Contractor's damages shall be those provable damages not to exceed the value of the Contract as awarded by the Cook County Board of Commissioners less all amounts paid to the Contractor. In no event shall Contractor be entitled to any consequential damages. Irrespective of the exercise of remedies hereunder, Contractor shall not disrupt the operation or repossess any component thereof.

GC-15 DELAYS

Contractor agrees that no charges or claims for damages shall be made by Contractor for any delays or hindrances from

any cause whatsoever during the progress of any portion of this Contract unless such delay or hinderance is caused by gross, wanton, or deliberate negligence of the County.

GC-16 MODIFICATIONS AND AMENDMENTS

The parties may during the term of the Contract make modifications and amendments to the Contract but only as provided in this section. Such modifications and amendments shall only be made by mutual agreement in writing. In the case of Contracts not approved by the Board, the Chief Procurement Officer may amend a contract provided that any such amendment does not extend the Contract by more than one (1) year, and further provided that the total cost of all such amendments does not increase the total amount of the Contract beyond $150,000. Such action may only be made with the advance written approval of the Chief Procurement Officer. If the amendment extends the Contract beyond one (1) year or increases the total award amount beyond $150,000, then Board approval will be required.

In the case of Contracts approved by the Board, the total cost of all such amendments shall not increase the Contract by more than $150,000 and the term may only be extended for up to one (1) year. Such action may only be made with the advance written approval of the Chief Procurement Officer.

In the case of Contracts approved by the Board, modifications and amendments which individually or cumulatively result in additional costs of greater than $150,000 or which extend the term of the Contract by more than one (1) year shall be deemed as authorized with the advance approval of the Cook County Board of Commissioners.

No County department or employee thereof has authority to make any modifications or amendments to this Contract. Any modifications or amendments to this Contract made without the express written approval of the Chief Procurement Officer is void and unenforceable.

GC-17 PATENTS, COPYRIGHTS AND LICENSES

All software provided by Motorola pursuant to this Contract shall be subject to Motorola's Software License Agreement entered into between parties, Motorola will defend at its expense any suit brought against the County to the extent that it is based on an Infringement Claim, and Motorola will indemnify the County for those cost and damages finally awarded against the County for an Infringement Claim. Motorola's duties to defend and indemnify are conditioned upon: (i) the County promptly notifying Motorola in writing of such Infringement Claim; (ii) Motorola having sole control of the defense of such suit and all negotiations for its settlement and compromise; (iii) the County providing to Motorola cooperation and, if requested by Motorola, reasonable assistance in the defense of the Infringement Claim.

If an Infringement Claim occurs, or in Motorola's opinion is likely to occur, Motorola may at its option and expense procure for the County the right to continue using the Equipment or Motorola Software, replace or modify it so that it becomes non-infringing while providing functional equivalent performance, or grant the County a credit for such Equipment or Motorola Software as depreciated and accept its return. The depreciation amount will be calculated based upon generally accepted accounting standards for such Equipment and Motorola Software.

Motorola will have no duty to defend or indemnify for any Infringement Claim that is based upon (i) the combination of the Equipment or Motorola Software with any software, apparatus or device not furnished by Motorola; (ii) the use of ancillary equipment or software not furnished by Motorola that is attached to or used in connection with the Equipment or Motorola Software; (iii) any Equipment that is not Motorola's design or formula; (iv) a modification of the Motorola Software that is intended to correct the claimed infringement. The foregoing states the entire liability of Motorola with respect to infringement of patents and copyrights by the Equipment and Motorola Software or any parts thereof.

GC-18 COMPLIANCE WITH LAWS

The Contractor shall observe and comply with the laws, ordinances, regulations and codes of the Federal, State, County and other local government agencies which are directly applicable to its performance of services under the Contract, including but not limited to any Contractor requirements that are set forth in any grant that is being used to fund this Contract and those County Ordinances set forth in the Certifications attached hereto and incorporated herein. Assurance of compliance with this requirement by the Contractor's employees, agents or subcontractors shall be the responsibility of the Contractor.

The Contractor shall secure and pay for all federal, state and local licenses, permits and fees required hereunder.

GC-19 MINORITY AND WOMEN BUSINESS ENTERPRISES
COOK COUNTY ORDINANCE CHAPTER 34, DIVISION 6, SECTION 34-275 to SECTION 34-303

I. POLICY AND GOALS

A. It is the policy of the County of Cook to prevent discrimination in the award of or participation in County contracts and to eliminate arbitrary barriers for participation, as both prime and sub-contractors, in such contracts by local businesses certified as Minority Business Enterprises (MBE) and Women-owned Business Enterprises (WBE). In furtherance of this policy, the Cook County Board of Commissioners has adopted a Minority- and Women-owned Business Enterprise Ordinance (the "Ordinance") which establishes a "best efforts" goal of awarding not less than thirty-five (35%) of the annual total dollar amount of professional, consulting service and sole source contracts and agreements MBE's and WBE's.

B. ~~A Proposer may achieve the MBE/WBE participation goals by its status as a MBE or WBE; by~~ entering into a joint venture with one or more MBE's and /or WBE's; by subcontracting a portion of the work to one or more MBE'S or WBE's; by entering into a Mentor-Protégé Agreement with a MBE or WBE; by indirect participation of MBE's or WBE's in other aspects of the Proposer's business; or by a combination of the foregoing.

C. A Waiver Request must be submitted with the Proposal, documenting the inability of the Proposer to meet the goals, and providing written evidence of "Good Faith Efforts", to obtain goals.

D. A Proposer's failure to carry out its commitments in the course of performance on a contract shall constitute a material breach of the Contract and if such breach is not appropriately cured, may result in the termination of the Contract or such remedy authorized by the Ordinance as the County deems appropriate.

II. REQUIRED SUBMITTALS

To be considered responsive of the Ordinance, a Proposer shall submit items A, B, and C Listed below. All documentation submitted shall be reviewed by the Contract Compliance Administrator. Failure to submit one of the items required shall be cause to consider a contact non-responsive to the Ordinance and goals may be rejected.

A. MBE/WBE Utilization Plan

Each Proposer shall submit supporting documentation which evidences efforts taken to achieve the County's "best efforts" MBE/WBE participation goals. Such documentation shall include:

1. A **Utilization Plan** identifying all firms intended to be utilized to fulfill the goals; the MBE/WBE status of each firm; the name, address, e-mail address and telephone number of the contact person for each MBE/WBE ; the dollar value of the goods and services to be provided by the MBE/WBE firm; and the dollar value expressed as a percentage (%) of the total value of the proposed contract. (See Section I)

1. A **Letter(s) of Intent** for each MBE/WBE containing specific information regarding goods to be provided or services to be performed by the MBE/WBE; the dollar value of the goods or services; the percentage (%) of the dollar value; and the original signatures of the appropriate officer for both the Proposer and MBE/WBE. (See Exhibit II)

2. Current **Letter(s) of Certification** for each MBE/WBE firm. Acceptable certifying agencies are: County of Cook, Illinois Unified Certification Program (IUCP) and U.S. Small Business Administration (SBA) (8A) or any other governmental body or agency approved by the Contract Compliance Administrator as applying certification standards substantially similar to those applied by the County of Cook may also be accepted.

4. **Waiver/Goal Reduction Petition** must be included at the time of the submission of the Proposal Document. Where the Proposer does not include all documentation in support of the Petition at the time of submission, such documentation must be submitted to the Office of Contract Compliance within three (3) business days after the submission date.

The Contract Compliance Administrator retains the right to reject the certification of any MBE or WBE on the grounds that it does not meet the County's definition of MBE or WBE.

B. Use of MBE/WBE Professionals

Each Proposer shall submit with its proposal a statement which discloses how it intends to maximize the use of minority and women professionals in the course of performing the contract.

C. Affirmative Action Plan

Each Proposer shall submit a copy of its current EEO-1 Report and a copy of its current Letter of Compliance from the United States Department of Labor, Office of Federal Contract Compliance Programs. Absent a letter from the OFCCP, the Proposer shall submit a written report of the inclusion of minority and women and professionals in the workforce of their company.

III. NON-COMPLIANCE

Where the County determines that the Proposer has failed to comply with its contractual commitments or any portion of the Ordinance as established by the Contract Compliance Administrator will notify the Contractor of such noncompliance and may take any and all appropriate actions as set forth within the Ordinance.

IV. REPORTING/RECORD-KEEPING REQUIREMENTS

The Contractor is required to comply with the reporting and record-keeping requirements as set forth in the Ordinance and as established by the Contract Compliance Administrator. Upon award of a Contract, the Proposer is responsible for acquiring all necessary Office of the Compliance Contract reporting and record-keeping forms which will be made available in the Office of Contract Compliance.

The Office of Contract Compliance will notify each Contractor and Sub-Contractor upon award of a contract of their reporting obligations (Vendor Notification Letter).

The Office of Contract Compliance will notify each MBE/WBE Sub-Contractor of the award of a contract to a Prime Contractor, the MBE/WBE dollar amount of participation and the percentage (%) amount of participation. The sub-contractors will be required to submit on a timely basis, Sub-Contractors Payment Affidavits (see forms section) with proof of payment or money paid to them by the Prime Contractor.

The Office of Contract Compliance request payment affidavits and proof of payment to MBE/WBE Sub-Contractors as follows:

1. **Annual Contracts**; monthly reporting from both Prime and Sub-Contractors.
2. **Multi Year Contracts**: quarterly reporting from both Prime and Sub-Contractors including proof of payments.
3. **One time** purchases require verification of proof of payment **immediately**.

Failure to comply with this section will be reviewed as non-compliance as stated under Section III. Non-Compliance.

V. EQUAL EMPLOYMENT OPPORTUNITY

Compliance with MBE and WBE requirements will not diminish or supplant Equal Employment Opportunity and Civil Rights provisions as required by law as they relate to contractor and subcontractor obligations.

Any questions regarding this document should be directed to:

Shannon Andrews
Administrator
Cook County Office of Contract Compliance
118 N. Clark Street-Room 1020
Chicago, Illinois 60602
(312)603-5502

GC-20 MATERIAL DATA SAFETY SHEET

Where required under the Illinois "Toxic Substance Disclosure To Employees Act", Illinois Compiled Statutes, 1994, 820 ILCS 255/1, Contractor shall submit with each delivery of Deliverables, a Material Safety Data Sheet.

GC-21 CONDUCT OF THE CONTRACTOR

~~The Contractor agrees to inform the County on a timely basis of all of the Contractor's interests, if any, which are or~~ which the Contractor reasonably believes may be incompatible with any interest of the County. The Contractor shall take notice of and comply with the Cook County Lobbyist Registration Ordinance (No. 93-0-22, 6-22-93). Neither Contractor nor any of its employees, agents or subcontractors shall use for business or personal gain, or make improper use improper use of confidential information which is acquired in connection with the Contract. To the extent Contractor will have access to the County's protected health information in performing its responsibilities under this Contract, Contractor shall contact the Chief Privacy Officer for the using Department(s) and shall execute the County's business associate agreement prior to performing any responsibilities which involve access to protected health information.

GC-22 ACCIDENT REPORTS

The Contractor shall provide the Chief Procurement Officer and Director of the using Departments with prompt written notification no later than twenty-four (24) hours of any occurrence, on County premises or otherwise, which pertains in any way to this Contract and results in either bodily injury to employees or third parties or property damage. The report shall include the name of person(s) injured, if any; name of the injured person's employer, if any; the date, time and location of the occurrence; description of the extent of injury and/or damage; the name(s) of witnesses; the names of any providers known to have provided treatment for injuries sustained; and such other information as may be required by the County. The Contractor shall notify the local police regarding any occurrence requiring a official police record. The report submitted to the County shall indicate whether the police were notified and, if so, the number of the police report.

GC-23 USE OF COUNTY PREMISES

Contractor shall confer with the Director of the Using Departments to ascertain full knowledge of all rules and regulations of the County facilities relative to this Contract and shall cause all its employees, agents, and subcontractors to comply therewith. The Contractor shall confine the operations of its employees, agents and subcontractors on County premises to the performance of the Contract consistent with its limits indicated by laws, ordinances, permits and/or direction of the Director of the Using Department and shall not encumber the premises with materials or debris. In performing the Contract, the Contractor shall cause or permit condition that endangers the safety of others and shall not load or permit any part of the structure to be loaded with a weight that will endanger the safety of the structure or any persons.

GC-24 TERMINATION FOR CONVENIENCE

The County may terminate this Contract, or any portion, at any time by notice in writing from the County to the Contractor. Unless otherwise stated in the notice, the effective date of such termination shall be three business days after the date the notice of termination is mailed by the County. If the County elects to terminate the Contract in full, unless otherwise specified in the notice of termination, the Contractor shall immediately cease performance and shall promptly tender to the County all Deliverables, whether completed or in process. If the County elects to terminate the Contract in part, unless otherwise specified in the notice of partial termination, the Contractor shall immediately cease performance of those portions of the Contract, whether completed or in process. Contractor shall refrain from incurring any further costs with respect to portions of the Contract which are terminated except as specifically approved by the Chief Procurement Officer. The County shall not have the right to terminate for convenience if the Contractor has given the County a notice of default and such default has not been cured.

GC-25 GENERAL NOTICE

All notices required pursuant to this Contract shall be in writing and addressed to the parties at their respective addresses set forth below. All such notices shall be deemed duly given if hand delivered or if deposited in the United

States mail, registered or certified, return receipt requested. Notice as provided herein does not waive service of summons or process.

TO THE COUNTY:

Cook Chief Procurement Officer
118 North Clark Street, Room 1018
Chicago, Illinois 60602
(Include County Contract Number on all notices)

TO THE CONTRACTOR:

At address provided on the Execution pages or as otherwise indicated in writing to the Chief Procurement Officer in a written document which, in bold face type references the name of the Contractor, the County Contract Number and states "NOTIFICATION OF CHANGE IN ADDRESS."

Motorola Solutions, Inc. – Law Department
Attn.: Commercial Counsel
1303 E. Algonquin Rd., IL01-8-10N
Schaumburg, IL 60196

GC-26 GUARANTEES AND WARRANTIES

The Contractor warrants that its services under this Contract will be free of defects in materials and workmanship for a period of ninety (90) days from the date the performance of the services are completed. In the event of a breach of this warranty, County's sole remedy is to require Contractor to re-perform the non-conforming service or to refund, on a pro-rata basis, fees paid for the non-conforming service. CONTRACT DISCLAIMS ALL OTHER WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

To the extent Contractor provides Deliverables manufactured by another entity, Contractor shall transfer original product warranty and any rights to manufacturer's related services to the County and shall submit all appropriate documentation of said transfer to the Director of the using Department prior to or at the time the Contractor tenders the Deliverables.

