



# APX™ 8000 ALL-BAND P25 PORTABLE RADIO

## UNLIMITED MOBILITY. UNCOMPROMISING PERFORMANCE.

Take command with a 4-in-1 radio that offers limitless interoperability, the clearest, loudest audio and seamless Wi-Fi® connectivity. The compact, rugged and secure APX 8000 redefines mission critical communications.

### ALL BANDS, NO BOUNDARIES

With four RF bands and multi-mode system access, the APX 8000 knows no limits when it comes to interoperability. Communicate across borders using a single device. Use analog MDC 1200 or digital P25 mode, conventional or trunked operation, SmartNet or SmartZone legacy systems, clear or secure - all across 7/800MHz, VHF and UHF Range 1 & 2 bands.

### HEAR AND BE HEARD MORE CLEARLY

Whether it's loud or windy, whether you whisper or yell, the APX 8000 adaptive audio engine and ultra-loud speaker brings clarity into every conversation. The radio dynamically changes the level of noise suppression, microphone gain, windporting and speaker equalization on the fly to consistently produce the loudest, clearest audio in any environment.

### VOICE AND DATA, ALL AT ONCE

With Wi-Fi® access, the APX 8000 can quickly receive new codeplugs, firmware and software features in order to redeploy the radio fleet with ease as users keep talking without interruption. Mission Critical Wireless Bluetooth® connects quickly and securely with remote speaker microphones, surveillance kits and the LEX L10 Mission Critical LTE Handheld for radio remote control.

**PRODUCT DATA SHEET** | APX™ 8000

### FIT FOR THE MISSION

Intuitively designed with a familiar look and feel, the compact APX 8000 is always comfortable to use, from your holster to your grip. It contains 4 radio bands packaged into the award-winning design of the APX 6000. The all-band antenna is flexible so it doesn't get in the way.

### RUGGED, ROBUST & RELIABLE

With a water-tight seal, drop-resistant dual battery latch, pressure-tested tempered glass display and a shock-absorbing aluminum alloy endoskeleton, the APX 8000 is ready for unpredictable environments. It can survive 2 meter water submersion for 2 hours (IP68) and Motorola's renowned Accelerated Life Test.

### DESIGNED TO SECURE & PROTECT

The APX 8000's voice and data is secured by multiple hardware encryption algorithms (256-bit AES, DES, ADP), up to 128 keys and the ability to re-key over the air so that sensitive information stays protected from scanners and eavesdroppers. P25 Radio Authentication ensures only valid users can access the system while two-factor authentication allows users to securely log in to databases.





### RF BANDS:

700/800 MHz, VHF, UHF Range 1 & 2

### OPERATION MODES:

9600 Baud Digital APCO P25 Phase 1 FDMA and Phase 2 TDMA Trunking

3600 Baud SmartNet®, SmartZone®, SmartZone, Omnilink Trunking

Digital APCO 25, Conventional, Analog MDC 1200, Quick Call II System Configurations

Narrow and wide bandwidth digital receiver (6.25 kHz equivalent/25/20/12.5 KHz)

### STANDARD FEATURES:

Mission Critical Wireless Bluetooth\*

ASTRO 25 Integrated Voice & Data

Integrated GPS/GLONASS for outdoor location tracking

Software Key

Text-Messaging

Voice Announcements

ISSI 8000 Roaming

Radio Profiles, Dynamic Zone

Intelligent Lighting

Single-key ADP Encryption

IP68 submersion (2 meters, 2 hours)

IMPRES Battery

### ADAPTIVE AUDIO ENGINE:

3 Watt Speaker with Adaptive Equalization

Adaptive Dual-sided Operation

Adaptive Noise Suppression Intensity

Adaptive Gain Control

Adaptive Windporting

### PROGRAMMING:

Utilizes Windows 7 & 8 Customer Programming Software (CPS) with Radio Management

### OPTIONAL FEATURES:

Wi-Fi® 802.11 b/g/n

RFID Volume Knob

Multi-key for 128 keys and multi-algorithm

Programming Over Project 25 (OTAP)

Over the Air Rekey (OTAR)

Digital Tone Signaling

LEX L10 Collaboration

P25 Authentication

Man Down Sensor

IP68 (2m/4hr), Mil Std 512.X Delta - T

\* Compatible with BT 2.1, HSP, PAN, DUN and SPP Profiles found in off-the-shelf BT accessories and BT 4.x

## TRANSMITTER - TYPICAL PERFORMANCE SPECIFICATIONS

	700/800	VHF	UHF Range 1	UHF Range 2
Frequency Range/Bandsplits	764-776, 794-806 MHz 806-825, 851-870 MHz	136-174 MHz	380-470 MHz	450-520 MHz
Channel Spacing	25/20/12.5 kHz	25/20/12.5 kHz	25/20/12.5 kHz	25/20/12.5 kHz
Maximum Frequency Separation	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
Rated RF Output Power Adj <sup>1</sup>	700 MHz: 1-2.5 Watts 800 MHz: 1-3 Watts	1-6 Watts	1-5 Watts	1-5 Watts
Frequency Stability <sup>1</sup> (-30°C to +60°C; +25°C Ref.)	+/- 1.0 ppm	+/- 1.0 ppm	+/- 1.0 ppm	+/- 1.0 ppm
Modulation Limiting <sup>1</sup>	±5 kHz / ±4 kHz / ±2.5 kHz	±5 kHz / ±4 kHz / ±2.5 kHz	±5 kHz / ±4 kHz / ±2.5 kHz	±5 kHz / ±4 kHz / ±2.5 kHz
Emissions (Conducted and Radiated) <sup>1</sup>	-75 dBc	-75 dBc	-75 dBc	-75 dBc
Audio Response <sup>1</sup>	+1, -3 dB	+1, -3 dB	+1, -3 dB	+1, -3 dB
FM Hum & Noise (25kHz / 12.5kHz) <sup>1</sup>	700 MHz: -49 dB/-47 dB 800 MHz: -49 dB/-46 dB	-51 dB/-51 dB	-51 dB/-51 dB	-51 dB/-47 dB
Audio Distortion (25kHz / 12.5kHz) <sup>1</sup>	700 MHz: 0.90 % / 0.90 % 800 MHz: 0.60 % / 0.90 %	0.50 % / 0.90 %	0.50 % / 0.90 %	0.60 % / 0.90 %

## BATTERIES FOR APX 8000

Battery Capacity / Type	Dimensions (HxWxD)	Weight	Battery Part Number	Battery Capacity
Li-Ion IMPRES 2, 3400 mAh**	3.4" x 2.3" x 1.7"	6.5 oz	PMNN4486	3400 mAh
Li-Ion IMPRES 2, 4850 mAh	5.0" x 2.3" x 1.7"	11.0 oz	PMNN4487	4850 mAh
Li-Ion IMPRES 2, 5100 mAh	5.0" x 2.3" x 1.7"	11 oz	PMNN4494	5100 mAh

## KEY AUDIO ACCESSORIES

Name	Type	Part Number	Features
Extreme Policing (XP) RSM	Wired	NMNN6271	Dual-Mic Noise Suppression, Emergency, Volume Control, Prog Button, IP68
Mission Critical Wireless (MCW) RSM	Bluetooth	RLN6554	Windporting, Audio Jack, Emergency, Volume Control, Task Light, IP55, 12 hour 5/35/60 Duty Cycle

\*\*Ships standard with radio

## RADIO MODELS

**MODEL 1.5**



**MODEL 2.5**



**MODEL 3.5**



Display	Full bitmap monochromatic LCD top display 1 line text x 8 characters 1 line of icons No menu support Multi-color backlight	<b>Top display plus:</b> Full bitmap color LCD display 4 lines of text x 14 characters 2 lines of icons 1 menu line x 3 menus White backlight	<b>Top display plus:</b> Full bitmap color LCD display 4 lines of text x 14 characters 2 lines of icons 1 menu line x 3 menus White backlight
Keypad	none	Backlit keypad 3 soft keys 4 direction Navigation key Home and Data buttons	Backlit keypad 3 soft keys 4 direction navigation key 4x3 keypad Home and Data buttons
Channel Capacity	1200	3000	3000
FLASHport Memory	2 GB	2 GB	2 GB
700/800 MHz (764-870 MHz)	H91TGD9PW5AN	H91TGD9PW6AN	H91TGD9PW7AN
VHF (136-174 MHz)			
UHF Range 1 (380-470 MHz)			
UHF Range 2 (450-520 MHz)			

Buttons & Switches

Large PTT button ■ Angled On/Off volume control ■ Orange emergency button ■ 16 position top-mounted rotary switch  
■ 2-position concentric switch ■ Multi-color backlight ■ 3-position toggle switch ■ 3 programmable side buttons

### Regulatory Information

FCC ID	AZ489FT7061
Industry Canada	109U-89FT7061
Emission Designators	<p><u>LMR</u>: 8K10F1D, 8K10F1E, 8K10F1W, 11K0F3E, 16K0F3E***, 20K0F1E***</p> <p><u>Bluetooth</u>: 852KF1D, 1M17F1D, 1M19F1D</p> <p><u>WLAN (Wi-Fi )</u>: 13M7G1D, 17M0D1D, 18M1D1D</p>

\*\*\* In accordance with FCC mandate, the APX 8000 all band radio is restricted to 12.5kHz operation only and does NOT support 25kHz in the VHF and UHF Bands (excluding T-Band). This applies to customers under Rule Part 90.