GC-27 STANDARD OF DELIVERABLES

Consistent with Contractor's commercial practices, some parts, modules, and components used in the manufacturing process may be used or contain used or reconditioned materials. Contractor warrants that any end products, and any parts, modules, and components contained in these products will perform as if new, and the Contractor will replace any defective materials or parts, whether new or used, within the applicable stated warranty period. No parts, modules or components shall be of age or condition as to impair their performance, usefulness and safety.

GC-28 DELIVERY

All Deliverables shipped to the County shall be shipped F.O.B., DESTINATION, FREIGHT PREPAID. Arrangements shall be made in advance by the Contractor in order that the County may arrange for receipt of the materials.

Truck deliveries will be accepted before 3:00 P.M. on weekdays only. No deliveries will be accepted on Saturdays, Sundays or County Holidays. The County is not responsible for delivery delays due to waiting times for loading and unloading at dock locations.

The quantity of Deliverables delivered by truck will be ascertained from a weight certificate issued by a duly licensed Public Weight-Master. In the case of delivery by rail, weight will be ascertained from bill of lading from originating line, but the County reserves the right to re-weigh at the nearest available railroad scale.

The County reserves the right to add new delivery locations or delete previously listed delivery locations as required during the Contract period. The only restriction regarding the County's right to add new delivery locations shall be that

any new or additional location shall be within the geographical boundaries of the County of Cook.

GC-29 QUANTITIES

Any quantities of indicated in the Proposal Pages for the performance of the Contract are estimates for the purpose of determining an appropriate total Contract amount and may not be actual quantities required by the County during the term of the Contract. The County reserves the right to increase or decrease the quantities at the Contract price, to correspond to the actual needs of the County. If the County increases the quantities required, any such increase shall be subject to an agreed written amendment in the Contract Amount. The County will be obligated to order and pay for only such quantities as are from time to time ordered, delivered, and accepted on purchase orders issued by the Chief Procurement Officer.

GC-30 CONTRACT INTERPRETATION

Whenever the singular is used herein, the masculine, feminine and neuter gender shall be deemed to include the others. The headings of articles, paragraphs and sections in this Contract are included for convenience only and shall not be considered by either party in construing the meaning of this Contract. If any provision or clause of this Contract shall be held to be invalid, such provision or clause shall be deleted from the Contract and the Contract shall be construed to give effect to the remaining portions thereof.

This Contract shall be interpreted and construed based upon the following order of precedence of component parts. Such order of precedence shall govern to resolve all cases of conflict, ambiguity or inconsistency.

1. Addenda, if any.
2. Execution Forms
3. Specification.
4. Special Conditions.
5. General Conditions.
6. Instruction to Bidders.
7. Legal Advertisement.
8. Bid Proposal.

GC-31 CONFIDENTIALITY AND OWNERSHIP OF DOCUMENTS

Any information or data in the form of specifications, drawings, reprints, technical information or otherwise furnished to the County marked as "Confidential" under this Contract will remain Contractor's property, will be deemed proprietary, will be kept confidential and will promptly be returned at Contractor's request. Notwithstanding anything to the contrary herein and except as required by applicable law, including but not limited to the Illinois Freedom of Information Act, Contractor shall not be obligated to create or maintain records not created or maintained in the ordinary course of its business, nor shall Contractor be obligated to disclose any information it deems, in good faith after due inquiry, to be confidential or proprietary, including but not limited to Contractor cost data or employee records. The terms of this Contract or any pricing date therein shall not be considered Confidential.

This Contract does not grant directly or by implication, estoppels, or otherwise, any ownership right or license under Motorola patent, copyright, trade secret, or other intellectual property created as a result of or related to the Equipment sold or Services pertormed under this Contract.

GC-32 GOVERNING LAW

This Contract shall be governed by and construed under the laws of the State of Illinois. The Contractor irrevocably agrees that, , any action or proceeding in any way, manner or respect arising out of the Contract, or arising from any dispute or controversy arising in connection with or related to the Contract, shall be litigated only in courts within the Circuit Court of Cook County in the City of Chicago, County of Cook, State of Illinois, and the Contractor consents and submits to the jurisdiction thereof. In accordance with these provisions, Contractor waives any right it may have to transfer or change the venue of any litigation brought against it by the County pursuant to this Contract.

GC-33 AUDIT; EXAMINATION OF RECORDS

The Contractor agrees that the Cook County Auditor or any of its duly authorized representatives shall, until expiration of three (3) years after the final payment under the Contract, have access and the right to examine any books, documents, papers, canceled checks, bank statements, purveyor's and other invoices, and records of the Contractor related to the Contract, or to Contractor's compliance with any term, condition or provision thereof. The Contractor shall be responsible for establishing and maintaining records sufficient to document the costs associated with performance under the terms of this Contract.

The Contractor further agrees that it shall include in all of its subcontracts hereunder a provision to the effect that the subcontractor agrees that the Cook County Auditor or any of its duly authorized representatives shall, until expiration of three (3) years after final payment under the subcontract, have access and the right to examine any books, documents, papers, canceled checks, bank statements, purveyor's and other invoices and records of such subcontractor involving transactions relating to the subcontract, or to such subcontractor's compliance with any term, condition or provision thereunder or under the Contract.

In the event the Contractor receives payment under the Contract, reimbursement for which is later disallowed by the County, the Contractor shall promptly refund the disallowed amount to the County on request, or at the County's option, the County may credit the amount disallowed from the next payment due or to become due to the Contractor under any contract with the County.

To the extent this Contract pertains to Deliverables which may be reimbursable under the Medicaid or Medicare Programs, Contractor shall retain and make available upon request, for a period of four (4) years after furnishing services pursuant to this Agreement, the contract books, documents and records which are necessary to certify the nature and extent of the cost of such services if requested by the Secretary of Health and Human Services or the Comptroller General of the United States or any of their duly authorized representatives. If Contractor carries out any of its duties under this Agreement through a sub-contract with a related organization involving a value of cost of $10,000.00 or more over a 12-month period, Contractor will cause such sub-contract to contain a clause to the effect that, until expiration of four years after furnishing of any service pursuant to said sub-contract, the related organization will make available upon request of the Secretary of Health and Human Services or the Comptroller General of the United States or any of their duly authorized representatives, copies of said sub-contract and any books, documents, records and other data of said related organization that are necessary to certify the nature and extent of such cost. This paragraph relating to the retention and production of documents is included because of possible application of Section 1861 (v)(1)(I) of the Social Security Act to this Agreement; of this section should be found to be inapplicable, then this paragraph shall be deemed inoperative and without force and effect.

The County shall have the right to inspect certain of Contractor's books and records for the purpose of verifying performance in accordance with the terms of the Contract. The County's inspection shall be limited to the verification of shipment to invoice quantities,shipment receipts, and service invoices and receipts.. After the County provides thirty (30) days written notice, the County may send a representative to a Motorola facility during normal business hours to conduct such limited review, or at the County's request, the Contractor shall provide copies of the specific documents to the County's location for review. The Contractor's books and records provided to the County pursuant to this provision shall not be used, duplicated or disclosed to any other third party without the expressed written consent of the Contractor

GC-34 WAIVER

No term or provision of this Contract shall be deemed waived and no breach consented to unless such waiver or consent shall be in writing and signed by the party claimed to have waived or consented. The waiver of any such provision shall be strictly limited to the identified provision.

GC-35 ENTIRE CONTRACT

It is expressly agreed that the provisions set forth in this Contract constitute all the understandings and agreements between the parties. Any prior agreements, promises, negotiations, or representations not expressly set forth in this Contract are of no force and effect.

GC-36 FORCE MAJEURE

Neither Contractor nor County shall be liable for failing to fulfill any obligation under this Contract if such failure is caused by an event beyond such party's reasonable control and which is not caused by such party's fault or negligence. Such events shall be limited to acts of God, acts of war, fires, lightning, floods, epidemics, or riots.

GC-37 INDEPENDENT CONTRACTOR STATUS; NO THIRD PARY BENEFICIARIES

The Contractor and its employees, agents and sub-contractors are, for all purposes arising out of the Contract, independent contractors and not employees of the County. It is expressly understood and agreed that neither the Contractor nor Contractor's employees, agents or sub-contractors shall be entitled to any benefit to which County employees may be entitled including, but not limited to, overtime or unemployment compensation, insurance or

retirement benefits, workers compensation or occupational disease benefits or other compensation or leave arrangements.

Nothing contained herein shall be deemed or construed by the parties hereto, or by any third party, as creating the relationship of principal and agent or of partnership or of joint venture or any relationship between the parties hereto other than that of independent contractors. Nothing herein shall be construed to confer upon any third parties the status of third party beneficiary.

GC-38 GOVERNMENTAL JOINT PURCHASING AGREEMENT

Pursuant to Section 4 of the Illinois Governmental Joint Purchasing Act (30 ILCS 525) and the Joint Purchase Agreement approved by the Cook County Board of Commissioners (April 9, 1965), other units of government may purchase goods or services under this contract.

GC-39 COOPERATIVE PURCHASING

As permitted by the County of Cook, other government entities may wish to also participate under the same terms and conditions contained in this contract (piggyback). Each entity wishing to piggyback must have prior authorization from the County of Cook and vendor. If such participation is authorized, all purchase orders will be issued directly from and shipped directly to the entity requiring supplies/services. The County shall not be held responsible for any orders placed, deliveries made or payment for supplies/services ordered by these entities. Each entity reserves the right to determine their participation in this contract.

GC-40 COOPERATION WITH INSPECTOR GENERAL

Persons or businesses seeking County contracts are required to abide by all ot the applicable provisions of the Office of the Independent Inspector General Ordinance (Section 2-281 et. seq. of the Cook County Code of Ordinances). Failure to cooperate as required may result in monetary and/or other penalties.

Contractors, subcontractors, licensees, grantees or persons or businesses who have a County contract, grant, license, or certification of eligibility for County contracts shall abide by all of the applicable provisions of the Office of the Independent Inspector General Ordinance (Section 2-281 et. seq. of the Cook County Code of Ordinances). Failure to cooperate as required may result in monetary and/or other penalties.

GC-41 LIMITATION OF LIABILITY AND INSURANCE

6.1 Limitation of Liability. Except for personal injury or death, Motorola's total liability to the County, whether for breach of contract, warranty, negligence, strict liability in tort, or otherwise, will be limited to the direct damages recoverable under law, but not to exceed the value of this Contract as awarded by the Cook County Board of Commissioners. . ALTHOUGH THE PARTIES ACKNOWLEDGE THE POSSIBILITY OF SUCH LOSSES OR DAMAGES, THEY AGREE THAT MOTOROLA WILL NOT be liable for any commercial loss; inconvenience; loss of use, Time, DATA, GOOD WILL, REVENUEs, profits or savings; or other SPECIAL, incidental, INDIRECT, OR consequential damages IN ANY WAY RELATED TO OR ARISING FROM THIS AGREEMENT OR THE PERFORMANCE OF SERVICES BY MOTOROLA PURSUANT TO THIS AGREEMENT. This limitation of liability will survive the expiration or termination of this Agreement and applies notwithstanding any contrary provision.

6.2 Insurance. Motorola shall obtain and maintain, at all times during the term of this agreement, insurance with insurers reasonably acceptable to County. Upon written request by County, Motorola shall provide a copy of an Acord form certificate of insurance prior to performing any work. Certificate of Insurance shall name County as the certificate holder. The General Liability policy shall list County as an additional insured. The insurance required herein shall be written for not less than the following or greater if required by law:

1. Commercial General Liability:

    a) $1,000,000 Bodily Injury and Property Damage, Each Occurrence.

    b) $2,000,000 General Annual Aggregate.

2. Business Automobile Liability:

    a) $1,000,000 Combined Single Limit

3. Worker's Compensation and Employers' Liability:

    a) Workers Compensation - Statutory

    b) Employers' Liability: $1,000,000

4. The Commercial General Liability insurance specified above shall include coverage for all Motorola's contractual liability with limits not less than those set forth in subsection 6.2.1.

Motorola's Commercial General Liability policy is written on a standard ISO coverage form. The County's policy language will determine the order of payments between Motorola and the County's policies in the event of a claim.

Insurance Notices

Motorola shall notify the Office of the Chief Procurement Officer at least 30 days prior to the effective date of any cancellation of such policies. Prior to the date on which Motorola commences performance of its part of the work or within ten (10) days of execution of this Contract, whichever occurs earlier, Motorola shall furnish to the County certificates of insurance maintained by Motorola, which shall state that Motorola's insurance is primary. The receipt of any certificate of insurance does not constitute agreement by the County that the insurance requirements have been fully met or that the insurance policies indicated on the certificate of insurance are in compliance with insurance required above.

In no event shall any failure of the County to receive certificates of insurance required hereof or to demand receipt of such Certificates of Insurance be construed as a waiver of Motorola's obligations to obtain insurance pursuant to these insurance requirements.

GC-42 FCC LICENSES AND OTHER AUTHORIZATIONS

County is solely responsible for obtaining licenses or other authorizations required by the Federal Communications Commission or any other federal, state, or local government agency and for complying with all rules and regulations required by governmental agencies. Neither Motorola nor any of its employees is an agent or representative of County in any governmental matters.

GC-43 FEDERAL CLAUSES

1. Interest of Members of or Delegates to the United States Congress

    In accordance with 41 U.S.C. § 22, the Contractor agrees that it will not admit any member of or delegate to the United States Congress to any share or part of the Contract or any benefit derived therefrom.

2. False or Fraudulent Statements and Claims

(a) The Contractor recognizes that the requirements of the Program Fraud Civil Remedies Act of 1986, as amended, 49 U.S.C. §§ 3081 et seq and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 C.F.R. Part 31, apply to its actions pertaining to the Contract. Accordingly, by signing the Contract, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, or it may make pertaining to the Contract, including without limitation any invoice for its services. In addition to other penalties that may be applicable, the Contractor also acknowledges that if it makes a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986, as amended, on the Contractor to the extent the Federal Government deems appropriate.

(b) The Contractor also acknowledges that if it makes a false, fictitious, or fraudulent claim, statement, submission, or certification to the County or Federal Government in connection with an urbanized area formula project financed with Federal assistance authorized by 49 U.S.C. § 5307, the Government reserves the right to impose on the Contractor the penalties of 18 U.S.C. § 1001 and 49 U.S.C. § 5307(n)(1), to the extent the Federal Government deems appropriate.

3. Federal Interest in Patents

(a) General. If any invention, improvement, or discovery of the Contractor is conceived or first actually reduced to practice in the course of or under the Contract, and that invention, improvement, or discovery is patentable under the laws of the Unites States of America or any foreign country, the Contractor agrees to notify County immediately and provide a detailed report.