### RECEIVER - TYPICAL PERFORMANCE SPECIFICATIONS

	700	800	VHF	UHF
Frequency Range/Bandsplits	764-776 MHz	851-870 MHz	136-174 MHz	380-520 MHz
Channel Spacing	25/20/12.5 kHz	25/20/12.5 kHz	25/20/12.5 kHz	25/20/12.5 kHz
Maximum Frequency Separation	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
Audio Output Power at Rated <sup>1</sup>	1 Watt	1 Watt	1 Watt	1 Watt
Frequency Stability <sup>1</sup> (-30°C to +60°C; +25°C Ref.)	+/- 1.0 ppm	+/- 1.0 ppm	+/- 1.0 ppm	+/- 1.0 ppm
Analog Sensitivity <sup>1</sup>	12 dB SINAD	0.224 uV	0.168 uV	0.199 uV
Digital Sensitivity <sup>2</sup>	1% BER	0.316 uV	0.251 uV	0.282 uV
	5% BER	0.211 uV	0.149 uV	0.158 uV
	5% BER Faded	0.562 uV	0.562 uV	0.530 uV
Selectivity (25 kHz / 12.5 kHz) <sup>1,5</sup>	79 dB / 72 dB	78 dB / 72 dB	82 dB / 77 dB	80 dB / 74 dB
Intermodulation Rejection <sup>1</sup>	81 dB	80 dB	82 dB	80 dB
Spurious Rejection <sup>1</sup>	98 dB	98 dB	92 dB	98 dB
FM Hum and Noise (25 kHz / 12.5 kHz) <sup>1</sup>	-55 dB / -53 dB	-54 dB / -52 dB	-57 dB / -55 dB	-56 dB / -54 dB
Audio Distortion <sup>1</sup>	0.9 %	0.9 %	0.9 %	0.9 %

## PORTABLE MILITARY STANDARDS 810 C, D, E, F & G

	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F		MIL-STD 810G	
	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	II	500.5	II
High Temperature	501.1	I, II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Hot	501.5	I/A1, II/A1
Low Temperature	502.1	I	502.2	I/C3, II/C1	502.3	I/C3, II/C1	502.4	I/C3, II/C1	502.5	I/C3, II/C1
Temperature Shock	503.1	I	503.2	I/A1C3	503.3	I/A1C3	503.4	I	503.5	I/C
Solar Radiation	505.1	II	505.2	I	505.3	I	505.4	I	505.5	I/A1
Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III	506.5	I, III
Humidity	507.1	II	507.2	II	507.3	II	507.4	1 Proc	507.5	II/Aggravated
Salt Fog	509.1	I	509.2	I	509.3	I	509.4	1 Proc	509.5	1 Proc
Blowing Dust	510.1	I	510.2	I	510.3	I	510.4	I	510.5	I
Blowing Sand	1 Proc	1 Proc	510.2	II	510.3	II	510.4	II	510.5	II
Submersion <sup>6</sup>	512.1	I	512.2	I	512.3	I	512.4	I	512.5	I
Vibration	514.2	VIII/F, Curve-W	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24	514.6	I/24
Shock	516.2	I, III, V	516.3	I, V, VI	516.4	I, V, VI	516.5	I, V, VI	516.6	I, V, VI
Shock (Drop)	516.2	II	516.2	IV	516.4	IV	516.5	IV	516.6	IV

## DIMENSIONS OF THE RADIOS WITHOUT BATTERY

	Inches	Millimeters
Length	5.47	139
Width Push-To-Talk button	2.39	60.7
Depth Push-To-Talk button	1.40	35.6
Width Top	2.98	75.7
Depth Top	1.58	40.1
Depth Bottom of Battery	1.24	31.5
Weight of the radios without battery	11.25 oz	319 g

## ENCRYPTION

Supported Encryption Algorithms	ADP, 256-bit AES, DES, DES-XL, DES-OFB, DVP-XL, Localized Algorithm
Encryption Algorithm Capacity	8
Encryption Keys per Radio	Module capable of storing 1024 keys. Programmable for 128 Common Key Reference (CKR) or 16 Physical Identifier (PID)
Encryption Frame Re-sync Interval	P25 CAI 360 mSec
Encryption Keying	Key Loader and Over the Air Rekeying (OTAR)
Synchronization	XL – Counter Addressing OFB – Output Feedback
Vector Generator	National Institute of Standards and Technology (NIST) approved random number generator
Encryption Type	Digital and SecureNet
Key Storage	Tamper protected volatile or non-volatile memory
Key Erasure	Keyboard command and tamper detection
Standards	FIPS 140-2 Level 3 FIPS 197

## WIRELESS CONNECTIVITY & SECURITY

Frequency Range/Bandsplits:

Bluetooth: 2402 - 2480 MHz, WLAN (Wi-Fi<sup>®</sup>): 2400 - 2483.5 MHz

WLAN (Wi-Fi<sup>®</sup>) 802.11 b/g/n supports WPA-2, WPA, WEP security protocols; radio can be pre-provisioned with up to 20 SSIDs

Mission Critical Wireless Bluetooth 2.1 uses 96 bit encryption for pairing & 128 bit encryption for voice, signaling and data. The radio BT supports up to 6 data connections and 1 audio connection.

Bluetooth Low Energy uses 128-bit AES-CCM encryption

## GPS/GNSS SPECIFICATIONS

Constellations	GPS & GLONASS
Tracking Sensitivity	-164 dBm
Accuracy <sup>3</sup>	<5 meters (95%)
Cold Start <sup>3</sup>	<60 seconds (95%)
Hot Start <sup>3</sup>	<5 seconds (95%)
Mode of Operation	Autonomous (Non-Assisted)

## ENVIRONMENTAL SPECIFICATIONS

Operating Temperature <sup>4</sup>	-30°C / +60°C
Storage Temperature <sup>4</sup>	-40°C / +85°C
Humidity	Per MIL-STD
ESD	IEC 801-2 KV
Water and Dust Intrusion	IP68 (2 meters, 2 hours)

## RUGGED OPTION SPECIFICATIONS

Leakage (submersion) <sup>6</sup>	MIL-STD-810 C, D, E, F and G Method 512.X Procedure I, IP68 (2 meters, 4 hours)
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## HOUSING COLOR

Black (Standard), Public Safety Yellow, and High Impact Green

<sup>1</sup> Measured conductively in analog mode per TIA / EIA 603 under nominal conditions.

<sup>2</sup> Measured conductively in digital mode per TIA / EIA IS 102.CAAA under nominal conditions.

<sup>3</sup> Measured conductively with >6 satellites visible at a nominal -130 dBm signal strength. Specs provided are 95th percentile values.

<sup>4</sup> Temperatures listed are for radio specifications. Battery storage is recommended at 25°C, ±5°C to ensure best performance.

<sup>5</sup> Measured using the TIA-603 single-tone method.

<sup>6</sup> Rugged option only. Specifications subject to change without notice.

All specifications shown are typical.  
Radio meets applicable regulatory requirements.

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# APX™ 6000 SINGLE-BAND PORTABLE RADIO



From day one, the single-band APX 6000 P25 portable radio has delivered legendary APX ruggedness and reliability, without compromising on the form factor or features required for routine activities and extreme emergencies. Now, as the ever-increasing needs of public safety personnel grow, we are evolving the APX 6000 to support newer technologies like Wi-Fi®, Adaptive Audio Engine, and Bluetooth® 4.0 wireless technology. These advances help improve the operational efficiency and response time of public safety agencies while enhancing the safety of personnel and communities.

## VOICE AND DATA, ALL AT ONCE

Update your radio fleet without interrupting voice communications with secure Wi-Fi. This dramatically improves the speed of configuring new codeplugs, firmware and software features over-the-air via Radio Management\*. Agencies can pre-provision up to 20 secure Wi-Fi hotspots so personnel can easily access updates at the facility or in the field.

## HEAR AND BE HEARD

The APX 6000 is equipped with a 3-watt speaker, 3 integrated microphones and the Adaptive Audio Engine. This changes the level of noise suppression, microphone gain, windporting and speaker equalization to produce clear and loud audio in any environment.

## SEAMLESS ON-SCENE COMMUNICATION

Ensure fast and seamless communication and collaboration across all responders arriving on a scene. Mission Critical Geofence automatically changes a radio's active talkgroup based on its GPS location and an agency-defined virtual barrier. For example, an incident commander can create a geofence around the 3-block radius of a burning building so that all arriving personnel are automatically placed in the same talkgroup.

## EMERGENCY FIND ME

Bluetooth 4.0 places a wide range of wireless accessories at your disposal and provides personnel with an added level of security by improving response time in emergencies. With Emergency Find Me, a Bluetooth-enabled beacon signal guides other Bluetooth-enabled APX radios within range to assist the user in distress.



\*Radio Management application simplifies APX radio configuration and management by programming up to 16 radios at one time and tracking which radios have been successfully programmed, providing a clear view of the entire radio fleet and a codeplug history for each radio.



## SPECIFICATIONS

### RF BANDS

- 700/800 MHz, VHF, UHF Range 1 & UHF Range 2
- 9600 Baud Digital APCO P25 Phase 1 FDMA and Phase 2 TDMA Trunking
- 3600 Baud SmartNet®, SmartZone®, SmartZone, Omnilink Trunking
- Digital APCO 25, Conventional, Analog MDC 1200, Quick Call II System Configurations Narrow and Wide Bandwidth Digital Receiver (6.25 kHz Equivalent/25/20/12.5 kHz)<sup>1</sup>

### STANDARD FEATURES

- Mission Critical Wireless Bluetooth® 4.0 (LE)<sup>2</sup>
- Emergency Find Me<sup>2</sup>
- ASTRO® 25 Integrated Voice & Data
- Integrated GPS/GLONASS for Outdoor Location Tracking
- Voice Announcements
- ISSI 8000 Roaming
- Radio Profiles
- Dynamic Zone
- Intelligent Lighting
- Single-Key ADP Encryption
- IP68 submersion (2 meters, 2 hours)
- IMPRES 2 Battery (PMNN4485)
- Text Message
- Software Key

### PROGRAMMING

- Utilizes Windows 7 & 8 Customer Programming Software (CPS) with Radio Management<sup>3</sup>

### ADAPTIVE AUDIO ENGINE (OPTIONAL)

- 3-W Speaker with Adaptive Equalization
- Adaptive Dual-Sided Operation
- Adaptive Noise Suppression Intensity
- Adaptive Gain Control
- Adaptive Windporting

### OPTIONAL FEATURES

- Wi-Fi 802.11 b/g/n
- LEX L10 Collaboration
- RFID Volume Knob
- Multi-key for 128 keys and Multi-Algorithm
- Programming Over Project 25 (OTAP)
- Over the Air Rekey (OTAR)
- Digital Tone Signaling
- Mission Critical Geofence
- P25 Authentication
- Man Down Capability
- High Impact Green and Public Safety Yellow Colored Housing Options
- Rugged Option: IP68 (2m/4hr), Mil Std 512.X Delta - T<sup>4</sup>
- Listed by UL to the standards ANSI/TIA 4950-A and CAN/CSA C22.2 NO. 157-92 Classification Rating: Class I, Division 1, Groups C, D; Class II, Division 1, Group E, F, G; Class III, Hazardous (Classified) Locations. ANSI/ISA 12.12.01-2015 and CAN/CSA C22.2 No. 213-15; Class I, Division 2, Groups A, B, C, D; T3C. Tamb = -25° C to +60° C. when used with Motorola Battery: NNTN8921A NNTN8930A 7.4V

<sup>1</sup> Per the FCC Narrowbanding rules, new products (APX6000 UHF1, UHF2 ) submitted for FCC certification after January 1, 2011 are restricted from being granted certification at 25 KHz for United States - State & Local Markets only.

<sup>2</sup> Compatible with BT 2.1, HSP, PAN, DUN and SPP Profiles found in off-the-shelf Bluetooth accessories and Bluetooth 4.x

<sup>3</sup> CPS version R12.00.00 and greater ordered after June 2014 will only support Windows 7 and 8

<sup>4</sup> Radios meet industry standards (IPX7) for submersion.

## TRANSMITTER - TYPICAL PERFORMANCE SPECIFICATIONS

		700/800	VHF	UHF Range 1	UHF Range 2
Frequency Range/Bandsplits	700 MHz 800 MHz	763-776, 793-806 MHz 806-824, 851-870 MHz	136-174 MHz	380-470 MHz	450-520 MHz
Channel Spacing		25/20/12.5 kHz	25/20/12.5 kHz	25/20/12.5 kHz	25/20/12.5 kHz
Maximum Frequency Separation		Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
Rated RF Output Power Adj <sup>1</sup>		1-3 Watts Max	1-6 Watts Max	1-5 Watts Max	1-5 Watts
Frequency Stability <sup>1</sup> (-30°C to +60°C; +25°C Ref.)		±0.00010 %	±0.00010 %	±0.00010 %	±0.00010 %
Modulation Limiting <sup>1</sup>		±5 kHz / ±4 kHz / ±2.5 kHz	±5 kHz / ±4 kHz / ±2.5 kHz	±5 kHz / ±4 kHz / ±2.5 kHz	±5 kHz / ±4 kHz / ±2.5 kHz
Emissions (Conducted and Radiated) <sup>1</sup>		-75 dB	-75 dB	-75 dB	-75 dB
Audio Response <sup>1</sup>		+1, -3 dB	+1, -3 dB	+1, -3 dB	+1, -3 dB
FM Hum & Noise	25k 25.5k	-52 dB -47 dB	-55 dB -50 dB	-52 dB -47 dB	-52 dB -46 dB
Audio Distortion <sup>1</sup>	700 MHz 800 MHz	1.00 %	1.00 %	1.00 %	1.00 %

## BATTERIES FOR APX 6000

Battery Capacity / Type	Dimensions (HxWxD)	Weight	Battery Part Number	Battery Capacity
Li-Ion IMPRES 2 2550mAh <sup>1</sup>	3.4" x 2.3" x 1.5"	5.0 oz	PMNN4485	2550 mAh
Li-Ion IMPRES 2 3400mAh	3.4" x 2.3" x 1.7"	6.5 oz	PMNN4486	3400 mAh
Li-Ion IMPRES 2 4850mAh	5" x 2.3" x 1.7"	11.0 oz	PMNN4487	4850 mAh
Li-Ion IMPRES 2 5100mAh	5" x 2.3" x 1.7"	11.0 oz	PMNN4494	5100 mAh
Li-Ion IMPRES 2 2650 mAh <sup>2</sup>	3.4" x 2.3" x 1.7"	5.7 oz	NNTN8930	2650 mAh
Li-Ion IMPRES 2 4500mAh <sup>2</sup>	5" x 2.3" x 1.7"	11.0 oz	NNTN8921	4500 mAh

<sup>1</sup> The standard shipping battery for the APX6000

<sup>2</sup> HAZLOC approved.

## RADIO MODELS

MODEL 1.5



MODEL 2.5



MODEL 3.5



Display	Full bitmap monochromatic LCD top display 1 line text x 8 characters 1 line of icons No menu support Multi-color backlight	Top display plus: Full bitmap color LCD display 4 lines of text x 14 characters 2 lines of icons 1 menu line x 3 menus White backlight	Top display plus: Full bitmap color LCD display 4 lines of text x 14 characters 2 lines of icons 1 menu line x 3 menus White backlight
Keypad	none	Backlit keypad 3 soft keys 4 direction Navigation key Home and Data buttons	Backlit keypad 3 soft keys 4 direction Navigation key 4x3 keypad Home and Data buttons
Channel Capacity <sup>1</sup>	96	1000	1000
FLASHport Memory	64 MB	64 MB	64 MB
700/800 MHz (763-870 MHz)	H98UCD9PW5BN	H98UCF9PW6BN	H98UCH9PW7BN
VHF (136-174 MHz)	H98KGD9PW5BN	H98KGF9PW6BN	H98KGH9PW7BN
UHF Range 1 (380-470 MHz)	H98QDD9PW5BN	H98QDF9PW6BN	H98QDH9PW7BN
UHF Range 2 (450-520 MHz)	H98SDD9PW5BN	H98SDF9PW6BN	H98SDH9PW7BN
Buttons & Switches	Large PTT button ■ Angled On/Off volume control ■ Orange emergency button ■ 16 position top-mounted rotary switch ■ 2-position concentric switch ■ Multi-color backlight ■ 3-position toggle switch ■ 3 programmable side buttons		

### Regulatory Information

	FCC ID	Industry Canada
700/800 (764-869 MHz)	AZ489FT7086	109U-89FT7086
VHF (136-174 MHz)	AZ489FT7087	109U-89FT7087
UHF Range 1 (380-470 MHz)	AZ489FT7077	109U-89FT7077
UHF Range 2 (420-520 MHz)	AZ489FT7085	109U-89FT7085

### FCC Emissions Designators

FCC Emissions Designators 11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 20K0F1E<sup>2</sup>

### Power Supply

Power Supply One rechargeable Li-Ion IMPRES 2 2550mAh battery standard (PMNN4485), with alternate battery options available.