(b) Federal Rights. Unless the Federal Government later makes a contrary determination in writing, the rights and responsibilities of the County, Contractor, and the Federal Government pertaining to that invention, improvement, or discovery will be determined in accordance with applicable Federal laws and regulations, including any waiver thereof. Unless the Federal Government later makes a contrary determination in writing, the Contractor agrees that, irrespective of its status or the status of any subcontractor at any tier (e.g., a large business, small business, non-profit organization, institution of higher education, individual), the Contractor agrees it will transmit to the Federal Government those rights due the Federal Government in any invention resulting from the contract.

Patent and rights in data requirements only apply to research projects in which the purpose of the grant is to finance the development of a product or information. These patent and data rights requirements do not apply to capital projects or operating projects, even though a small portion of the sales price may cover the cost of product development or writing the user's manual. Motorola software is developed at private expense for use in the commercial market place. Motorola software is considered confidential/propriety and is protected by the software license agreement. Any and all intellectual property rights are expressly limited by the provisions set forth in the software license agreement.

4. Federal Interest in Data and Copyrights

(a) Definition. The term "subject data" used in this section means recorded information, whether or not copyrighted, that is delivered or specified to be delivered under the Contract. Examples include, but are not limited, to: computer software, engineering drawings and associated lists, specifications, standards, process sheets, manuals, technical reports, catalog item identifications, and related information. The term "subject data" does not include financial reports, cost analyses, and similar information incidental to Contract administration.

(b) Federal Restrictions. The following restrictions apply to all subject data first produced in the performance of the Contract. Except as provided in the Contract and except for its own internal use, the Contractor may not publish or publicly reproduce subject data in whole or in part, or in any manner or form, nor may the Contractor authorize others to do so, without the written consent of the County and the Federal Government, until such time as the Federal Government may have either released or approved the release of such data to the public.

(c) Federal Rights in Data and Copyrights. In accordance with subparts 34 and 36 of the Common Rule, the County and the Federal Government reserve a royalty-free, non-exclusive and

irrevocable license to reproduce, publish, or otherwise use, and to authorize others to use, for County or Federal Government purposes, the types of subject data described below. Without the copyright owner's consent, the County and Federal Government may not extend their license to other parties.

(1) Any subject data developed under the contract or subagreement financed by a federal Grant Agreement or Cooperative Agreement, whether or not a copyright has been obtained; and

(2) Any rights of copyright which the Contractor purchases ownership with Federal assistance.

(d) Special Federal Rights for Planning Research and Development Projects. When the Federal Government provides financial assistance for a planning, research, development, or demonstration project, its general intention is to increase public knowledge, rather than limit the benefits of the project to participants in the project. Therefore, unless the Federal Government determines otherwise, the Contractor on a planning, research, development, or demonstration project agrees that, in addition to the rights in data and copyrights set forth above, the County or Federal Government may make available to any third party either a license in the copyright to the subject data or a copy of the subject data. If the project is not completed for any reason whatsoever, all data developed under the project will become subject data and will be delivered as the County or Federal Government may direct. This subsection, however, does not apply to adaptions of automatic data processing equipment or previously existing software programs for the County's use whose costs are financed with Federal transportation funds for capital projects.

(e) Hold Harmless. Unless prohibited by state law, upon request by the Federal Government, the Contractor agrees to indemnify, save, and hold harmless the Federal Government and their officers, agents, and employees acting within the scope of their official duties against any liability, including costs and expenses, resulting from any willful or intentional violation by the Contractor of proprietary rights, copyrights, or right of privacy, arising out of the publication, translation, reproduction, delivery, use, or disposition of any data furnished under the Contract. The Contractor will not be required to indemnify the Federal Government for any such liability arising out of the wrongful acts of employees or agents of the County or Federal Government.

(f) Restrictions on Access to Patent Rights. Nothing contained in this section on rights in data will imply a license to the County or Federal Government under any patent or be construed as affecting the scope of any license or other right otherwise granted to the County or Federal Government under any patent.

(g) Application on Materials Incorporated into Project. The requirements of Subsections 2, 3, and 4 of this Section do not apply to material furnished by the County and incorporated into the work.

Patent and rights in data requirements only apply to research projects in which the purpose of the grant is to finance the development of a product or information. These patent and data rights requirements do not apply to capital projects or operating projects, even though a small portion of the sales price may cover the cost of product development or writing the user's manual. Motorola software is developed at private expense for use in the commercial market place. Motorola software is considered confidential/propriety and is protected by the software license agreement. Any and all intellectual property rights are expressly limited by the provisions set forth in the software license agreement.

5. Records and Audits

Contractor will deliver or cause to be delivered all documents (including but not limited to all Deliverables and supporting data, records, graphs, charts and notes) prepared by or for the County under the terms of this Agreement to the County promptly in accordance with the time limits prescribed in this Contract, and if no time limit is specified, then upon reasonable demand therefor or upon termination or completion of the Services hereunder. In the event of the failure by the Contractor to make such delivery, then and in that event, the Contractor will pay to County reasonable damages the County may sustain by reason thereof.

The County and the Federal Government will have the right to audit all payments made to the Contractor under this Agreement. Any payments to the Contractor which exceed the amount to which the Contractor is entitled under the terms of this Agreement will be subject to set-off.

The Contractor will keep and retain records relating to this Agreement and will make such records available to representatives of the County and the Federal Government, including without limitation the sponsoring federal agency, other participating agencies, and the Comptroller General of the United States, at reasonable times during the performance of this Agreement and for at least five years after termination of this Agreement for purposes of audit, inspection, copying, transcribing and abstracting.

No provision in this Agreement granting the County or the Federal Government a right of access to records is intended to impair, limit or affect any right of access to such records which the County or the Federal Government would have had in the absence of such provisions.

In no event shall Contractor be obligated to create or maintain documents not kept in the ordinary course of business nor shall Contractor be obligated to disclose any documents or information it deems, upon good faith and after due inquiry, to be confidential or proprietary.

6. Environmental Requirements

The Contractor recognizes that many Federal and state laws imposing environmental and resource conservation requirements may apply to the Contract. Some, but not all, of the major Federal Laws that may affect the Contract include: the National Environmental Policy Act of 1969, as amended, 42 U.S.C. §§ 4321 et seq.; the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq. and scattered sections of 29 U.S.C.; the Clean Water Act, as amended, scattered sections of 33 U.S.C. and 12 U.S.C.; the Resource Conservation and Recovery Act, as amended, 42 U.S.C. §§ 6901 et seq.; and the Comprehensive Environmental Response, Compensation, and Liability acct, as amended, 42 U.S.C. §§ 9601 et seq. The Contractor also recognizes that U.S. EPA, U.S. DOT and other agencies of the Federal Government have issued and are expected in the future to issue regulations, guidelines, standards, orders, directives, or other requirements that may affect the Contract. Thus, the Contractor agrees to adhere to, and impose on its subcontractors, any such Federal requirements as the Federal Government may now or in the future promulgate. Listed below are requirements of particular concern. The Contractor acknowledges that this list does not constitute the Contractor's entire obligation to meet all Federal environmental and resource conservation requirements. The Contractor will include these provisions in all subcontracts.

(a) Environmental Protection. The Contractor agrees to comply with the applicable requirements of the National Environmental Policy Act of 1969, as amended, 42 U.S.C. §§ 4321 et seq. in accordance with Executive Order No. 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," 59 Fed. Reg. 7629, Feb. 16, 1994; U.S. DOT statutory requirements on environmental matters at 49 U.S.C. § 5324(b); Council on Environmental Quality regulations on compliance with the National Environmental Policy Act of 1969, as amended, 40 C.F.R. Part 1500 et seq.; and U.S. DOT regulations, "Environmental Impact and Related Procedures," 23 C.F.R. Part 771 and 49 C.F.R. Part 622.

(b) Air Quality. The Contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq. Specifically, the Contractor agrees to comply with applicable requirements of U.S. EPA regulations, "Conformity to State of Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Act," 40 C.F.R. Part 51, Subpart T; and "Determining Conformity of Federal Actions to State or Federal Implementation Plans," 40 C.F.R. Part 93. The Contractor further agrees to report and require each subcontractor at any tier to report any violation of these requirements resulting from any Contract implementation activity to the County and the appropriate U.S. EPA Regional Office.

(c) Clean Water. The Contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. §§ 1251 et seq. The Contractor further agrees to report and require each subcontractor at any tier to report any violation of these requirements resulting from any Contract implementation activity to the County and the appropriate U.S. EPA Regional Office.

(d) List of Violating Facilities. The Contractor agrees that any facility to be used in the performance of the Contract or to benefit from the Contract will not be listed on the U.S. EPA List of Violating Facilities ("List"), and the Contractor will promptly notify the County if the Contractor receives any communication from the U.S. EPA that such a facility is under consideration for inclusion on the List.

(e) Preference for Recycled Products. To the extent practicable and economically feasible and to the extent that it does not reduce or impair the quality of the work, the Contractor agrees to use recycled products in performance of the Contract pursuant to U.S. Environment Protection Agency (U.S. EPA) guidelines at 40 C.F.R. Parts 247-253, which implement section 6002 of the Resource Conservation and Recovery Act, as amended, 42 U.S.C. § 6962.

7. No Exclusionary or Discriminatory Specifications

Apart from inconsistent requirements imposed by Federal statute or regulations, the Contractor agrees that it will comply with the requirements of 49 U.S.C. § 5323(h)(2) by refraining from using any Federal assistance to support subcontracts procured using exclusionary or discriminatory specifications.

8. Cargo Preference - Use of United States Flag Vessels

The Contractor agrees to comply with U.S. Maritime Administration regulations, "Cargo-Preference -- U.S. Flag Vessels," 49 C.F.R. Part 381, and to include the clauses required by those regulations, modified as necessary to identify the affected parties, in each subcontract or subagreement involving equipment, materials, or commodities suitable for transport by ocean vessel.

9. Fly America

Section 14.c of the Master Agreement states that if the contract or subcontracts may involve the international transportation of goods, equipment, or personnel by air, the contract must require Contractors and subcontractors at every tier to use U.S.-flag air carriers, to the extent service by these carriers is available. 49 U.S.C. 40118 and 4 C.F.R. Part 52.

10. No Federal Government Obligations to Third Parties

The Contractor agrees that, absent the Federal Government's express written consent, the Federal Government will not be subject to any obligations or liabilities to any contractor or any other person not a party to the Grant Agreement or Cooperative Agreement between the County and the Federal Government which is a source of funds for this Contract. Notwithstanding any concurrence provided by the Federal Government in or approval of any solicitation, agreement, or contract, the Federal Government continues to have no obligations or liabilities to any party, including the Contractor.

11. Allowable Costs

Notwithstanding any compensation provision to the contrary, the Contractor's compensation under this Contract will be limited to those amounts which are allowable and allocable to the Contract in accordance with OMB Circular A-87 and the regulations in 49 C.F.R. Part 18. To the extent that an audit reveals that the Contractor has received payment in excess of such amounts, the County may offset such excess payments against any future payments due to the Contractor and, if no future payments are due or if future payments are less than such excess, the Contractor will promptly refund the amount of the excess payments to the County.

12. Trade Restrictions Contractor certifies that neither it nor any Subcontractor:

(a) is owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms published by the Office of the United States Trade Representative (USTR);

(b) has knowingly entered into any contract or subcontract with a person that is a citizen or national of a foreign country on said list, nor is owned or controlled directly or indirectly by one or more citizens or nationals of a foreign country on said list;

(c) will procure, subcontract for, or recommend any product that is produced in a foreign country on said list.

Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no Notice-to-Proceed will be issued to an entity who is unable to certify to the above. If Contractor knowingly procures or subcontracts for the supply of any product or service of a foreign country on said list for use on the project, the USDOT may direct, through the County, cancellation of the Contract at no cost to the Government. Further, Contractor agrees that it will incorporate this provision for certification without modification in each subcontract. Contractor may rely on the certification of a prospective Subcontractor unless it has knowledge that the certification is erroneous. Contractor will provide immediate written notice to the County if it learns that its certification or that of a Subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. Each Subcontractor must agree to provide written notice to Contractor if at any time it learns that its certification was erroneous by reason of changed circumstances. Nothing contained in the foregoing will be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision. The knowledge and information of the Contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code, Section 100.

13. Contract Work Hours and Safety Standards Act

If applicable according to their terms, the Contractor agrees to comply and assures compliance with sections 102 and 107 of the Contract Work Hours and Safety Standards Act, as amended, 40 U.S.C. §§ 327 through 333, and implementing U.S. DOL regulations, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction (also Labor Standards Provisions Applicable to Nonconstruction Contracts Subject to the Contract Work Hours and Safety Standards Act)," 29 C.F.R. Part 5; and U.S. DOL regulations, "Safety and Health Regulations for Construction," 29 C.F.R. Part 1926. In addition to other requirements that may apply:

(a) In accordance with section of the Contract Work Hours and Safety Standards Act, as amended, 40 U.S.C. §§ 327 through 332, the Contractor agrees and assures that, for the Contract, the wages of every mechanic and laborer will be computed on the basis of a standard work week of 40 hours, and that each worker will be compensated for work exceeding the standard work week at a rate of not less than 1.5 times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The Contractor agrees that determinations pertaining to these requirements will be made in accordance with applicable U.S. DOL regulations, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction (also Labor Standards Provisions Applicable to Nonconstruction Contracts Subject to the Contract Work Hours and Safety Standards Act)," 29 C.F.R. Part 5.

(b) In accordance with section 107 of the Contract Work Hours and Safety Standards Act, as amended, 40 U.S.C. § 333, the contractor agrees and assures that no laborer or mechanic working on a construction contract will be required to work in surroundings or under working conditions that are unsanitary, hazardous, or dangerous to his or her health and safety, as determined in accordance with U.S. DOL regulations, "Safety and Health Regulations for Construction," 29 C.F.R. Part 1926.

14. Veteran's Preference

In the employment of labor (except in executive, administrative, and supervisory positions), preference will be given to Vietnam-era veterans and disabled veterans. However, this preference may be given only where individuals are available and qualified to perform the work to which employment relates.

15. Copyright Ownership

None of the work under this contract is intended to be a creation of works for hire by Contractor on behalf of the County.

For purposes of this contract, "Proprietary Rights" means the patents, patent applications, inventions, copyrights, trade secrets, trademarks, trade names, mask works, know-how, and other intellectual property rights in and to the equipment and software, including those created or produced by Contractor under this contract and any corrections, bug fixes, enhancements, updates or modifications to or derivative works from the software whether made by Contractor or another party.

Contractor, the third party manufacturer of any equipment, and the copyright owner of any non-Motorola software own and retain all of their respective Proprietary Rights in the Equipment and Software, and nothing in this contract is intended to restrict their Proprietary Rights. All intellectual property developed, originated, or prepared by Contractor in connection with providing to County the Equipment, Software, or related services remain vested exclusively in Contractor, and this contract does not grant to County or any other third party, including but not limited to the government of the United States of America, any shared development rights of intellectual property. Except as explicitly provided in the Software License Agreement, Contractor does not grant to County or the government of the United States of America, either directly or by implication, estoppel, or otherwise, any right, title or interest in Contractor's Proprietary Rights. The preceding sentence does not apply to Open Source Software which is governed by the standard license of the copyright owner.