<sup>1</sup> Enhancement package available

<sup>2</sup> Per the FCC Narrowbanding rules, new products (APX6000 UHFRR1, UHFRR2 ) submitted for FCC certification after January 1, 2011 are restricted from being granted certification at 25 kHz for United States - State & Local Markets only.

RECEIVER - TYPICAL PERFORMANCE SPECIFICATIONS					
		700/800	VHF	UHF Range 1	UHF Range 2
Frequency Range/Bandsplits	700 MHz 800 MHz	763-776 MHz 851-870 MHz	136-174 MHz	380-470 MHz	450-520 MHz
Channel Spacing		25/20/12.5 kHz	25/20/12.5 kHz	25/20/12.5 kHz	25/20/12.5 kHz
Maximum Frequency Separation		Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
Audio Output Power at Rated <sup>1</sup>		500 mW	500 mW	500 mW	500 mW
Analog Sensitivity <sup>2</sup>	12 dB SINAD	0.25 $\mu$ V	0.17 $\mu$ V	0.224 $\mu$ V	0.203 $\mu$ V
Digital Sensitivity <sup>3</sup>	1% BER (800 MHz)	0.375 $\mu$ V	0.243 $\mu$ V	0.298 $\mu$ V	0.296 $\mu$ V
	5% BER	0.24 $\mu$ V	0.15 $\mu$ V	0.200 $\mu$ V	0.204 $\mu$ V
Selectivity <sup>1</sup>	25 kHz channel	-76 dB	-78 dB	-77 dB	-76 dB
	12.5 kHz channel	-70 dB	-73 dB	-67 dB	-67 dB
Intermodulation		-80.1 dB	-80.2 dB	-80.3 dB	-80.2 dB
Spurious Rejection		-75 dB	-78 dB	-80.5 dB	-80.8 dB
FM Hum and Noise	25 kHz	-54 dB	-54.3 dB	-53.5 dB	-52.5 dB
	12.5 kHz	-79 dB	-50.1 dB	-47.5 dB	-47.3 dB
Audio Distortion at Rated <sup>1</sup>		0.90%	0.90%	0.70%	0.70%

1 Measured in the analog mode per TIA / EIA 603 under nominal conditions

2 Measured conductively in analog mode per TIA / EIA 603 under nominal conditions.

3 Measured conductively in digital mode per TIA / EIA IS 102.CAAA under nominal conditions.





**PORTABLE MILITARY STANDARDS 810 C, D, E, F & G**

	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F		MIL-STD 810G	
	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	II	500.5	II
High Temperature	501.1	I, II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Basic Hot	501.5	I/A1, II/A2
Low Temperature	502.1	I	502.2	I/C3, II/C1	502.3	I/C3, II/C1	502.4	I/C3, II/C1	502.5	I/C3, II/C1
Temperature Shock	503.1	I	503.2	I/A1C3	503.3	I/A1C3	503.4	I	503.5	I/C
Solar Radiation	505.1	II	505.2	I	505.3	I	505.4	I	505.5	I/A1
Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III	506.5	I, III
Humidity	507.1	II	507.2	II	507.3	II	507.4	1 Proc	507.5	II/Aggravated
Salt Fog	509.1	I	509.2	I	509.3	I	509.4	1 Proc	509.5	1 Proc
Blowing Dust	510.1	I	510.2	I	510.3	I	510.4	I	510.5	I
Blowing Sand	1 Proc	1 Proc	510.2	II	510.3	II	510.4	II	510.5	II
Immersion	512.1	I	512.2	I	512.3	I	512.4	I	512.5	I
Vibration	514.2	VIII/F, Curve-W	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24	514.6	I/24
Shock	516.2	I, III, V	516.3	I, V, VI	516.4	I, V, VI	516.5	I, V, VI	516.6	I, V, VI
Shock (Drop)	516.2	II	516.2	IV	516.4	IV	516.5	IV	516.6	IV





## DIMENSIONS OF THE RADIOS WITHOUT BATTERY

Length	5.47 in	139 mm
Width Push-To-Talk button	2.39 in	60.7 mm
Depth Push-To-Talk button	1.40 in	35.6 mm
Width Top	2.98 in	75.7 mm
Depth Top	1.58 in	40.1 mm
Depth Bottom of Battery	1.24 in	31.5 mm
Weight of the radios without battery	10.9 oz	309 g

## ENCRYPTION

Supported Encryption Algorithms	ADP, 256-bit AES, DES, DES-XL, DES-OFB, DVP-XL
Encryption Algorithm Capacity	8
Encryption Keys per Radio	Module capable of storing 1024 keys. Programmable for 64 Common Key Reference (CKR) or 16 Physical Identifier (PID)
Encryption Frame Re-sync Interval	P25 CAI 300 mSec
Encryption Keying	Key Loader
Synchronization	XL – Counter Addressing OFB – Output Feedback
Vector Generator	National Institute of Standards and Technology (NIST) approved random number generator
Encryption Type	Digital
Key Storage	Tamper protected volatile or non-volatile memory
Key Erasure	Keyboard command and tamper detection
Standards	FIPS 140-2 Level 3 FIPS 197

## GPS/GPS/GNSS SPECIFICATIONS

Constellations	GPS & GLONASS
Tracking Sensitivity	-164 dBm
Accuracy <sup>2</sup>	<5 meters (95%)
Cold Start	<60 seconds (95%)
Hot Start	<5 seconds (95%)
Mode of Operation	Autonomous (Non-Assisted)

## RUGGED SPECIFICATIONS

Leakage (submersion)	MIL-STD-810 C, D, E, F and G Method 512.X Procedure I, IP68 (2 meters, 4 hours)
----------------------	---------------------------------------------------------------------------------------

## HOUSING COLOR

Black (Standard), Public Safety Yellow, and High Impact Green

## ENVIRONMENTAL SPECIFICATIONS

Operating Temperature <sup>1</sup>	-30 °C to +60 °C
Storage Temperature <sup>1</sup>	-50 °C to +85 °C
Humidity Per MIL-STD	ESD IEC 801-2 KV
Water and Dust Intrusion	IP68 (2 meters, 4 hours)

<sup>1</sup> Temperatures listed are for radio specifications. Battery storage is recommended at 25 °C, ±5 °C to ensure best performance.

<sup>2</sup> Measured conductively with >6 satellites visible at a nominal -130 dBm signal strength. Specs provided are 95th percentile values.

## EMISSION DESIGNATORS

LMR: 8K10F1D, 8K10F1E, 8K10F1W, 11K0F3E, 16K0F3E, 20K0F1E

Bluetooth: 852KF1D, 1M17F1D, 1M19F1D, 1M04F1D

WLAN (Wi-Fi): 13M7G1D, 17M0D1D, 18M1D1D

## WIRELESS CONNECTIVITY AND SECURITY

Frequency Range/Bandsplits:

Bluetooth: 2402 - 2480 MHz, WLAN (Wi-Fi): 2400 - 2483.5 MHz

WLAN (Wi-Fi) 802.11 b/g/n supports WPA-2, WPA, WEP security protocols; radio can be pre-provisioned with up to 20 SSIDs<sup>1</sup>

Mission Critical Wireless Bluetooth 2.1 uses 96 bit encryption for pairing & 128 bit encryption for voice, signaling and data. The radio BT supports up to 6 data connections and 1 audio connection

Bluetooth 4.0 Low Energy uses 128-bit AES-CCM encryption

<sup>1</sup> 2400 - 2483.5 MHz for EMEA region and includes guardband.  
Channels 1 – 11 used for FCC/IC region.



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**PRODUCT DATA SHEET** | APX 6000 SINGLE-BAND PORTABLE RADIO



MISSION READY WHEN IT MATTERS MOST

# APX™ 4000 PROJECT 25 PORTABLE RADIO

Chemical spill. Catastrophic storm. Power outage. When every minute matters, you must communicate instantly with other agencies and responders. But how do you prepare for a disaster and keep control of operating costs? That's where the APX 4000 P25 portable radio answers the call, expertly and affordably.

The APX 4000 delivers all the benefits of TDMA technology in the smallest P25 capable portable in the industry. Easy to use, tough as nails, a hard value to beat, it seamlessly connects agencies throughout your city for fast, interoperable communications.

## TRUSTED APX QUALITY

The APX 4000 leverages the leading attributes of the APX family of P25 TDMA portables. From the 2-microphone design that reduces background noise so you can speak and hear clearly over heavy equipment, diesel engines and sirens to the high-spec RF performance for excellent coverage in challenging environments.

With its easy-to-use interface, color display, intelligent lighting and radio profiles, you get all the power of APX in a compact radio. Plus, you can extend the performance of your radio with a complete portfolio of industry-leading IMPRES™ smart energy and audio accessories.

## COMPACT AND UNCOMPROMISING

A compact P25 Phase 2 capable portable, the APX 4000 gets the job done without getting in the way. With two dedicated knobs for volume and channel control, the APX 4000 provides readiness for any type of work setting. And its standard IP67 and MIL-STD certified to withstand dust, heat, shock, drops and water immersion, so you can count on it wherever you need it – at the factory line, power line or fire line.

## P25 PERFORMANCE, INSIDE AND OUT

Loaded with key P25 features to increase safety, the APX 4000 features Mission Critical Wireless. This unique Bluetooth® solution provides an encrypted link to a high performance earpiece, GPS for quickly locating personnel outdoors, 256-bit AES encryption for improved security, and over-the-air programming to program radios in the field without interrupting voice operation.

## IMPROVE RESPONSE AND EXPENSES

The APX 4000 is P25 Phase 2 capable for twice the voice capacity so you can add more users without adding more frequencies or infrastructure. And it's backwards and forwards compatible with all Motorola mission critical radio systems, so you can interoperate with confidence while you improve operating expenses.

## POWER UP WITH APX 4000 ACCESSORIES

- Designed, tested and certified for optimum performance with your radio.
- Complete portfolio of remote speaker microphones, headsets and Mission Critical Wireless Bluetooth® accessories.
- High-powered IMPRES™ batteries that have a slim design to fit the compact radio size.



**PRODUCT DATA SHEET**  
APX™ 4000



**FEATURES AND BENEFITS**

Available in 700/800 MHz, VHF, UHF R1, UHF R2 and 900 MHz bands

- Trunking standards supported:
  - Clear or digital encrypted ASTRO®25 Trunked Operation
  - Capable of SmartZone®, SmartZone Omnilink, SmartNet®
- Analog MDC-1200 and Digital APCO P25 Conventional System Configurations
- Narrow and wide bandwidth digital receiver (6.25 kHz equivalent / 12.5 kHz / 30 kHz / 25 kHz)<sup>1</sup>
- Standard with 2 dedicated control knobs for volume and channel changes
- Embedded digital signaling (ASTRO & ASTRO 25)
- Man Down
- Available in 2 models
- Lightbar with Intelligent Lighting
- Radio Profiles
- Unified Call List
- Software Key
- ASTRO 25 Integrated Voice & Data
- User programmable Voice Announcement
- Meets Applicable MIL-STD-810C, D, E, F and G
- IP67 standard

- Rugged Submersible housing (2 meters for 2 hours)<sup>2</sup>
- Superior Audio Features:
  - 0.5 W high audio speaker
  - 2-mic noise canceling technology
- GPS Outdoor Location Tracking
- Utilizes Windows XP, Vista and Windows 7 and 8 Customer Programming Software (CPS)
  - Supports USB communications
  - Built in FLASHport™ support
- Full portfolio of accessories including IMPRES batteries, chargers and audio devices<sup>1</sup>
- Mission Critical Wireless Bluetooth<sup>2</sup>

**OPTIONAL FEATURES**

- 256-bit AES Encryption
- Programming Over Project 25
- Text Messaging
- Man Down
- Site Selectable Alert Tones
- P25 Link Layer Authentication
- Enhanced Data
- Rugged Option: Mil Std 512.X, Delta - T

<sup>1</sup> Chargers and batteries for the APX 4000 radios are not compatible with other APX radios.

<sup>2</sup> Compatible with BT 2.1 HSP, PAN, DUN and SPP BT Profiles.

<sup>3</sup> When used with a Hazardous Location tested radio.

**TRANSMITTER - TYPICAL PERFORMANCE SPECIFICATIONS**

		700/800	VHF	UHF Range 1	UHF Range 2	900 MHz <sup>6</sup>
Frequency Range/ Bandplits	700 MHz 800 MHz	763-776, 793-806 MHz 806-824, 851-870 MHz	136-174 MHz	380-470 MHz	450-520 MHz	896-901, 935-940 MHz
Channel Spacing		25/12.5 kHz	30/25/12.5 kHz	25/12.5 kHz	25/12.5 kHz	12.5 kHz
Maximum Frequency Separation		Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
Rated RF Output Power Adj <sup>1</sup>		1-3 Watts Max	1-5 Watts Max	1-5 Watts Max	1-5 Watts Max	1-2.5 Watts Max
Frequency Stability <sup>1</sup> (-30°C to +60°C; +25°C Ref.)		±0.00010 %	±0.00010 %	±0.00010 %	±0.00010 %	±0.00010 %
Modulation Limiting <sup>1</sup>		±5 kHz / ±4 kHz / ±2.5 kHz	±5 kHz / ±4 kHz / ±2.5 kHz	±5 kHz / ±4 kHz / ±2.5 kHz	±5 kHz / ±4 kHz / ±2.5 kHz	±2.5 kHz
Emissions (Conducted and Radiated) <sup>1</sup>		-75 dB	-75 dB	-75 dB	-75 dB	-75 dB
Audio Response <sup>1</sup>		+1, -3 dB	+1, -3 dB	+1, -3 dB	+1, -3 dB	+1, -3 dB
FM Hum & Noise	25 kHz 12.5 kHz	-47 dB -45 dB	-47 dB -47 dB	-47 dB -45 dB	-47 dB -45 dB	-45 dB
Audio Distortion <sup>1</sup>	25 kHz 12.5 kHz	1.00%	1.00%	1.00%	1.00%	1.00%

**BATTERIES FOR APX 4000**

Battery Capacity / Type	Dimensions (HxWxD)	Weight	Battery Part Number	Battery Capacity
Li-Ion IMPRES 1900 mAh IP67	114.5x55.04x17.85	150 grams	NNTN8128A	1900 mAh
Li-Ion IMPRES 2300 mAh IP67 Non-HazLoc	114.5x55.04x23.15	160 grams	PMNN4424AR	2300 mAh
Li-Ion IMPRES 2300 mAh IP67 HazLoc <sup>3</sup>	114.5x55.04x23.15	210 grams	NNTN8560A	2500 mAh
Li-Ion IMPRES 2700 mAh IP54 Non-HazLoc <sup>3</sup>	114.5 x 55.04 x 23.15	160 grams	PMNN4448AR	2700 mAh





RADIO MODELS		
	MODEL 2	MODEL 3
Display	Full bitmap color LCD display 3 lines of text x 14 characters 1 line of icons 1 menu line x 3 menus White backlight	Full bitmap color LCD display 3 lines of text x 14 characters 1 line of icons 1 menu line x 3 menus White backlight
Keypad	Backlight keypad 3 soft keys 4 direction Navigation key Home and Data buttons	Backlight keypad 3 soft keys 4 direction navigation key 4x3 keypad Home and Data buttons
Channel Capacity	512	512
FLASHport Memory	64 MB	64 MB
700/800 MHz (763-870 MHz)	H51UCF9PW6AN Q360GK	H51UCH9PW7AN Q360GK
VHF (136-174 MHz)	H51KDF9PW6AN Q360GX	H51KDH9PW7AN Q360GX
UHF Range 1 (380-470 MHz)	H51QDF9PW6AN Q360GL	H51QDH9PW7AN Q360GL
UHF Range 2 (450-520 MHz)	H51SDF9PW6AN Q360HA	H51SDH9PW7AN Q360HA
900 MHz (896-940 MHz)	H51WCF9PW6AN Q360JF	H51WCH9PW7AN Q360JE
Buttons & Switches	Large PTT button ■ Angled On/Off Volume Control ■ 16 position top-mounted rotary switch ■ Orange emergency button ■ 3 programmable side buttons	

TRANSMITTER CERTIFICATION	
700/800 (764-869 MHz)	AZ489FT7049
VHF (136-174 MHz)	AZ489FT3828
UHF Range 1 (380-470 MHz)	AZ489FT4905
UHF Range 2 (450-520 MHz)	AZ489FT4910
900 MHz (896-901, 935-940 MHz)	AZ489FT5864

FCC EMISSIONS DESIGNATORS	
FCC Emissions Designators	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 20K0F1E*
FCC Emissions Designators for 900 MHz	11K0F3E, 8K10F1D, 8K10F1E, 8K10F1W

POWER SUPPLY	
Power Supply	One rechargeable Li-Ion 1900 mAh battery standard, or 2300 mAh/2700 mAh high cap Li-Ion.