16. Accessibility Compliance

If this Agreement involves design for construction, the Consultant warrants that all design documents produced or utilized under this Agreement and all construction or alterations undertaken under this Agreement will comply with all federal, state and local laws and regulations regarding accessibility standards for persons with disabilities or environmentally limited persons including, but not limited to, the following: the Americans with Disabilities Act of 1990, 42 U.S.C. § 12101 et seq. and the Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities ("ADAAG"); the Architectural Barriers Act, Pub. L. 90-480 (1968), and the Uniform Federal Accessibility Standards ("UFAS"); and the Illinois Environmental Barriers Act, 410 ILCS 25/1 et seq., and all regulations promulgated thereunder , see Illinois Administrative Code, Title 71, Chapter 1, Section 400.110. If the above standards are inconsistent, the Consultant must comply with the standard providing the greatest accessibility. Also, the Consultant must, prior to construction, review the plans and specifications to insure compliance with the above referenced standards. If the Consultant fails to comply with the foregoing standards, the Consultant must perform again, at no expense, all services required to be re-performed as a direct or indirect result of such failure.

18. Equal Employment Opportunity

All contracts shall contain a provision requiring compliance with E.O. 11246, "Equal Employment Opportunity," as amended by E.O. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and as supplemented by regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

19. Copeland "Anti-Kickback" Act (18 U.S.C. 874 and 40 U.S.C. 276c)

All contracts and subgrants in excess of $2000 for construction or repair awarded by recipients and subrecipients shall include a provision for compliance with the Copeland "Anti-Kickback" Act (18 U.S.C. 874), as supplemented by Department of Labor regulations (29 CFR part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or subrecipient shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he is otherwise entitled. The recipient shall report all suspected or reported violations to the Federal awarding agency.

20. Davis-Bacon Act, as amended (40 U.S.C. 276a to a-7)

When required by Federal program legislation, all construction contracts awarded by the recipients and subrecipients of more than $2000 shall include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 276a to a-7) and as supplemented by Department of Labor regulations (29 CFR part 5, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction"). Under this Act, contractors shall be required to pay wages to laborers and mechanics at a rate not less than the minimum wages specified in a wage determination made by the Secretary of Labor. In addition, contractors shall be required to pay wages not less than once a week. The recipient shall place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation and the award of a contract shall be conditioned upon the acceptance of the wage determination. The recipient shall report all suspected or reported violations to the Federal awarding agency.

Contractor reviewed the Davis Bacon Act and determined that Contractor will not be performing any work under the contract to which the Davis Bacon Act would apply. Therefore, the Davis Bacon Act is not applicable to Contractor's performance under the contract.

21. Contract Work Hours and Safety Standards Act (40 U.S.C. 327-333)

Where applicable, all contracts awarded by recipients in excess of $2000 for construction contracts and in excess of $2500 for other contracts that involve the employment of mechanics or laborers shall include a provision for compliance with Sections 102 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-333), as supplemented by Department of Labor regulations (29 CFR part 5). Under Section 102 of the Act, each contractor shall be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than 1 ½ times the basic rate of pay for all hours worked in excess of 40 hours in the work week. Section 107 of the Act is applicable to construction work and provides that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

23. Clean Air Act (42 U.S.C. 7401 et seq.) and the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.), as amended

Contracts and subgrants of amounts in excess of $100,000 shall contain a provision that requires the recipient to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401 et seq.) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251 et seq.). Violations shall be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

24. Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)

Contractors who apply or bid for an award of $100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient.

25. Debarment and Suspension (E.O.s 12549 and 12689)
No contract shall be made to parties listed on the General Services Administration's List of Parties Excluded from Federal Procurement or Nonprocurement Programs in accordance with E.O.s 12549 and 12689, "Debarment and Suspension." This list contains the names of parties debarred, suspended, or otherwise excluded by agencies, and contractors declared ineligible under statutory or regulatory authority other than E.O. 12549. Contractors with awards that exceed the small purchase threshold shall provide the required certification regarding its exclusion status and that of its principal employees.

GC-44 NON-APPROPRIATION

If this contract is a multi-year contract, the following provision applies: In the event grant funds are exhausted,or funds are not appropriated by the County Board, or there is a change in services or Departmental funding for services or supplies which results in the elimination of the services or supplies which are the subject of the contract, this Contract shall be cancelled without penalty to, or further payment being required by the County. The County shall give the Contractor notice of failure of funding or change in services as soon as practicable after the County becomes aware of the failure of funding. The County's obligation to perform shall cease immediately upon receipt of notice by the Contractor of lack of appropriated funds, and the contact shall be subject to immediate termination. The Contract shall also be subject to immediate termination or cancellation at any time when there are insufficient authorized funds lawfully available to the County to meet such obligation.

END OF SECTION

EXHIBIT C
EQUIPMENT AND PARTS PURCHASE
SUPPLEMENTAL TERMS AND CONDITIONS

Price and Payment Terms. Title to software will not pass to County at any time.

Software. Replacement parts provided pursuant to this Contract may include software embedded in it. If this transaction involves software, any software owned by Contractor ("Motorola Software") is licensed to County solely in accordance with Contractor's Software License Agreement ("SLA"), which is attached as Exhibit A and incorporated herein by this reference. Any software owned by a third party ("Non-Motorola Software") is licensed to County in accordance with the standard license, terms, and restrictions of the copyright owner unless the owner has granted to Contractor the right to sublicense its software pursuant to the SLA, in which case the SLA applies and the owner will have all rights and protections under the SLA as the Licensor. Contractor makes no representations or warranties of any kind regarding Non-Motorola Software.

Express Limited Warranty for Equipment and Parts and Warranty Disclaimer. Motorola Software is warranted in accordance with the SLA. For one year from the date of shipment, Contractor warrants that the equipment and parts under normal use and service are free from material defects in material and workmanship. These warranties do not apply to (i) defects or damage resulting from: use of the equipment, part, or Motorola Software in other than its normal, customary, and authorized manner; accident, liquids, neglect, or acts of God; testing, maintenance, disassembly, repair, installation, alteration, modification, or adjustment not provided or authorized in writing by Contractor; or County's failure to comply with all applicable industry and OSHA standards; (ii) breakage of or damage to antennas unless caused directly by defects in material or workmanship; (iii) equipment that has had the serial number removed or made illegible; (iv) batteries (because they carry their own separate limited warranty) or consumables; (v) freight costs to ship equipment or parts to the repair depot; (vi) scratches or other cosmetic damage to equipment surfaces that does not affect the operation of the equipment; and (vii) normal or customary wear and tear. These express limited warranties are extended by Contractor to the original user purchasing the products for commercial, industrial, or governmental use only, and are not assignable or transferable. If County gives notice of a valid warranty claim before the expiration of the warranty period, Contractor will (at its option and at no additional charge to County) repair the defective product, replace it with the same or equivalent product, or refund the price of the defective product. This action will be the full extent of Contractor's liability for a warranty claim. Repaired or replaced product is warranted for the balance of the original applicable Warranty Period. All replaced products or parts will become the property of Contractor. THESE WARRANTIES ARE THE COMPLETE WARRANTIES AND ARE GIVEN IN LIEU OF ALL OTHER WARRANTIES. SELLER DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

LIMITATION OF LIABILITY. Except for personal injury or death, Motorola's total liability to the County, whether for breach of contract, warranty, negligence, strict liability in tort, or otherwise, will be limited to the direct damages recoverable under law, but not to exceed the value of this Contract as awarded by the Cook County Board of Commissioners. . ALTHOUGH THE PARTIES ACKNOWLEDGE THE POSSIBILITY OF SUCH LOSSES OR DAMAGES, THEY AGREE THAT MOTOROLA WILL NOT BE LIABLE FOR ANY COMMERCIAL LOSS; INCONVENIENCE; LOSS OF USE, TIME, DATA, GOOD WILL, REVENUES, PROFITS OR SAVINGS; OR OTHER SPECIAL, INCIDENTAL, INDIRECT, OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO OR ARISING FROM THIS AGREEMENT OR THE PERFORMANCE OF SERVICES BY MOTOROLA PURSUANT TO THIS AGREEMENT. This limitation of liability will survive the expiration or termination of this Agreement and applies notwithstanding any contrary provision.

Miscellaneous: Each party will comply with all applicable laws, regulations and rules concerning the performance of this Agreement or use of the products. Customer will obtain and comply with all FCC licenses and authorizations required for the installation, operation and use of the products.

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Exhibit CContinued)
Software License Agreement

In this Exhibit A, the term "Licensor" means Motorola Solutions, Inc., ("Motorola"); "Licensee," means the County of Cook, Illinois ("County"); "Primary Agreement" means the contract to which this Exhibit and the Equipment and Parts Purchase Supplemental Terms and Conditions are attached; and "Agreement" means this Exhibit and the applicable terms and conditions contained in the Primary Agreement. The parties agree as follows:

Section 1 SCOPE

Licensor will provide to Licensee proprietary software, radio communications, computer, or other electronic products ("Products") containing embedded or pre-loaded proprietary software, or both. "Software" means the proprietary software in object code format, and adaptations, translations, de-compilations, disassemblies, emulations, or derivative works of the software, and may contain one or more items of software owned by a third party supplier ("Third Party Software"). Product and Software documentation that specifies technical and performance features and capabilities, and the user, operation and training manuals for the Software (including all physical or electronic media upon which this information is provided) are collectively referred to as "Documentation." This Agreement contains the terms and conditions pursuant to which Licensor will license to Licensee, and Licensee may use, the Software and Documentation.

Section 2 GRANT OF LICENSE

Subject to Section 1, Licensor hereby grants to Licensee a personal, non-transferable (except as permitted in Section 8 below), limited, and non-exclusive license under Licensor's applicable proprietary rights to use the Software and related Documentation for the purposes for which they were designed and in accordance with the terms and conditions of this Agreement. The license does not grant any rights to source code.

If the Software is or includes Integration Framework, Customer Service Request ("CSR"), or Cityworks software, that Software is licensed pursuant to this Software License Agreement plus a separate document entitled "Software License Agreement Rider for Integration Framework, Customer Service Request, or Cityworks Software" (which document is incorporated by this reference and is either attached to this Agreement or will be provided upon Licensee's request).

Section 3 LIMITATIONS ON USE

3.1. Licensee acknowledges that Licensor has made a considerable investment of resources in the development, marketing, and distribution of its proprietary Software and Documentation and that reasonable and appropriate limitations on Licensee's use of the Software and Documentation are necessary for Licensor to protect its investment, trade secrets, and valuable intellectual property rights concerning the Software and Documentation, Therefore, Licensee may use the Software only for Licensee's internal business purposes and only in accordance with the Documentation. Any other use of the Software is strictly prohibited. Licensee may not for any reason modify, disassemble, peel components, decompile, otherwise reverse engineer or attempt to reverse engineer, derive source code, create derivative works from, adapt, translate, merge with other software, copy, reproduce, distribute, or export any Software or permit or encourage any third party to do so, except that Licensee may make one copy of Software provided by Licensor to be used solely for archival, back-up, or disaster recovery purposes. Licensee must reproduce all copyright and trademark notices on all copies of the Software and Documentation.

3.2. Licensee may not copy onto or transfer Software installed in one Product device onto another device. Notwithstanding the preceding sentence, Licensee may temporarily transfer Software installed on one device onto another if the original device is inoperable or malfunctioning, if Licensee provides written notice to Licensor of this temporary transfer and it is discontinued when the original device is returned to operation. Upon Licensor's written request, Licensee must provide to Licensor a written list of all Product devices in which the Software is installed and being used by Licensee.

3.3. [Intentionally Omitted]

Section 4 OWNERSHIP AND TITLE

Title to all copies of Software will not pass to Licensee at any time but remains vested exclusively in the copyright owner. The copyright owner owns and retains all of its proprietary rights in any form concerning the Software and Documentation, including all rights in patents, patent applications, inventions, copyrights, trade secrets, trademarks, trade names, and other intellectual properties (including any corrections, bug fixes, enhancements, updates, or modifications to or derivative works from the Software whether made by Licensor or another party, or any improvements that result from Licensor's

processes or, if applicable, providing information services). Nothing in this Agreement is intended to restrict the proprietary rights of Licensor or to grant by implication or estoppel any proprietary rights. All intellectual property developed, originated, or prepared by Licensor in connection with providing to Licensee Software, Products, or related services remain vested exclusively in Licensor, and this Agreement does not grant to Licensee any shared development rights of intellectual property.

Section 5 CONFIDENTIALITY

Licensee acknowledges that the Software and Documentation contain Licensor's valuable proprietary and Confidential Information and trade secrets, and that the provisions in the Agreement concerning Confidential Information apply.

Section 6 LIMITED WARRANTY

6.1. The commencement date and the term of the Software warranty will be as stated in the Primary Agreement, except that the Warranty Period for application Software that is provided on a per unit basis, the Warranty Period for subsequent units licensed is the remainder (if any) of the initial Warranty Period or, if the initial Warranty Period has expired, the remainder (if any) of the term of the applicable Software Maintenance and Support Agreement.

6.2. During the applicable Warranty Period, Licensor warrants that the unmodified Software, when used properly and in accordance with this Agreement, will be free from a reproducible defect that eliminates the functionality or successful operation of a feature critical to the primary functionality or successful operation of the Software. Whether a defect occurs will be determined solely with reference to the Documentation. Licensor does not warrant that Licensee's use of the Software or Products will be uninterrupted or error-free or that the Software or the Products will meet Licensee's particular requirements. Warranty claims are described in the Primary Agreement.

6.3. LICENSOR DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE TRANSACTION COVERED BY THIS AGREEMENT IS A LICENSE AND NOT A SALE OF GOODS.

Section 7 LIMITATION OF LIABILITY

I[Intentionally Omitted]

Section 8 TRANSFERS

Licensee will not transfer Software to any third party without Licensor's prior written consent, which consent may be withheld in Licensor's reasonable discretion and which may be conditioned upon the transferee paying all applicable license fees and agreeing to be bound by this Agreement. Notwithstanding the preceding sentence, if Licensee transfers ownership of radio Products to a third party, Licensee may assign its rights to use the Software (other than Radio Service Software and Motorola's FLASHport® Software) embedded in or furnished for use with those radio Products if Licensee transfers all copies of the Software and the related Documentation to the transferee, and the transferee executes a transfer form to be provided by Licensor upon request (which form obligates the transferee to be bound by this Agreement).

Section 9 TERM AND TERMINATION

[Intentionally Omitted]Section 10 NOTICES

Notices are described in the Primary Agreement.

Section 11 UNITED STATES GOVERNMENT LICENSING PROVISIONS

If Licensee is the United States Government or a United States Government agency, then this section applies. Licensee's use, duplication or disclosure of the Software and Documentation under Licensor's copyrights or trade secret rights is subject to the restrictions set forth in subparagraphs (c)(1) and (2) of the Commercial Computer Software-Restricted Rights clause at FAR 52.227-19 (JUNE 1987), if applicable, unless they are being provided to the Department of Defense. If the Software and Documentation are being provided to the Department of Defense, Licensee's use, duplication, or disclosure of Software and Documentation is subject to the restricted rights set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013 (OCT 1988), if applicable. The Software and Documentation may or may not include a Restricted Rights notice, or other notice referring to this Agreement. The provisions of this Agreement will continue to apply, but only to the extent that they are consistent with the rights provided to the Licensee under the provisions of the FAR or DFARS mentioned above, as applicable to the particular procuring agency and procurement transaction.

Section 12 GENERAL

12.1. COPYRIGHT NOTICES. The existence of a copyright notice on the Software will not be construed as an admission or presumption that public disclosure of the Software or any trade secrets associated with the Software has occurred.

12.2. COMPLIANCE WITH LAWS. Licensee will comply with all applicable laws and regulations, including export laws and regulations of the United States. Licensee will not, without the prior authorization of Licensor and the appropriate governmental authority of the United States, in any form export or re-export, sell or resell, ship or reship, or divert, through direct or indirect means, any item or technical data or direct or indirect products sold or otherwise furnished to any person within any territory for which the United States Government or any of its agencies , at the time of the action, requires an export license or other governmental approval. Violation of this provision will be a material breach of this Agreement, permitting immediate termination by Licensor.

12.3. ASSIGNMENTS. [Intentionally Omitted]

12.4. GOVERNING LAW. [Intentionally Omitted]

EXHIBIT 5

Evidence of Insurance

MOTOROLA SOLUTIONS

MEMORANDUM OF INSURANCE

PRODUCER AON RISK SERVICES CENTRAL, INC. AON CENTER 200 EAST RANDOLPH STREET CHICAGO, ILLINOIS 60601 D/B/A Aon Risk Insurance Services of Illinois. CA License #0095623	**THIS MEMORANDUM IS A MATTER OF INFORMATION ONLY. THIS MEMORANDUM DOES NOT AMEND, EXTEND OR ALTER THE COVERAGES AFFORDED BY THE POLICIES BELOW.**
	COMPANIES AFFORDING COVERAGE
	COMPANY A LIBERTY MUTUAL FIRE INSURANCE COMPANY
INSURED MOTOROLA SOLUTIONS, INC. AND ITS SUBSIDIARIES	COMPANY B LIBERTY INSURANCE CORPORATION
	COMPANY C
1303 EAST ALGONGUIN ROAD SCHAUMBURG, IL 60196	COMPANY D

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES, LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY/)	LIMITS	
A	**GENERAL LIABILITY** -Commercial General Liability -Occurrence	TB2-641-005169-072	7/01/2012	7/01/2013	GENERAL AGGREGATE	$5,000,000
					PRODUCTS - COMP/OP AGG	Included
					PERSONAL & ADV INJURY	$5,000,000
					EACH OCCURENCE	$5,000,000
					FIRE DAMAGE (any one fire)	$250,000
					MED EXP (any one person)	$10,000
A	**AUTOMOBILE LIABILITY** -Any Auto	AS2-641-005169-012 (Domestic Auto- All Sates)	7/01/2012	7/01/2013	COMBINED SINGLE LIMIT	$5,000,000
					BODILY INJURY (per accident)	
					BODILY INJURY (per accident)	
					PROPERTY DAMAGE	
	GARAGE LIABILITY				AUTO ONLY (each accident)	
					OTHER THAN AUTO ONLY	
					EACH ACCIDENT	
					AGGREGATE	
	EXCESS LIABILITY				EACH OCCURENCE	
					AGGREGATE	
B	**WORKERS COMP & EMPLOYER'S LIABILITY**	WA7-64D-005169-082 (AOS)	7/01/2012	7/01/2013	X WC Statutory limits	
B		WC7-641-005169-092 (WI)			EL EACH ACCIDENT	$1,000,000
					EL DISEASE-POLICY LIMIT	$1,000,000
					EL DISEASE – EA EMPLOYEE	$1,000,000
	OTHER					

FOR INFORMATIONAL PURPOSES ONLY

ECONOMIC DISCLOSURE STATEMENT
AND EXECUTION DOCUMENT
INDEX

Section	Description	Pages
Instructions	Instructions for Completion of EDS	EDS i - ii
1	MBE/WBE Utilization Plan	EDS 1
2	Letter of Intent	EDS 2
3	Petition for Reduction/Waiver of MBE/WBE Participation Goals	EDS 3
4	Certifications	EDS 4, 5
5	Economic and Other Disclosures, Affidavit of Child Support Obligations and Disclosure of Ownership Interest	EDS 6 – 12
6	Sole Proprietor Signature Page	EDS 13a/b/c
7	Partnership Signature Page	EDS 14/a/b/c
8	Limited Liability Corporation Signature Page	EDS 15a/b/c
9	Corporation Signature Page	EDS 16a/b/c
10	Cook County Signature Page	EDS 17

INSTRUCTIONS FOR COMPLETION OF ECONOMIC DISCLOSURE STATEMENT AND EXECUTION DOCUMENT

This Economic Disclosure Statement and Execution Document ("EDS") is to be completed and executed by every Bidder on a County contract, every party responding to a Request for Proposals or Request for Qualifications "(Proposer"), and others as required by the Chief Procurement Officer. If the Undersigned is awarded a contract pursuant to the procurement process for which this EDS was submitted (the "Contract"), this Economic Disclosure Statement and Execution Document shall stand as the Undersigned's execution of the Contract.

Definitions. Capitalized terms used in this EDS and not otherwise defined herein shall have the meanings given to such terms in the Instructions to Bidders, General Conditions, Request for Proposals, Request for Qualifications, or other documents, as applicable.

"Affiliated Entity" means a person or entity that, directly or indirectly: controls the Bidder, is controlled by the Bidder, or is, with the Bidder, under common control of another person or entity. Indicia of control include, without limitation, interlocking management or ownership; identity of interests among family members; shared facilities and equipment; common use of employees; and organization of a business entity following the ineligibility of a business entity to do business with the County under the standards set forth in the Certifications included in this EDS, using substantially the same management, ownership or principals as the ineligible entity.

"Bidder," "Proposer," "Undersigned," or ***"Applicant,"*** is the person or entity executing this EDS. Upon award and execution of a Contract by the County, the Bidder, Proposer, Undersigned or Applicant, as the case may be, shall become the Contractor or Contracting Party.

"Proposal," for purposes of this EDS, is the Undersigned's complete response to an RFP/RFQ, or if no RFQ/RFP was issued by the County, the "Proposal" is such other proposal, quote or offer submitted by the Undersigned, and in any event a "Proposal" includes this EDS .

"Code" means the Code of Ordinances, Cook County, Illinois available through the Cook County Clerk's Office website (http://www.cookctyclerk.com/sub/ordinances.asp). This page can also be accessed by going to www.cookctyclerk.com, clicking on the tab labeled "County Board Proceedings," and then clicking on the link to "Cook County Ordinances."

"Contractor" or ***"Contracting Party"*** means the Bidder, Proposer or Applicant with whom the County has entered into a Contract.

"EDS" means this complete Economic Disclosure Statement and Execution Document, including all sections listed in the Index and any attachments.

"Lobby" or "lobbying" means to, for compensation, attempt to influence a County official or County employee with respect to any County matter.

"Lobbyist" means any person or entity who lobbies.

"Prohibited Acts" means any of the actions or occurrences which form the basis for disqualification under the Code, or under the Certifications hereinafter set forth.

Sections 1 through 3: MBE/WBE Documentation. Sections 1 and 2 must be completed in order to satisfy the requirements of the County's MBE/WBE Ordinance, as set forth in the Contract Documents, if applicable. If the Undersigned believes a waiver is appropriate and necessary, Section 3, the Petition for Waiver of MBE/WBE Participation must be completed.

Section 4: Certifications. Section 4 sets forth certifications that are required for contracting parties under the Code. Execution of this EDS constitutes a warranty that all the statements and certifications contained, and all the facts stated, in the Certifications are true, correct and complete as of the date of execution.

Section 5: Economic and Other Disclosures Statement. Section 5 is the County's required Economic and Other Disclosures Statement form. Execution of this EDS constitutes a warranty that all the information provided in the EDS is true, correct and complete as of the date of execution, and binds the Undersigned to the warranties, representations, agreements and acknowledgements contained therein.

INSTRUCTIONS FOR COMPLETION OF ECONOMIC DISCLOSURE STATEMENT AND EXECUTION DOCUMENT

Sections 6, 7, 8, 9: Execution Forms. The Bidder executes this EDS, and the Contract, by completing and signing three copies of the appropriate Signature Page. Section 6 is the form for a sole proprietor; Section 7 is the form for a partnership or joint venture; Section 8 is the form for a Limited Liability Corporation, and Section 9 is the form for a corporation. Proper execution requires **THREE ORIGINALS**; therefore, the appropriate Signature Page must be filled in, three copies made, and all three copies must be properly signed, notarized and submitted. The forms may be printed and completed by typing or hand writing the information required.

Required Updates. The information provided in this EDS will be kept current. In the event of any change in any information provided, including but not limited to any change which would render inaccurate or incomplete any certification or statement made in this EDS, the Undersigned will supplement this EDS up to the time the County takes action, by filing an amended EDS or such other documentation as is requested.

Additional Information. The County's Governmental Ethics and Campaign Financing Ordinances, impose certain duties and obligations on persons or entities seeking County contracts, work, business, or transactions. For further information please contact the Director of Ethics at (312) 603-4304 (69 W. Washington St. Suite 3040, Chicago, IL 60602) or visit our web-site at www.cookcountygov.com and go to the Ethics Department link. The Bidder must comply fully with the applicable ordinances.

MBE/WBE UTILIZATION PLAN (SECTION 1)

BIDDER/PROPOSER HEREBY STATES that all MBE/WBE firms included in this Plan are certified MBEs/WBEs by at least one of the entities listed in the General Conditions.

I. **BIDDER/PROPOSER MBE/WBE STATUS:** (check the appropriate line)

____ Bidder/Proposer is a certified MBE or WBE firm. (If so, attach copy of appropriate Letter of Certification)

____ Bidder/Proposer is a Joint Venture and one or more Joint Venture partners are certified MBEs or WBEs. (If so, attach copies of Letter(s) of Certification, a copy of Joint Venture Agreement clearly describing the role of the MBE/WBE firm(s) and its ownership interest in the Joint Venture and a completed Joint Venture Affidavit - available from the Office of Contract Compliance)

X Bidder/Proposer is not a certified MBE or WBE firm, nor a Joint Venture with MBE/WBE partners, but will utilize MBE and WBE firms either directly or indirectly in the performance of the Contract. (If so, complete Sections II and III).

II. ☐ Direct Participation of MBE/WBE Firms ☒ Indirect Participation of MBE/WBE Firms

Where goals have not been achieved through direct participation, Bidder/Proposer shall include documentation outlining efforts to achieve Direct Participation at the time of Bid/Proposal submission. Indirect Participation will only be considered after all efforts to achieve Direct Participation have been exhausted. Only after written documentation of Good Faith Efforts is received will Indirect Participation be considered.

MBEs/WBEs that will perform as subcontractors/suppliers/consultants include the following:

MBE/WBE Firm: BOB Maintenance

Address: 537 Capital Drive, Lake Zurich, IL 60047

E-mail: sosorio@bbmaint.com

Contact Person: Silverio Osorio Phone: (847)550-6060

Dollar Amount Participation: $ 1,750,000

Percent Amount of Participation: 35 %

*Letter of Intent attached? Yes X No ____
*Letter of Certification attached? Yes X No ____

MBE/WBE Firm: ____

Address: ____

E-mail: ____

Contact Person: ____ Phone: ____

Dollar Amount Participation: $ ____

Percent Amount of Participation: ____ %

*Letter of Intent attached? Yes ____ No ____
*Letter of Certification attached? Yes ____ No ____

Attach additional sheets as needed.

***Additionally, all Letters of Intent, Letters of Certification and documentation of Good Faith Efforts omitted from this bid/proposal must be submitted to the Office of Contract Compliance so as to assure receipt by the Contract Compliance Administrator not later than three (3) business days after the Bid Opening date.**

COOK COUNTY GOVERNMENT LETTER OF INTENT (SECTION 2)

M/WBE Firm: B&B Maintenance
Certifying Agency: Cook
Address: 537 Capital Drive
Certification Expiration Date: 8/1/13
City/State: Lake Zurich, IL Zip: 60047
FEIN #: 36-3045521
Phone: (847)550-6060 Fax: (847)550-1551
Contact Person: Silverio Osorio
Email: SOsorio@bbmaint.com
Contract #: 1350-12734

Participation: [ ] Direct [X] Indirect

Will the M/WBE firm be subcontracting any of the performance of this contract to another firm?

[X] No [ ] Yes – Please attach explanation. Proposed Subcontractor: _____

The undersigned M/WBE is prepared to provide the following Commodities/Services for the above named Project/ Contract:

Janitorial Services

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/ Services:

$1,750,000, 35%

(If more space is needed to fully describe M/WBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/ Supply and Fee/Cost were completed.

Signature (*M/WBE*)
Silverio Osorio
Print Name
B&B Maintenance Inc
Firm Name
6/13/13
Date

Subscribed and sworn before me
this 13th day of June, 2013.
Notary Public
SEAL

Official Seal
Renee Grinvalds
Notary Public State of Illinois
My Commission Expires 06/20/2016

Signature (*Prime Bidder/Proposer*)
Megan Stock
Print Name
Motorola Solutions, Inc.
Firm Name
6-13-2013
Date

Subscribed and sworn before me
this 13th day of June, 2013.
Notary Public
SEAL

Official Seal
Renee Grinvalds
Notary Public State of Illinois
My Commission Expires 06/20/2016

PETITION FOR WAIVER OF MBE/WBE PARTICIPATION (SECTION 3)

A. BIDDER/PROPOSER HEREBY REQUESTS:

☐ FULL MBE WAIVER ☐ FULL WBE WAIVER

☐ REDUCTION (PARTIAL MBE and/or WBE PARTICIPATION)

____ % of Reduction for MBE Participation
____ % of Reduction for WBE Participation

B. REASON FOR FULL/REDUCTION WAIVER REQUEST

Bidder/Proposer shall check each item applicable to its reason for a waiver request. Additionally, supporting documentation shall be submitted with this request. If such supporting documentation cannot be submitted with bid/proposal/quotation, such documentation shall be submitted directly to the Office of Contract Compliance no later than three (3) days from the date of submission date.