RECEIVER - TYPICAL PERFORMANCE SPECIFICATIONS						
		700/800	VHF	UHF Range 1	UHF Range 2	900 MHz
Frequency Range/Bandsplits	700 MHz 800 MHz	763-776 MHz 851-870 MHz	136-174 MHz	380-470 MHz	450-520 MHz	935-940 MHz
Channel Spacing		25/12.5 kHz	30/25/12.5 kHz	25/12.5 kHz	25/12.5 kHz	12.5 kHz
Maximum Frequency Separation		Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
Audio Output Power at Rated <sup>1</sup>		500mW	500mW	500mW	500mW	500mW
Frequency Stability <sup>1</sup> (-30°C to +60°C; +25°C Ref.)		±0.00010 %	±0.00010 %	±0.00010 %	±0.00010 %	±0.00010 %
Analog Sensitivity <sup>3</sup>	12 dB SINAD	0.250µV	0.216µV	0.234µV	0.234µV	0.236µV
Digital Sensitivity <sup>4</sup>	1% BER (800 MHz)	0.400µV	0.277µV	0.307µV	0.307µV	0.33µV
	5% BER	0.250µV	0.188µV	0.207µV	0.207µV	0.222µV
Selectivity <sup>1</sup>	25 kHz channel	-76 dB	-76 dB	-76 dB	-76 dB	
	12.5 kHz channel	-67 dB	-70 dB	-67 dB	-67 dB	-67 dB
Intermodulation		-75 dB	-79 dB	-77 dB	-77 dB	-75 dB
Spurious Rejection		-76.6 dB	-80.5 dB	-80.3 dB	-80.3 dB	-80 dB
FM Hum and Noise	25 kHz	-53 dB	-51 dB	-50 dB	-50 dB	
	12.5 kHz	-47 dB	-45 dB	-45 dB	-45 dB	-47 dB
Audio Distortion <sup>1</sup>		1.00%	1.00%	1.00%	1.00%	1.00%

**PRODUCT DATA SHEET**  
APX™ 4000

**PORTABLE MILITARY STANDARDS 810 C, D, E, F & G**

	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F		MIL-STD 810G	
	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	II	500.5	II
High Temperature	501.1	I, II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Basic Hot	501.5	I/A1, II/A2
Low Temperature	502.1	I	502.2	I/C3, II/C1	502.3	I/C3, II/C1	502.4	I/C3, II/C1	502.5	I/C3, II/C1
Temperature Shock	503.1	I	503.2	I/A1C3	503.3	I/A1C3	503.4	I	503.5	I/C
Solar Radiation	505.1	II	505.2	I	505.3	I	505.4	I	505.5	I/A1
Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III	506.5	I, III
Humidity	507.1	II	507.2	II	507.3	II	507.4	1 Proc	507.5	II/Aggravated
Salt Fog	509.1	I	509.2	I	509.3	I	509.4	1 Proc	509.5	1 Proc
Blowing Dust	510.1	I	510.2	I	510.3	I	510.4	I	510.5	I
Blowing Sand	1 Proc	1 Proc	510.2	II	510.3	II	510.4	II	510.5	II
Vibration	514.2	VIII/F, Curve-W	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24	514.6	I/24
Shock	516.2	I, III, V	516.3	I, V, VI	516.4	I, V, VI	516.5	I, V, VI	516.6	I, V, VI
Shock (Drop)	516.2	II	516.2	IV	516.4	IV	516.5	IV	516.6	IV

**DIMENSIONS OF THE RADIOS WITHOUT BATTERY**

	Inches	Millimeters
Length	5.42	137.7
Width Push-To-Talk button	2.42	61.4
Depth Push-To-Talk button	1.41	35.75
Width Top	2.62	66.55
Depth Top	1.84	46.7
Weight of the radios without battery	10.05 oz	285 g

**GPS SPECIFICATIONS**

Channels	12
Tracking Sensitivity	-159 dBm
Accuracy <sup>5</sup>	<10 meters (95%)
Cold Start	<60 seconds (95%)
Hot Start	<10 seconds (95%)
Mode of Operation	Autonomous (Non-Assisted) GPS

**ENCRYPTION**

Supported Encryption Algorithms	256-bit AES, ADP
Encryption Algorithm Capacity	8
Encryption Keys per Radio	Module capable of storing 1024 keys. Programmable for 48 Common Key Reference (CKR) or 16 Physical Identifier (PID)
Encryption Frame Re-sync Interval	P25 CAI 300 mSec
Encryption Keying	Key Loader
Synchronization	XL – Counter Addressing OFB – Output Feedback
Vector Generator	National Institute of Standards and Technology (NIST) approved random number generator
Encryption Type	Digital
Key Storage	Tamper protected volatile or non-volatile memory
Key Erasure	Keyboard command and tamper detection
Standards	FIPS 140-2 Level 3; FIPS 197

**ENVIRONMENTAL SPECIFICATIONS**

Operating Temperature <sup>6</sup>	-30°C / +60°C
Storage Temperature <sup>6</sup>	-40°C / +85°C
Humidity	Per MIL-STD
ESD	IEC 801-2 KV
Water and Dust Intrusion	IP67
Submersion	MIL-STD 512.X

<sup>1</sup> Measured in the analog mode per TIA / EIA 603 under nominal conditions

<sup>2</sup> When used with an UL approved intrinsically safe radio

<sup>3</sup> Measured conductively in analog mode per TIA / EIA 603 under nominal conditions.

<sup>4</sup> Measured conductively in digital mode per TIA / EIA IS 102.CAAA under nominal conditions.

<sup>5</sup> Accuracy specs are for long-term tracking (95th percentile values >5 satellites visible at a nominal -130 dBm signal strength).

<sup>6</sup> Temperatures listed are for radio specifications. Battery storage is recommended at 25°C, ±5°C to ensure best performance.

Specifications subject to change without notice. All specifications shown are typical. Radio meets applicable regulatory requirements.

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# APX™ 900

## SINGLE-BAND P25 PORTABLE TWO-WAY RADIO

### FEATURES AND BENEFITS

- Dual-Knob Solution
- Available in VHF, UHF (R1 and R2), 700/800 MHz, and 900 MHz bands
- Modes of Operation:
  - Clear or digital-encrypted ASTRO® 25 Trunked Operation
  - Analog MDC-1200 and Digital P25
  - Conventional System Configurations
- Narrow and wide bandwidth digital receiver (6.25 kHz equivalent / 12.5 kHz / 25 kHz)<sup>1</sup>
- Embedded digital signaling (ASTRO and ASTRO 25)
- Intelligent Priority Scan
- Available in models 2 and 3
- Radio Profiles
- Unified Call List
- User-programmable Voice Announcement
- Instant Recall
- Meets Applicable MIL-STD-810C, D, E, F and G
- Full Portfolio of Accessories, including IMPRES batteries, chargers and audio devices<sup>2</sup>

### STANDARD FEATURES

- Operational-Critical Wireless Bluetooth® 4.0 (LE)<sup>3</sup>
- Emergency Find Me
- ASTRO 25 Integrated Voice & Data
- Integrated GPS/GLONASS for Outdoor Location-Tracking

- Single-Key Advanced Digital Privacy (ADP) Encryption
- IP68 submersion (2 meters, 2 hours)
- IMPRES Battery (PMNN4491B)
- Embedded digital signaling (ASTRO and ASTRO 25)
- Text Messaging
- Software key

### PROGRAMMING

- Utilizes Windows 7, 8 and 10 Customer Programming Software (CPS) with Radio Management

### OPTIONAL FEATURES

- AES 256-bit Software Encryption (AES-256)
- Enhanced Data
- Enhanced Noise Suppressor (Highly Recommended)
- Multi-Key
- Programming Over Project 25 (OTAP)
- RFID Volume Knob (Accessory only)
- Mission Critical Geofence
- P25 Authentication
- Digital Tone Signaling
- UL-certified



Product shown with optional stubby antenna



### TRANSMITTER- TYPICAL PERFORMANCE SPECIFICATIONS

	VHF	UHF Range 1	UHF Range 2	700/800 MHz	900 MHz
Frequency Range/Bandsplits	136-174 MHz	380-480 MHz	450-520 MHz	764-776 MHz 794-806 MHz 806-824 MHz 851-870 MHz	896-902 MHz 935-941 MHz
Channel Spacing <sup>4</sup>	12.5/20/25 kHz	12.5/20/25 kHz	12.5/20/25 kHz	12.5/20/25 kHz	12.5 kHz
Maximum Frequency Separation	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
Rated RF Output Power (Adjustable) <sup>5</sup>	1-5 W	1-5 W	1-5 W	700 MHz: 1-2.5 W 800 MHz: 1-3 W	1-2.5 W
Frequency Stability <sup>6</sup> (-30 °C to +85 °C; +25 °C Ref.)	±1.0 ppm	±1.0 ppm	±1.0 ppm	±1.0 ppm	±1.0 ppm
Modulation Limiting (12.5/20/25 kHz)	± 2.5/4/5 kHz	± 2.5/4/5 kHz	± 2.5/4/5 kHz	± 2.5/4/5 kHz	± 2.5 kHz
Audio Response <sup>5</sup>	+1, -3 dB	+1, -3 dB	+1, -3 dB	+1, -3 dB	+1, -3 dB
Emissions <sup>5</sup> (conducted and radiated)	-75 dBc	-75 dBc	-75 dBc	-75 dBc	-75 dBc
FM Hum & Noise (12.5/25 kHz)	-45/-47 dB	-45/-47 dB	-45/-47 dB	-45/-47 dB	-45 dB
Audio Distortion <sup>5</sup>	1.00%	1.00%	1.00%	1.00%	1.00%