☐ (1) Lack of sufficient qualified MBEs and/or WBEs capable of providing the goods or services required by the contract. **(Please explain)**

☐ (2) The specifications and necessary requirements for performing the contract make it impossible or economically infeasible to divide the contract to enable the contractor to utilize MBEs and/or WBEs in accordance with the applicable participation. **(Please explain)**

☐ (3) Price(s) quoted by potential MBEs and/or WBEs are above competitive levels and increase cost of doing business and would make acceptance of such MBE and/or WBE bid economically impracticable, taking into consideration the percentage of total contract price represented by such MBE and/or WBE bid. **(Please explain)**

☐ (4) There are other relevant factors making it impossible or economically infeasible to utilize MBE and/or WBE firms. **(Please explain)**

C. GOOD FAITH EFFORTS TO OBTAIN MBE/WBE PARTICIPATION

☐ (1) Made timely written solicitation to identified MBEs and WBEs for utilization of goods and/or services; and provided MBEs and WBEs with a timely opportunity to review and obtain relevant specifications, terms and conditions of the proposal to enable MBEs and WBEs to prepare an informed response to solicitation. **(Please attach)**

☐ (2) Followed up initial solicitation of MBEs and WBEs to determine if firms are interested in doing business. **(Please attach)**

☐ (3) Advertised in a timely manner in one or more daily newspapers and/or trade publication for MBEs and WBEs for supply of goods and services. **(Please attach)**

☐ (4) Used the services and assistance of the Office of Contract Compliance staff. **(Please explain)**

☐ (5) Engaged MBEs & WBEs for indirect participation. **(Please explain)**

D. OTHER RELEVANT INFORMATION

Attach any other documentation relative to Good Faith Efforts in complying with MBE/WBE participation.

DEPARTMENT OF PROCUREMENT SERVICES

CITY OF CHICAGO

~~April 24, 2013~~

Silverio Osorio
B and B Maintenance Inc
537 Capital Drive,
Lake Zurich, IL. 60047

Email: sosorio@bandbmaint.com

Dear Silverio Osorio,

This letter is to inform you that the City of Chicago has extended your status as a Minority Business Enterprise (MBE) until August 1, 2013. We are providing this Extension to allow enough time to provide any additional documentation that your application may be missing and for our office to complete our review of all of the submitted documents.

This extension does not guarantee eligibility in the program but will act as a courtesy extension until we receive all of the required documentation and complete a review of that documentation.

Please present this letter and copy of your last certification letter as evidence of your certification to be included with bid document submittals as needed.

If you have any questions, please feel free to contact our office at (312) 744-1929.

Sincerely,

George Coleman Jr
Deputy Procurement Officer

GC: at

THE BOARD OF COMMISSIONERS
TONI PRECKWINKLE
PRESIDENT

EARLEAN COLLINS	1st Dist	PETER N. SILVESTRI	9th Dist
ROBERT STEELE	2nd Dist	BRIDGET GAINER	10th Dist.
JERRY BUTLER	3rd Dist	JOHN P. DALEY	11th Dist
WILLIAM M. BEAVERS	4th Dist	JOHN A. FRITCHEY	12th Dist
DEBORAH SIMS	5th Dist	LARRY SUFFREDIN	13th Dist.
JOAN PATRICIA MURPHY	6th Dist.	GREGG GOSLIN	14th Dist
JESUS G. GARCIA	7th Dist.	TIMOTHY O. SCHNEIDER	15th Dist.
EDWIN REYES	8th Dist	JEFFREY R. TOBOLSKI	16th Dist
		ELIZABETH ANN DOODY GORMAN	17th Dist

COOK COUNTY
OFFICE OF CONTRACT COMPLIANCE

LAVERNE HALL
DIRECTOR

118 North Clark Street, Room 1020
Chicago, Illinois 60602-1304
TEL (312) 603-5502
FAX (312) 603-1547

March 1, 2011

Mr. Silverio Osario, President
B & B Maintenance, Inc.
537 Capital Drive
Lake Zurich, Illinois 60047

Annual Certification Expires: March 1, 2012

Dear Mr. Osario:

Congratulations on your continued eligibility for Certification as a MBE(9) by Cook County Government. This MBE(9) Certification is valid until March 1, 20 2013; however your firm must be revalidated annually. Your firm's next annual validation is required by March 1, 2013.

As a condition of continued Certification during this three (3) year period, you must file a "No Change Affidavit" within sixty (60) business days prior to the date of annual expiration. Failure to file this Affidavit shall result in the termination of your Certification. You must notify Cook County Government's Office of Contract Compliance of any change in ownership or control or any other matters or facts affecting your firm's eligibility for Certification.

Cook County Government may commence action to remove your firm as a MBE(9) vendor if you fail to notify us of any changes of facts affecting your firm's Certification, or if your firm otherwise fails to cooperate with the County in any inquiry or investigation. Removal of your status may also be commenced if your firm is found to be involved in bidding or contractual irregularities.

Your firm's name will be listed in Cook County's Directory of Minority Business Enterprises and Women Business Enterprises in the area(s) of specialty:

Janitorial Services

Your firm's participation on Cook County contracts will be credited toward MBE(9) goals in your area(s) of specialty. While your participation on Cook County contracts is not limited to your specialty, credit toward MBE(9) goals will be given only for work done in the specialty category.

Thank you for your continued interest in Cook County Government's Minority and Women Business Enterprise Programs.

Sincerely,

LaVerne Hall
Director
LH/gb

Printed on Recycled Paper

PETITION FOR WAIVER OF MBE/WBE PARTICIPATION (SECTION 3)

A. **BIDDER/PROPOSER HEREBY REQUESTS:**

☐ **FULL MBE WAIVER** ☐ **FULL WBE WAIVER**

☐ **REDUCTION (PARTIAL MBE and/or WBE PARTICIPATION)**

____ % of Reduction for MBE Participation
____ % of Reduction for WBE Participation

B. **REASON FOR FULL/REDUCTION WAIVER REQUEST**

Bidder/Proposer shall check each item applicable to its reason for a waiver request. Additionally, supporting documentation shall be submitted with this request. If such supporting documentation cannot be submitted with bid/proposal/quotation, such documentation shall be submitted directly to the Office of Contract Compliance no later than three (3) days from the date of submission date.

☐ (1) Lack of sufficient qualified MBEs and/or WBEs capable of providing the goods or services required by the contract. **(Please explain)**

☐ (2) The specifications and necessary requirements for performing the contract make it impossible or economically infeasible to divide the contract to enable the contractor to utilize MBEs and/or WBEs in accordance with the applicable participation. **(Please explain)**

☐ (3) Price(s) quoted by potential MBEs and/or WBEs are above competitive levels and increase cost of doing business and would make acceptance of such MBE and/or WBE bid economically impracticable, taking into consideration the percentage of total contract price represented by such MBE and/or WBE bid. **(Please explain)**

☐ (4) There are other relevant factors making it impossible or economically infeasible to utilize MBE and/or WBE firms. **(Please explain)**

C. **GOOD FAITH EFFORTS TO OBTAIN MBE/WBE PARTICIPATION**

☐ (1) Made timely written solicitation to identified MBEs and WBEs for utilization of goods and/or services; and provided MBEs and WBEs with a timely opportunity to review and obtain relevant specifications, terms and conditions of the proposal to enable MBEs and WBEs to prepare an informed response to solicitation. **(Please attach)**

☐ (2) Followed up initial solicitation of MBEs and WBEs to determine if firms are interested in doing business. **(Please attach)**

☐ (3) Advertised in a timely manner in one or more daily newspapers and/or trade publication for MBEs and WBEs for supply of goods and services. **(Please attach)**

☐ (4) Used the services and assistance of the Office of Contract Compliance staff. **(Please explain)**

☐ (5) Engaged MBEs & WBEs for indirect participation. **(Please explain)**

D. **OTHER RELEVANT INFORMATION**

Attach any other documentation relative to Good Faith Efforts in complying with MBE/WBE participation.

CERTIFICATIONS (SECTION 4)

THE FOLLOWING CERTIFICATIONS ARE MADE PURSUANT TO STATE LAW AND THE CODE. THE UNDERSIGNED IS CAUTIONED TO CAREFULLY READ THESE CERTIFICATIONS PRIOR TO SIGNING THE SIGNATURE PAGE. SIGNING THE SIGNATURE PAGE SHALL CONSTITUTE A WARRANTY BY THE UNDERSIGNED THAT ALL THE STATEMENTS, CERTIFICATIONS AND INFORMATION SET FORTH WITHIN THESE CERTIFICATIONS ARE TRUE, COMPLETE AND CORRECT AS OF THE DATE THE SIGNATURE PAGE IS SIGNED. THE UNDERSIGNED IS NOTIFIED THAT IF THE COUNTY LEARNS THAT ANY OF THE FOLLOWING CERTIFICATIONS WERE FALSELY MADE, THAT ANY CONTRACT ENTERED INTO WITH THE UNDERSIGNED SHALL BE SUBJECT TO TERMINATION.

A. PERSONS AND ENTITIES SUBJECT TO DISQUALIFICATION

No person or business entity shall be awarded a contract or sub-contract, for a period of five (5) years from the date of conviction or entry of a plea or admission of guilt, civil or criminal, if that person or business entity:

1) Has been convicted of an act committed, within the State of Illinois, of bribery or attempting to bribe an officer or employee of a unit of state, federal or local government or school district in the State of Illinois in that officer's or employee's official capacity;

2) Has been convicted by federal, state or local government of an act of bid-rigging or attempting to rig bids as defined in the Sherman Anti-Trust Act and Clayton Act. Act. 15 U.S.C. Section 1 *et seq.;*

3) Has been convicted of bid-rigging or attempting to rig bids under the laws of federal, state or local government;

4) Has been convicted of an act committed, within the State, of price-fixing or attempting to fix prices as defined by the Sherman Anti-Trust Act and the Clayton Act. 15 U.S.C. Section 1, *et seq.;*

5) Has been convicted of price-fixing or attempting to fix prices under the laws the State;

6) Has been convicted of defrauding or attempting to defraud any unit of state or local government or school district within the State of Illinois;

7) Has made an admission of guilt of such conduct as set forth in subsections (1) through (6) above which admission is a matter of record, whether or not such person or business entity was subject to prosecution for the offense or offenses admitted to; or

8) Has entered a plea of *nolo contendere* to charge of bribery, price-fixing, bid-rigging, or fraud, as set forth in sub-paragraphs (1) through (6) above.

In the case of bribery or attempting to bribe, a business entity may not be awarded a contract if an official, agent or employee of such business entity committed the Prohibited Act on behalf of the business entity and pursuant to the direction or authorization of an officer, director or other responsible official of the business entity, and such Prohibited Act occurred within three years prior to the award of the contract. In addition, a business entity shall be disqualified if an owner, partner or shareholder controlling, directly or indirectly, 20 % or more of the business entity, or an officer of the business entity has performed any Prohibited Act within five years prior to the award of the Contract.

THE UNDERSIGNED HEREBY CERTIFIES THAT: The Undersigned has read the provisions of Section A, Persons and Entities Subject to Disqualification, that the Undersigned has not committed any Prohibited Act set forth in Section A, and that award of the Contract to the Undersigned would not violate the provisions of such Section or of the Code.

B. BID-RIGGING OR BID ROTATING

THE UNDERSIGNED HEREBY CERTIFIES THAT: *In accordance with 720 ILCS 5/33 E-11, neither the Undersigned nor any Affiliated Entity is barred from award of this Contract as a result of a conviction for the violation of State laws prohibiting bid-rigging or bid rotating.*

C. DRUG FREE WORKPLACE ACT

THE UNDERSIGNED HEREBY CERTIFIES THAT: The Undersigned will provide a drug free workplace, as required by Public Act 86-1459 (30 ILCS 580/2-11).

D. DELINQUENCY IN PAYMENT OF TAXES

THE UNDERSIGNED HEREBY CERTIFIES THAT*: The Undersigned is not an owner or a party responsible for the payment of any tax or fee administered by Cook County, by a local municipality, or by the Illinois Department of Revenue, which such tax or fee is delinquent, such as bar award of a contract or subcontract pursuant to the Code, Chapter 34, Section 34-129.*

E. HUMAN RIGHTS ORDINANCE

No person who is a party to a contract with Cook County ("County") shall engage in unlawful discrimination or sexual harassment against any individual in the terms or conditions of employment, credit, public accommodations, housing, or provision of County facilities, services or programs (Code Chapter 42, Section 42-30 *et seq*).

F. ILLINOIS HUMAN RIGHTS ACT

THE UNDERSIGNED HEREBY CERTIFIES THAT: *It is in compliance with the the Illinois Human Rights Act (775 ILCS 5/2-105), and agrees to abide by the requirements of the Act as part of its contractual obligations.*

G. MACBRIDE PRINCIPLES, CODE CHAPTER 34, SECTION 34-132

If the primary contractor currently conducts business operations in Northern Ireland, or will conduct business during the projected duration of a County contract, the primary contractor shall make all reasonable and good faith efforts to conduct any such business operations in Northern Ireland in accordance with the MacBride Principles for Northern Ireland as defined in Illinois Public Act 85-1390.

H. LIVING WAGE ORDINANCE PREFERENCE (COOK COUNTY CODE, CHAPTER 34, SECTION 34-127;

The Code requires that a living wage must be paid to individuals employed by a Contractor which has a County Contract and by all subcontractors of such Contractor under a County Contract, throughout the duration of such County Contract. The amount of such living wage is determined from time to time by, and is available from, the Chief Financial Officer of the County.

For purposes of this EDS Section 4, H, "Contract" means any written agreement whereby the County is committed to or does expend funds in connection with the agreement or subcontract thereof. The term "Contract" as used in this EDS, Section 4, I, specifically excludes contracts with the following:

1) Not-For Profit Organizations (defined as a corporation having tax exempt status under Section 501(C)(3) of the United State Internal Revenue Code and recognized under the Illinois State not-for -profit law);

2) Community Development Block Grants;

3) Cook County Works Department;

4) Sheriff's Work Alternative Program; and

5) Department of Correction inmates.

REQUIRED DISCLOSURES (SECTION 5)

1. DISCLOSURE OF LOBBYIST CONTACTS

List all persons or entities that have made lobbying contacts on your behalf with respect to this contract:

Name Address

_____

_____

_____

2. ~~LOCAL BUSINESS PREFERENCE DISCLOSURE; CODE, CHAPTER 34, SECTION 34-151(p);~~

"Local Business" shall mean a person authorized to transact business in this State and having a bona fide establishment for transacting business located within Cook County at which it was actually transacting business on the date when any competitive solicitation for a public contract is first advertised or announced and further which employs the majority of its regular, full time work force within Cook County, including a foreign corporation duly authorized to transact business in this State and which has a bona fide establishment for transacting business located within Cook County at which it was actually transacting business on the date when any competitive solicitation for a public contract is first advertised or announced and further which employs the majority of its regular, full time work force within Cook County.

a) Is Bidder a "Local Business" as defined above?

Yes:_____ No: X

b) If yes, list business addresses within Cook County:

_____

_____

_____

c) Does Bidder employ the majority of its regular full-time workforce within Cook County?

Yes:_____ No: X

3. THE CHILD SUPPORT ENFORCEMENT ORDINANCE (PREFERENCE (CODE, CHAPTER 34, SECTION 34-366)

Every Applicant for a County Privilege shall be in full compliance with any child support order before such Applicant is entitled to receive or renew a County Privilege. When delinquent child support exists, the County shall not issue or renew any County Privilege, and may revoke any County Privilege.

All Applicants are required to review the Cook County Affidavit of Child Support Obligations attached to this EDS (EDS-8) and complete the following, based upon the definitions and other information included in such Affidavit.

4. REAL ESTATE OWNERSHIP DISCLOSURES.

The Undersigned must indicate by checking the appropriate provision below and providing all required information that either:

a) The following is a complete list of all real estate owned by the Undersigned in Cook County:

PERMANENT INDEX NUMBER(S): See Attached Page

(ATTACH SHEET IF NECESSARY TO LIST ADDITIONAL INDEX NUMBERS)

OR:

b) _____The Undersigned owns no real estate in Cook County.

5. EXCEPTIONS TO CERTIFICATIONS OR DISCLOSURES.

If the Undersigned is unable to certify to any of the Certifications or any other statements contained in this EDS and not explained elsewhere in this EDS, the Undersigned must explain below:

If the letters, "NA", the word "None" or "No Response" appears above, or if the space is left blank, it will be conclusively presumed that the Undersigned certified to all Certifications and other statements contained in this EDS.

MOTOROLA, INC.
COOK COUNTY REAL ESTATE TAX PARCELS
1-Nov-07

VOLUME	PERMANENT REAL ESTATE INDEX NUMBER	TOWN NO.
126	10-29-303-023	24011
150	02-34-300-060	29046
150	02-34-400-009	29046
150	02-34-400-015	29046
187	07-01-100-003	35011
187	07-02-201-008	35011
187	07-11-201-016	35011
187	07-12-100-008	35011
187	07-12-100-010	35011
231	08-07-100-005	36016
231	08-07-100-006	36016
231	08-07-100-007	36016
231	08-07-100-018	36016

COOK COUNTY AFFIDAVIT OF CHILD SUPPORT OBLIGATIONS

Effective July 1, 1998, every applicant for a County Privilege shall be in full compliance with any Child Support Order before such applicant is entitled to receive a County Privilege. When Delinquent Child Support Exists, the County shall not issue or renew any County Privilege, and may revoke any County Privilege.

"*Applicant*" means any person or business entity, including all Substantial Owners, seeking issuance of a County Privilege or renewal of an existing County Privilege from the County. This term shall not include any political subdivision of the federal or state government, including units of local government, and not-for-profit organizations.

"*County Privilege*" means any business license, including but not limited to liquor dealers' licenses, packaged goods licenses, tavern licenses, restaurant licenses, and gun licenses; real property license or lease; permit, including but not limited to building permits, zoning permits or approvals; environmental certificate; County HOME Loan, and contracts exceeding the value of $10,000.00.

"*Substantial Owner*" means any person or persons who own or hold a twenty-five\ percent (25%) or more percentage of interest in any business entity seeking a County Privilege, including those shareholders, general or limited partners, beneficiaries and principals; except where a business entity is an individual or sole proprietorship, Substantial Owner means that individual or sole proprietor.

All Applicants/Substantial Owners are required to complete this affidavit and comply with the Child Support Enforcement Ordinance before any privilege is granted. Signature of this form constitutes a certification the information provided below is correct and complete, and that the individual(s) signing this form has/have personal knowledge of such information.

Privilege Information:

County Privilege: _____

County Department: _____

Applicant Information:

Last name: _____ First Name: _____ MI: _____

SS# (Last Four Digits): ____ ____ ____ ____ Date of Birth: _____

Street Address: _____

City: _____ State: _____ Zip: _____

Home Phone: (___) _____ - _____ Drivers License No: _____

Child Support Obligation Information:

The Undersigned applicant, being duly sworn on oath or affirmation hereby states that to the best of my knowledge (place an "X" next to "A", "B", "C", or "D").

_____ A. The Applicant has no judicially or administratively ordered child support obligations.

_____ B. The Applicant has an outstanding judicially or administratively ordered obligation, but is paying in accordance with the terms of the order.

_____ C. The Applicant is delinquent in paying judicially or administratively ordered child support obligations

__X__ D. The Applicant is not a substantial owner as defined above.

The Undersigned applicant understands that failure to disclose any judicially or administratively ordered child support debt owed will be grounds for revoking the privilege.

Signature: _____ Date: May 31, 2013

John P. Molloy

Subscribed and sworn to before me this 31st day of May, 2013

X _____ _____

Notary Public Signature Notary Seal

OFFICIAL SEAL
ELIZABETH J NOWAK
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 12-12-2016

Note: The above information is subject to verification prior to the award of the contract.

COOK COUNTY DISCLOSURE OF OWNERSHIP INTEREST STATEMENT

The Cook County Code of Ordinances (§2-610 *et seq.*) requires that any Applicant for any County Action must disclose information concerning ownership interests in the Applicant. This Disclosure of Ownership Interest Statement must be completed with all information current as of the date this Statement is signed. Furthermore, this Statement must be kept current, by filing an amended Statement, until such time as the County Board or County Agency shall take action on the application. The information contained in this Statement will be maintained in a database and made available for public viewing.

If you are asked to list names, but there are no applicable names to list, you must state NONE. An incomplete Statement will be returned and any action regarding this contract will be delayed. A failure to fully comply with the ordinance may result in the action taken by the County Board or County Agency being voided.

"*Applicant*" means any Entity or person making an application to the County for any County Action.

"County Action" means any action by a County Agency, a County Department, or the County Board regarding an ordinance or ordinance amendment, a County Board approval, or other County agency approval, with respect to contracts, leases, or sale or purchase of real estate.

"Entity" or *"Legal Entity"* means a sole proprietorship, corporation, partnership, association, business trust, estate, two or more persons having a joint or common interest, trustee of a land trust, other commercial or legal entity or any beneficiary or beneficiaries thereof.

This Disclosure of Ownership Interest Statement must be submitted by :

1. An Applicant for County Action and

2. An individual or Legal Entity that holds stock or a beneficial interest in the Applicant and is listed on the Applicant's Statement (a "Holder") must file a Statement and complete #1 only under **Ownership Interest Declaration**.

Please print or type responses clearly and legibly. Add additional pages if needed, being careful to identify each portion of the form to which each additional page refers.

This Statement is being made by the [X] Applicant or [ ] Stock/Beneficial Interest Holder

This Statement is an: [X] Original Statement or [ ] Amended Statement

Identifying Information:

Name Motorola Solutions, Inc D/B/A:_____ EIN NO.:_____

Street Address: 1303 E. Algonquin Road

City: Schaumburg State: IL Zip Code: 60196

Phone No.: 847-489-9379

Form of Legal Entity:

[ ] Sole Proprietor [ ] Partnership [X] Corporation [ ] Trustee of Land Trust

[ ] Business Trust [ ] Estate [ ] Association [ ] Joint Venture

[ ] Other (describe) _____

Ownership Interest Declaration:

1. List the name(s), address, and percent ownership of each individual and each Entity having a legal or beneficial interest (including ownership) of more than five percent (5%) in the Applicant/Holder.

Name	Address	Percentage Interest in Applicant/Holder

2. If the interest of any individual or any Entity listed in (1) above is held as an agent or agents, or a nominee or nominees, list the name and address of the principal on whose behalf the interest is held.

Name of Agent/Nominee	Name of Principal	Principal's Address

3. Is the Applicant constructively controlled by another person or Legal Entity? [ ] Yes [ ] No

If yes, state the name, address and percentage of beneficial interest of such person or legal entity, and the relationship under which such control is being or may be exercised.

Name	Address	Percentage of Beneficial Interest	Relationship

Declaration (check the applicable box):

[X] I state under oath that the Applicant has withheld no disclosure as to ownership interest in the Applicant nor eserved any information, data or plan as to the intended use or purpose for which the Applicant seeks County Board or other County Agency action.

[ ] I state under oath that the Holder has withheld no disclosure as to ownership interest nor reserved any information required to be disclosed.

John P. Molloy
Name of Authorized Applicant/Holder Representative (please print or type)

Corporate Vice President
Title

Signature

May 31, 2013
Date

Jack.Molloy@motorolasolutions.com
E-mail address

847-576-5000
Phone Number

Subscribed to and sworn before me
this 31st day of May, 2013

My commission expires: 12/12/2016

X Elizabeth A. Nowak
Notary Public Signature

OFFICIAL SEAL
ELIZABETH J NOWAK
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 12-12-2016

COOK COUNTY BOARD OF ETHICS
69 W. WASHINGTON STREET, SUITE 3040
CHICAGO, ILLINOIS 60602
312/603-4304
312/603-9988 FAX 312/603-1011 TT/TDD

FAMILIAL RELATIONSHIP DISCLOSURE PROVISION:

Section 2-582 of the Cook County Ethics Ordinance requires any person or persons doing business with Cook County, upon execution of a contract with Cook County, to disclose to the Cook County Board of Ethics the existence of familial relationships they may have with all persons holding elective office in the State of Illinois, the County of Cook, or in any municipality within the County of Cook.

The disclosure required by this section shall be filed by January 1 of each calendar year or within thirty (30) days of the execution of any contract or lease. Any person filing a late disclosure statement after January 31 shall be assessed a late filing fee of $100.00 per day that the disclosure is late. Any person found guilty of violating any provision of this section or knowingly filing a false, misleading, or incomplete disclosure to the Cook County Board of Ethics shall be prohibited, for a period of three (3) years, from engaging, directly or indirectly, in any business with Cook County. *Note*: Please see Chapter 2 Administration, Artiele VII Ethics, Section 2-582 of the Cook County Code to view the full provisions of this section.

If you have questions concerning this disclosure requirement, please call the Cook County Board of Ethics at (312) 603-4304. *Note*: A eurrent list of contractors doing business with Cook County is available via the Cook County Board of Ethies' website at: **http://www.cookcountygov.com/taxonomy/cthics/Listings/cc_ethics_VendorList_.pdf**

DEFINITIONS:

"*Calendar year*" means January 1 to December 31 of cach year.

"*Doing business*" for this Ordinancc provision means any one or any combination of leases, contracts, or purchascs to or with Cook County or any Cook County agency in excess of $25,000 in any calendar year.

"*Familial relationship*" means a person who is related to an official or employee as spouse or any of the following, whether by blood, marriage or adoption:

- Parent
- Child
- Brother
- Sister
- Aunt
- Uncle
- Niece
- Nephew
- Grandparent
- Grandchild
- Father-in-law
- Mother-in-law
- Son-in-law
- Daughter-in-law
- Brother-in-law
- Sister-in-law
- Stepfather
- Stepmother
- Stepson
- Stepdaughter
- Stepbrother
- Stepsister
- Half-brother
- Half-sister

"*Person*" means any individual, entity, eorporation, partnership, firm, association, union, trust, estate, as well as any parent or subsidiary of any of the foregoing, and whether or not operated for profit.

SWORN FAMILIAL RELATIONSHIP DISCLOSURE FORM

Pursuant to Seetion 2-582 of the Cook County Ethics Ordinanee, any *person* doing business** with Cook County must diselose, to the Cook County Board of Ethics, the existenee of *familial relationships** to any person holding eleetive office in the State of Illinois, Cook County, or in any municipality within Cook County. Please print your responses.

Name of Owner/Employee: Corporation Title: N/A

Business Entity Name: Motorola Solutions, Inc. Phone: 847-489-9379

Business Entity Address: 1303 E.Algonquin Road, Schaumburg, IL 60196

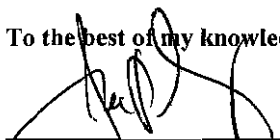
_____ The following familial relationship exists between the owner or any employee of the business entity contracted to do business with Cook County ***and*** any person holding eleetive office in the State of Illinois, Cook County, or in any municipality within Cook County.

	Owner/Employee Name:	Related to:	Relationship:
1.			
2.			
3.			
4.			
5.			

If more space is needed, attach an additional sheet following the above format.

X There is ***no*** familial relationship that exists between the owner or any employee of the business entity contracted to do business with Cook County and any person holding eleetive office in the State of Illinois, Cook County, or in any municipality within Cook County.

To the best of my knowledge and belief, the information provided above is true and complete.



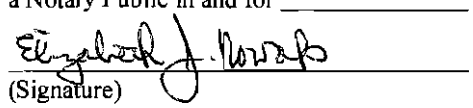
Owner/Employee's Signature

May 31, 2013
Date

John P. Molloy

Subscribe and sworn before me this 31st Day of May, 2013

a Notary Public in and for Cook County



(Signature)

*Motorola Solutions, Inc. certification is made to the best of its knowledge and on information available on the date of this proposal. Motorola Solutions, Inc. reserves the right to amend this certification upon discovery of contrary facts.

NOTARY PUBLIC
SEAL

My Commission expires 12/12/2016

Completed forms must be filed within **30** days of the execution of any contract or lease with Cook County and should be mailed to:

Cook County Board of Ethics
69 West Washington Street,
Suite 3040
Chicago, Illinois 60602

OFFICIAL SEAL
ELIZABETH J NOWAK
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 12-12-2016

EDS-12

5.10.12

SIGNATURE BY A SOLE PROPRIETOR
(SECTION 6)

The Undersigned hereby certifies and warrants: that all of the statements, certifications and representations set forth in this EDS are true, complete and correct; that the Undersigned is in full compliance and will continue to be in compliance throughout the term of the Contract or County Privilege issued to the Undersigned with all the policies and requirements set forth in this EDS; and that all facts and information provided by the Undersigned in this EDS are true, complete and correct. The Undersigned agrees to inform the Chief Procurement Officer in writing if any of such statements, certifications, representations, facts or information becomes or is found to be untrue, incomplete or incorrect during the term of the Contract or County Privilege.