### RECEIVER- TYPICAL PERFORMANCE SPECIFICATIONS

	VHF	UHF Range 1	UHF Range 2	700/800 MHz	900 MHz
Frequency Range/Bandsplits	136-174 MHz	380-480 MHz	450-520 MHz	764-776 MHz 851-870 MHz	935-941 MHz
Channel Spacing <sup>4</sup>	12.5/20/25 kHz	12.5/20/25 kHz	12.5/20/25 kHz	12.5/20/25 kHz	12.5 kHz
Maximum Frequency Separation	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
Audio Output Power at Rated <sup>5</sup>	500 mW	500 mW	500 mW	500 mW	500 mW
Frequency Stability (-30 °C to +85 °C; +25 °C Ref.)	±1.0 ppm	±1.0 ppm	±1.0 ppm	±1.0 ppm	±1.0 ppm
Analog Sensitivity <sup>7</sup> 12 dB SINAD	0.216 µV	0.234 µV	0.234 µV	0.250 µV	0.237 µV
Digital Sensitivity <sup>8</sup> 1% BER	0.277 µV	0.307 µV	0.307 µV	0.400 µV	0.330 µV
5% BER	0.188 µV	0.207 µV	0.207 µV	0.250 µV	0.224 µV
Selectivity <sup>5</sup> (12.5/25 kHz)	-70/-76 dB	-67/-76 dB	-67/-76 dB	-67/-76 dB	-67 dB
Intermodulation	79.5 dB	77.0 dB	77.0 dB	75.0 dB	75.0 dB
Spurious Rejection	-79.3 dB	-80.3 dB	-80.3 dB	-76.6 dB	-76.0 dB
FM Hum & Noise (12.5/25 kHz)	-45/-51 dB	-45/-50 dB	-46/-52 dB	-47/-53 dB	-47 dB
Audio Distortion <sup>4</sup>	1.00%	1.00%	1.00%	1.00%	1.00%

### FCC EMISSION DESIGNATORS

FCC Emission Designators	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W
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### REGULATORY INFORMATION

	FCC ID	Industry Canada
VHF	AZ489FT7098	109U-89FT7098
UHF Range 1	AZ489FT7097	109U-89FT7097
UHF Range 2	AZ489FT7099	109U-89FT7099
700/800 MHz	AZ489FT7096	109U-89FT7096
900 MHz	AZ489FT7100	109U-89FT7100





RADIO MODEL		
	MODEL 2	MODEL 3
Display	Full bitmap color LCD display, 3 lines of text x 14 characters, 1 line of icons, 1 menu line x 2 menus, White backlight	
Keypad	Backlit keypad, 2 soft keys, 4-direction navigation key, Home and Back buttons	Backlit keypad, 2 soft keys, 4-direction navigation key, 4x3 keypad, Home and Back buttons
Channel Capacity	512	
FLASHport Memory	2 GB	
VHF	H92KDF9PW6AN	H92KDH9PW7AN
UHF Range 1	H92QDF9PW6AN	H92QDH9PW7AN
UHF Range 2	H92SDF9PW6AN	H92SDH9PW7AN
700/800 MHz	H92UCF9PW6AN	H92UCH9PW7AN
900 MHz	H92WCF9PW6AN	H92WCH9PW7AN
Buttons & Switches	PTT button • Two-knob (volume + channel/talkgroup) • Orange emergency button • 3 programmable side buttons	

**POWER SUPPLY**

One rechargeable IMPRES Li-Ion 2100 mAh, slim high density battery IP68 (PMNN4491B), with alternate battery options available.

BATTERIES FOR APX 900					
BATTERY CAPACITY / TYPE	DIMENSIONS (H X W X D)	WEIGHT	BATTERY PART NUMBER	BATTERY CAPACITY	
IMPRES Standard Li-Ion 2100 mAh, slim high density battery (IP68)	113 x 52 x 18 mm	135 g	PMNN4491B	2100 mAh	
IMPRES Hi-Cap Li-Ion 3000 mAh battery, low voltage (IP68)	113 x 52 x 23 mm	155 g	PMNN4493A	3000 mAh	
IMPRES Hi-Cap Li-Ion 2900 mAh low voltage battery (IP68, UL-rated®)	113 x 52 x 23 mm	210 g	PMNN4489A	2900 mAh	



**PORTABLE MILITARY STANDARDS 810 C, D, E, F AND G**

	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F		MIL-STD 810G	
	Method	Proc./Cat	Method	Proc./Cat	Method	Proc./Cat	Method	Proc./Cat	Method	Proc./Cat
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	II	500.5	II
High Temperature	501.1	I, II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Basic Hot	501.5	I/A1, II/A2
Low Temperature	502.1	I	502.2	I/C3, II/C1	502.3	I/C3, II/C1	502.4	I/C3, II/C1	502.5	I/C3, II/C1
Temperature Shock	503.1	I	503.2	I/A1C3	503.3	I/A1C3	503.4	I	503.5	I/C
Solar Radiation	505.1	II	505.2	I	505.3	I	505.4	I	505.5	I/A1
Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III	506.5	I, III
Humidity	507.1	II	507.2	II	507.3	II	507.4	1 Proc	507.5	II/Aggravated
Salt Fog	509.1	I	509.2	I	509.3	I	509.4	1 Proc	509.5	1 Proc
Blowing Dust	510.1	I	510.2	I	510.3	I	510.4	I	510.5	I
Blowing Sand	1 Proc	1 Proc	510.2	II	510.3	II	510.4	II	510.5	II
Vibration	514.2	VIII/F, Curve-W	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24	514.6	I/24
Shock	516.2	I, III	516.3	I, VI	516.4	I, VI	516.5	I, VI	516.6	I, VI
Shock (Drop)	516.2	II	516.2	IV	516.4	IV	516.5	IV	516.6	IV

**BLUETOOTH**

Version	Bluetooth 4.0 (LE)
Encryption	SSP Pairing 128-bit AES-CDM Encryption for voice, data and signaling
Connections	Up to 6 data + 1 audio

**DIMENSIONS: RADIO WITH BATTERY**

	STD BATTERY	HI-CAP BATTERY
Length	5.1 in (130 mm)	5.1 in (130 mm)
Width	2.2 in (55 mm)	2.2 in (55 mm)
Thickness	1.4 in (36 mm)	1.6 in (41 mm)
Weight	11 oz (315 g)	12 oz (347 g)

**GPS/GNSS SPECIFICATIONS**

Constellations	GPS and GLONASS
Tracking Sensitivity	-154 dBm
Accuracy <sup>9</sup>	<10 m (95%)
Cold / Hot Start	<60 / <5 s (95%)
Mode of Operation	Autonomous (non-assisted) GPS

1 Per the FCC Narrowbanding rules, new products submitted for FCC certification after January 1, 2011 are restricted from being granted certification at 25 kHz for United States - State and Local Markets only.

2 Chargers and batteries for APX 1000 will interoperate with APX 900

3 Compatible with BT 2.1, HSP, PAN, DUN and SPP Profiles in off-the-shelf Bluetooth accessories and Bluetooth 4.x

4 Check your regional regulatory agency for availability of different channels bandwidths

5 Measured in the analog mode per TIA / EIA 603 under nominal conditions

6 When used with an UL-approved intrinsically safe radio

7 Measured conductively in analog mode per TIA / EIA 603 under nominal conditions.

8 Measured conductively in digital mode per TIA / EIA IS 102.CAAA under nominal conditions.

9 Accuracy specs are for long-term tracking (95th percentile, >5 satellites visible at a nominal -130 dBm signal strength).

10 Temperatures listed are for radio. Battery storage is recommended at 25 °C, ±5 °C to ensure best performance.

**ENCRYPTION**

Supported Encryption Algorithms	Advanced Digital Privacy (ADP) AES 256-bit Software Encryption (AES-256)
Encryption Keys per Radio	48
Encryption Frame Re-sync Interval	P25 CAI 360 ms
Encryption Keying	Key Loader
Vector Generator	National Institute of Standards and Technology (NIST) approved random number generator
Encryption Type	Digital
Key Storage	Non-volatile Memory
Key Erasure	Keyboard Command
Standards	FIP 140-2 Level 1; FIPS 197

**ENVIRONMENTAL SPECIFICATIONS**

Operating Temperature	-30 °C to +60 °C
Storage Temperature <sup>10</sup>	-40 °C to +85 °C
Humidity	Per MIL-STD
ESD	IEC 801-2 KV
Water and Dust Intrusion	IP68 (2 meters, 2 hours)
Housing Color Availability	Black only

Specifications subject to change without notice.

All specifications shown are typical.

Radio meets applicable regulatory requirements.

For more information, please visit [motorolasolutions.com/apx](http://motorolasolutions.com/apx)



Motorola Solutions Inc., 500 West Monroe St, Chicago, IL 60661 U.S.A. [motorolasolutions.com](http://motorolasolutions.com)

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# APX NEXT

PROTECT YOUR FOCUS

IN PUBLIC SAFETY, FOCUS IS YOUR GREATEST RESOURCE. MAKE SURE IT'S PROTECTED WITH APX NEXT®.