BUSINESS NAME:_____

BUSINESS ADDRESS:_____

_____

BUSINESS TELEPHONE:_____ FAX NUMBER:_____

FEIN/SSN:_____

COOK COUNTY BUSINESS REGISTRATION NUMBER:_____

SOLE PROPRIETOR'S SIGNATURE: _____

PRINT NAME: _____

DATE: _____

Subscribed to and sworn before me this

_____ day of _____, 20___.

My commission expires:

X_____ _____

Notary Public Signature Notary Seal

SIGNATURE BY A SOLE PROPRIETOR
(SECTION 6)

The Undersigned hereby certifies and warrants: that all of the statements, certifications and representations set forth in this EDS are true, complete and correct; that the Undersigned is in full compliance and will continue to be in compliance throughout the term of the Contract or County Privilege issued to the Undersigned with all the policies and requirements set forth in this EDS; and that all facts and information provided by the Undersigned in this EDS are true, complete and correct. The Undersigned agrees to inform the Chief Procurement Officer in writing if any of such statements, certifications, representations, facts or information becomes or is found to be untrue, incomplete or incorrect during the term of the Contract or County Privilege.

BUSINESS NAME:_____

BUSINESS ADDRESS:_____

_____

BUSINESS TELEPHONE:_____ FAX NUMBER:_____

FEIN/SSN:_____

COOK COUNTY BUSINESS REGISTRATION NUMBER:_____

SOLE PROPRIETOR'S SIGNATURE: _____

PRINT NAME: _____

DATE: _____

Subscribed to and sworn before me this

_____ day of _____, 20___.

My commission expires:

X_____ _____

Notary Public Signature Notary Seal

SIGNATURE BY A SOLE PROPRIETOR
(SECTION 6)

The Undersigned hereby certifies and warrants: that all of the statements, certifications and representations set forth in this EDS are true, complete and correct; that the Undersigned is in full compliance and will continue to be in compliance throughout the term of the Contract or County Privilege issued to the Undersigned with all the policies and requirements set forth in this EDS; and that all facts and information provided by the Undersigned in this EDS are true, complete and correct. The Undersigned agrees to inform the Chief Procurement Officer in writing if any of such statements, certifications, representations, facts or information becomes or is found to be untrue, incomplete or incorrect during the term of the Contract or County Privilege.

BUSINESS NAME:_____

BUSINESS ADDRESS:_____

_____

BUSINESS TELEPHONE:_____ FAX NUMBER:_____

FEIN/SSN:_____

COOK COUNTY BUSINESS REGISTRATION NUMBER:_____

SOLE PROPRIETOR'S SIGNATURE: _____

PRINT NAME: _____

DATE: _____

Subscribed to and sworn before me this

_____ day of _____, 20___.

My commission expires:

X_____ _____

Notary Public Signature Notary Seal

SIGNATURE BY A PARTNERSHIP (AND/OR A JOINT VENTURE)
(SECTION 7)

The Undersigned hereby certifies and warrants: that all of the statements, certifications, and representations set forth in this EDS are true, complete and correct; that the Undersigned is in full compliance and will continue to be in compliance throughout the term of the Contract or County Privilege issued to the Undersigned with all the policies and requirements set forth in this EDS; and that all of the facts and information provided by the Undersigned in this EDS are true, complete and correct. The Undersigned agrees to inform the Chief Procurement Officer in writing if any of such statements, certifications, representations, facts or information becomes or is found to be untrue, incomplete or incorrect during the term of the Contract or County Privilege. .

BUSINESS NAME:_____

BUSINESS ADDRESS:_____

_____

BUSINESS TELEPHONE:_____ FAX NUMBER:_____

CONTACT PERSON:_____ FEIN/SSN:_____

*COOK COUNTY BUSINESS REGISTRATION NUMBER:_____

SIGNATURE OF PARTNER AUTHORIZED TO EXECUTE CONTRACTS ON BEHALF OF PARTNERSHIP:

*BY: _____

Date:_____

Subscribed to and sworn before me this

_____ day of _____, 20___.

My commission expires:

X_____ _____

Notary Public Signature Notary Seal

* **Attach hereto a partnership resolution or other document authorizing the individual signing this Signature Page to so sign on behalf of the Partnership.**

SIGNATURE BY A PARTNERSHIP (AND/OR A JOINT VENTURE)
(SECTION 7)

The Undersigned hereby certifies and warrants: that all of the statements, certifications, and representations set forth in this EDS are true, complete and correct; that the Undersigned is in full compliance and will continue to be in compliance throughout the term of the Contract or County Privilege issued to the Undersigned with all the policies and requirements set forth in this EDS; and that all of the facts and information provided by the Undersigned in this EDS are true, complete and correct. The Undersigned agrees to inform the Chief Procurement Officer in writing if any of such statements, certifications, representations, facts or information becomes or is found to be untrue, incomplete or incorrect during the term of the Contract or County Privilege. .

BUSINESS NAME:_____

BUSINESS ADDRESS:_____

_____

BUSINESS TELEPHONE:_____ FAX NUMBER:_____

CONTACT PERSON:_____ FEIN/SSN:_____

*COOK COUNTY BUSINESS REGISTRATION NUMBER:_____

SIGNATURE OF PARTNER AUTHORIZED TO EXECUTE CONTRACTS ON BEHALF OF PARTNERSHIP:

*BY: _____

Date:_____

Subscribed to and sworn before me this

_____ day of _____, 20___.

My commission expires:

X_____ _____

Notary Public Signature Notary Seal

* **Attach hereto a partnership resolution or other document authorizing the individual signing this Signature Page to so sign on behalf of the Partnership.**

SIGNATURE BY A PARTNERSHIP (AND/OR A JOINT VENTURE)
(SECTION 7)

The Undersigned hereby certifies and warrants: that all of the statements, certifications, and representations set forth in this EDS are true, complete and correct; that the Undersigned is in full compliance and will continue to be in compliance throughout the term of the Contract or County Privilege issued to the Undersigned with all the policies and requirements set forth in this EDS; and that all of the facts and information provided by the Undersigned in this EDS are true, complete and correct. The Undersigned agrees to inform the Chief Procurement Officer in writing if any of such statements, certifications, representations, facts or information becomes or is found to be untrue, incomplete or incorrect during the term of the Contract or County Privilege. .

BUSINESS NAME:_____

BUSINESS ADDRESS:_____

_____

BUSINESS TELEPHONE:_____ FAX NUMBER:_____

CONTACT PERSON:_____ FEIN/SSN:_____

*COOK COUNTY BUSINESS REGISTRATION NUMBER:_____

SIGNATURE OF PARTNER AUTHORIZED TO EXECUTE CONTRACTS ON BEHALF OF PARTNERSHIP:

*BY: _____

Date:_____

Subscribed to and sworn before me this

_____ day of _____, 20___.

My commission expires:

X_____ _____

Notary Public Signature Notary Seal

* **Attach hereto a partnership resolution or other document authorizing the individual signing this Signature Page to so sign on behalf of the Partnership.**

SIGNATURE BY A LIMITED LIABILITY CORPORATION
(SECTION 8)

The Undersigned hereby certifies and warrants: that all of the statements, certifications, and representations set forth in this EDS are true, complete and correct; that the Undersigned is in full compliance and will continue to be in compliance throughout the term of the Contract or County Privilege issued to the Undersigned with all the policies and requirements set forth in this EDS; and that all of the facts and information provided by the Undersigned in this EDS are true, complete and correct. The Undersigned agrees to inform the Procurement Director in writing if any of such statements, certifications, representations, facts or information becomes or is found to be untrue, incomplete or incorrect during the term of the Contract or County Privilege.

BUSINESS NAME:_____

BUSINESS ADDRESS:_____

BUSINESS TELEPHONE:_____ FAX NUMBER:_____

CONTACT PERSON:_____

FEIN:_____* CORPORATE FILE NUMBER:_____

MANAGING MEMBER:_____ MANAGING MEMBER:_____

**SIGNATURE OF MANAGER: _____

ATTEST: _____

Subscribed and sworn to before me this

_____ day of _____, 20_____.

X_____ _____

Notary Public Signature Notary Seal

* **If the LLC is not registered in the State of Illinois, a copy of a current Certificate of Good Standing from the state of incorporation must be submitted with this Signature Page.**

** **Attach either a certified copy of the by-laws, articles, resolution or other authorization demonstrating such persons to sign the Signature Page on behalf of the LLC.**

SIGNATURE BY A LIMITED LIABILITY CORPORATION
(SECTION 8)

The Undersigned hereby certifies and warrants: that all of the statements, certifications, and representations set forth in this EDS are true, complete and correct; that the Undersigned is in full compliance and will continue to be in compliance throughout the term of the Contract or County Privilege issued to the Undersigned with all the policies and requirements set forth in this EDS; and that all of the facts and information provided by the Undersigned in this EDS are true, complete and correct. The Undersigned agrees to inform the Procurement Director in writing if any of such statements, certifications, representations, facts or information becomes or is found to be untrue, incomplete or incorrect during the term of the Contract or County Privilege.

.

BUSINESS NAME:_____

BUSINESS ADDRESS:_____

BUSINESS TELEPHONE:_____ FAX NUMBER:_____

CONTACT PERSON:_____

FEIN:_____* CORPORATE FILE NUMBER:_____

MANAGING MEMBER:_____ MANAGING MEMBER:_____

**SIGNATURE OF MANAGER: _____

ATTEST: _____

Subscribed and sworn to before me this

_____ day of _____, 20_____.

X_____ _____

Notary Public Signature Notary Seal

* **If the LLC is not registered in the State of Illinois, a copy of a current Certificate of Good Standing from the state of incorporation must be submitted with this Signature Page.**

** **Attach either a certified copy of the by-laws, articles, resolution or other authorization demonstrating such persons to sign the Signature Page on behalf of the LLC.**

CERTIFICATE OF ASSISTANT SECRETARY
MOTOROLA SOLUTIONS, INC.

The undersigned certifies that he or she is a duly appointed Assistant Secretary of Motorola Solutions, Inc. (the "Company"), a corporation duly organized and existing under the laws of the State of Delaware, and that, as such, he or she is authorized to execute this Certificate on behalf of the Company, and further certifies that:

1. At a meeting of the Board of Directors of the Company held on May 7, 2013 at which a quorum was present and acting throughout, the following resolutions were duly adopted, effective May 7, 2013, have not been amended, and are in full force and effect on the date hereof:

RESOLVED, that all Appointed Vice Presidents be, and each one of them is, authorized to enter into and execute in the name of and on behalf of the Company all agreements, contracts, bids, proposals, deeds, assignments, powers of attorney, performance guarantees, performance guarantee undertakings, instruments, documents, claims, including claims against the United States, and certifications of such claims, in the ordinary course of business of the Company and related to his or her work as a Vice President of one of the Company's businesses, groups or corporate departments, all of which are collectively referred to as "Documents" provided that this authority does not extend to:

(1) documents related to: (i) acquisitions, divestures, joint ventures and equity investments, (ii) supply chain procurement arrangements, (Appointed Vice Presidents in the Procurement Organization have authority for supply chain procurement arrangements in a specific Board resolution), (iii) outsourcing arrangements, (iv) customer financing extending more than 364 days, (v) capital expenditures, (vi) lease commitments, (vii) agreements and compensatory arrangements applicable to Motorola Solutions Appointed Vice Presidents and above, (viii) financial guarantees, financial surety agreements and financial gnarantee undertakings, (ix) opening bank accounts, (x) establishing borrowing relationships on behalf of the Company, and (xi) voting or otherwise dealing with securities owned by the Company; and

(2) amounts in excess of $10 million.

The officers named above are authorized to delegate this authority in writing to others.

2. The following person is a duly qualified and acting officer of the Company and has been duly elected to the office set forth opposite his or her name:

Name	Title
Jack Molloy	Appointed Vice President

IN WITNESS WHEREOF, I have executed this Certificate as of this 3rd day of June, 2013.

C. Christopher Russell
Assistant Secretary

Motorola Solutions, Inc. 1303 E. Algonquin Road, Schaumburg, IL 60196

Senior Executive Team

Greg Brown	Chairman and Chief Executive Officer
Michele Aguilar Carlin	Senior Vice President Human Resources
Eduardo Conrado	Senior Vice President Chief Marketing Officer
Edward J. Fitzpatrick	Executive Vice President Chief Financial Officer
Mark Moon	Executive Vice President Sales and Field Operations
Lewis Steverson	Senior Vice President, General Counsel and Secretary to the Board

Board of Directors

David W. Dorman
Gregory Q. Brown
John A. White
Judy C. Lewent
Kenneth C. Dahlberg
Michael V. Hayden
Samuel C. Scott, III
William J. Bratton
Bradley E. Singer

File Number 5023-285-9

STATE OF ILLINOIS

OFFICE OF THE SECRETARY OF STATE

To all to whom these Presents Shall Come, Greeting:

I, Jesse White, Secretary of State of the State of Illinois, do hereby certify that

MOTOROLA SOLUTIONS, INC., INCORPORATED IN DELAWARE AND LICENSED TO TRANSACT BUSINESS IN THIS STATE ON MAY 04, 1973, APPEARS TO HAVE COMPLIED WITH ALL THE PROVISIONS OF THE BUSINESS CORPORATION ACT OF THIS STATE RELATING TO THE PAYMENT OF FRANCHISE TAXES, AND AS OF THIS DATE, IS A FOREIGN CORPORATION IN GOOD STANDING AND AUTHORIZED TO TRANSACT BUSINESS IN THE STATE OF ILLINOIS.

In Testimony Whereof, *I hereto set my hand and cause to be affixed the Great Seal of the State of Illinois, this* 26TH *day of* OCTOBER *A.D.* 2011 .

Jesse White

SECRETARY OF STATE

Authentication #: 1129902188

Authenticate at: http://www.cyberdrivelllinois.com

COOK COUNTY SIGNATURE PAGE
(SECTION 10)

ON BEHALF OF THE COUNTY OF COOK, A BODY POLITIC AND CORPORATE OF THE STATE OF ILLINOIS, THIS CONTRACT IS HEREBY EXECUTED BY:

Not Required

PRESIDENT, COOK COUNTY BOARD OF COMMISSIONERS

COOK COUNTY CHIEF PROCUREMENT OFFICER

DATED AT CHICAGO, ILLINOIS THIS 24 DAY OF June ,20 13.

IN THE CASE OF A BID PROPOSAL, THE COUNTY HEREBY ACCEPTS:

THE FOREGOING BID/PROPOSAL AS IDENTIFIED IN THE CONTRACT DOCUMENTS FOR CONTRACT NUMBER

1350-12734

OR

ITEM(S), SECTION(S), PART(S):

TOTAL AMOUNT OF CONTRACT: $ 5,000,000.00
(DOLLARS AND CENTS)

FUND CHARGEABLE: 769100-560441.200 & 769164-560441.200

APPROVED BY THE BOARD OF
COOK COUNTY COMMISSIONERS
JUN 19 2013
COM

APPROVED AS TO FORM:

ASSISTANT STATE'S ATTORNEY
(Required on contracts over $1,000,000.00)

5.10.12
Comptroller's