#### A MASSIVE ADVANCE IN MISSION-CRITICAL VOICE AND DATA

Your radio is your lifeline. APX NEXT is our next step in advancing it. It's designed to military standards for extreme ruggedness. The touchscreen works with or without gloves—in rain, dirt, and dust. Digital mics and high-power speakers deliver our best audio ever, while SmartConnect keeps you connected even beyond your P25 system. The result is a radio that works when you need it, without pause, distraction or doubt.

#### EFFORTLESS IS ALWAYS IN REACH

APX NEXT is designed for effortless usability when everything is on the line. Intuitive knobs and buttons are easily distinguished by touch. A mission-critical touchscreen makes it fast and easy to operate your radio. ViQi understands a huge range of natural language voice commands, so you can operate the radio with eyes-up awareness. Every interaction is simple, fast and logical. You stay focused on what matters—your mission and your safety.

#### BRING NEW INTELLIGENCE TO THE POINT OF ENGAGEMENT

APX NEXT mission-critical apps bring new intelligence to the field. ViQi enables natural language database queries, rapidly giving vital information, and letting dispatchers stay focused on critical situations. And as part of our unique, end-to-end public safety ecosystem, APX NEXT data and operations are secure, and new capabilities can be seamlessly added as your needs evolve.

#### UPDATE YOUR FLEET IN MINUTES, NOT MONTHS

APX NEXT gives you back time: a cloud-based provisioning system prepares radios before they arrive. Remote updating keeps radios in the field, with zero touch and zero downtime. MyView Portal provides direct access to subscriptions, warranties and licenses, and a range of services helps you manage your operation. With APX NEXT, your ownership experience is streamlined, so your valuable resources stay focused and ready.



# MISSION-CRITICAL DESIGN

New antenna technology improves comfort and wearability

Large color top screen, for glanceable status updates

Intuitive hard controls, protected against accidental activation

Mission-critical touchscreen: rugged, usable with gloves, readable in all lighting conditions

Digital microphones, for outstanding audio capture

Large, distinctive buttons for PTT, emergency and ViQi, and two additional programmable side buttons

Standard 4400 mAh battery, with 5650 mAh high-capacity option





# FEATURES

## OPERATION MODES

Digital Trunking: 9600 Baud APCO P25 Phase 1 FDMA and Phase 2 TDMA

Digital Conventional: APCO 25

Analog Trunking: 3600 Baud SmartNet®, SmartZone®, Omnilink®

Analog Conventional: MDC 1200

ASTRO® 25 Integrated Voice and Data SmartConnect Multi-net Connectivity\*

## FREQUENCY BANDS

All-band: Simultaneous Operation in VHF, UHF Range 1, UHF Range 2, 700 and 800 MHz Bands

Available in Multi-band and Single-band Configurations Up to 3000 Channels

Up to 125 Zones

## ADDITIONAL CONNECTIVITY

Bluetooth (Version 5.0)

WiFi (802.11a/b/g/n/ac), 2.4 and 5 GHz Bands

LTE (FirstNet®, Verizon, & Bell Mobility - certified)

NFC (Near-Field Communications)\*\*

## AUDIO FEATURES

3 W Speaker with Adaptive Equalization

2 Internal Digital Microphones

Adaptive Dual-sided Operation

Adaptive Noise Suppression Intensity

Adaptive Gain Control

Adaptive Windporting

IMPRES™ Audio Accessory Compatibility

## MANAGEMENT

RadioCentral™

SmartProgramming\*

SmartInsight\* Preview

## LOCATION-TRACKING

Built-in GNSS (GPS and GLONASS)

SmartLocate and Indoor Positioning\*

Mission-critical Geofence\*\*

SmartMapping\*

## SECURITY

256-bit AES\*

Single-key ADP Encryption\*

Software Key

P25 Authentication\*

Multikey for 128 Keys and Multi-algorithm\*

Over-The-Air Key Loading\*\*\*

Over-The-Air Rekeying (OTAR)\*

## INGRESS PROTECTION

IP6x Dust

IPx8 Submersion (2 m, 4 hr)

MIL-STD Delta-T, 512.X Procedure 1

## MESSAGING

Text Messaging

Freeform or Canned Messages

SmartMessaging\*

## USER INTERFACE

3.6" Mission-critical Touchscreen: 800x480 TFT 24-bit Full Color Transflective Display, 1 mm Toughened Glass Lens

Capacitive Touch Technology: Usable with Gloves

Up to 4 mm Thick, Resistant to False Actuation from Fresh or Salt Water, Snow, Ice, Dirt or Grease

High Velocity User Interface: Large Touch Targets, Shallow Menu Hierarchy, Home Screen Information at a Glance, Integrated Applications

1.2" Top Display: 200x112 TFT 18-bit Color Transflective Screen, 1 Line of Icons, 2 Lines of Text, 14 Characters per Line, 2 mm Toughened Glass Lens

PTT Button: 1.32 x 0.54 in (33.5 x 13.8 mm)

16-position Channel Selector

Angled Power/Volume Knob

Large Orange Emergency Button

3 Programmable Side Buttons (1-dot, 2-dot, purple)

Concentric 2-position Switch

ABC Zone Switch

ViQi Button (3-dot)

Display On/Off/Home Button

## ViQi VOICE INTERACTION

Customizable Voice Announcements

Voice Control: 13 Actions with Intuitive Commands\*

Virtual Partner Service\*

## ENERGY

Standard 4400 mAh Battery

Optional High Capacity 5650 mAh Battery\*

IMPRES 2 Smart Battery Technology

## SENSORS

Ambient Light

Accelerometer x2 (Display Orientation, Man Down)

Magnetometer (eCompass)

## OTHER FEATURES

Radio Profiles

Enhanced Data\*

Multicast Voting Scan\*

Man Down\*

DVRS PSU\*

Digital Tone Signaling\*

## DIMENSIONS

### Radio with Standard Battery, no Antenna

Height: 5.4 in (138 mm)

Width: 2.5 in (63 mm)

Depth: 1.7 in (43 mm)

Weight: 18.5 oz (525 g)

### Radio with High Capacity Battery, no Antenna

Height: 7.1 in (180 mm)

Width: 2.5 in (63 mm)

Depth: 1.7 in (43 mm)

Weight: 22.8 oz (647 g)





# PERFORMANCE

## TRANSMITTER

	Footnote	VHF	UHF Range 1	UHF Range 2	700 MHz	800 MHz
Frequency Range / Bandsplits	-	136-174 MHz	380-470 MHz	450-520 MHz	762-776, 792-806 MHz	806-825, 851-870 MHz
Channel Spacing	1	12.5 / 20 / 25 kHz	12.5 / 20 / 25 kHz	12.5 / 20 / 25 kHz	12.5 / 20 / 25 kHz	12.5 / 20 / 25 kHz
Maximum Frequency Separation	-	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
Rated RF Output Power (Adjustable)	2	1-6 W	1-5 W	1-5 W	1-2.5 W	1-3 W
Frequency Stability (-30 °C to +60 °C; +25 °C Ref.)	2	±1.0 ppm	±1.0 ppm	±1.0 ppm	±1.0 ppm	±1.0 ppm
Modulation Limiting (12.5 / 20 / 25 kHz Channel)	2	±2.5 / ±4 / ±5 kHz	±2.5 / ±4 / ±5 kHz	±2.5 / ±4 / ±5 kHz	±2.5 / ±4 / ±5 kHz	±2.5 / ±4 / ±5 kHz
Emissions (Conducted and Radiated)	2	-75 dBc	-75 dBc	-75 dBc	-75 dBc	-75 dBc
Audio Response	2	+1, -3 dB	+1, -3 dB	+1, -3 dB	+1, -3 dB	+1, -3 dB
FM Hum and Noise (12.5 / 25 kHz Channel)	2	-53 / -55 dB	-52 / -54 dB	-51 / -54 dB	-50 / -55 dB	-49 / -53 dB
Audio Distortion (12.5 / 25 kHz Channel)	2	0.75% / 0.75%	0.75% / 0.75%	0.75% / 0.75%	0.85% / 0.85%	0.85% / 0.85%

## RECEIVER

	Footnote	VHF	UHF Range 1	UHF Range 2	700 MHz	800 MHz
Frequency Range / Bandsplits	-	136-174 MHz	380-470 MHz	450-520 MHz	762-776, 799-806 MHz	851-870 MHz
Channel Spacing	1	12.5 / 20 / 25 kHz	12.5 / 20 / 25 kHz	12.5 / 20 / 25 kHz	12.5 / 20 / 25 kHz	12.5 / 20 / 25 kHz
Maximum Frequency Separation	-	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
Frequency Stability (-30 °C to +60 °C; +25 °C Ref.)	2	±1.0 ppm	±1.0 ppm	±1.0 ppm	±1.0 ppm	±1.0 ppm
Analog Sensitivity (12 dB SINAD)	2	0.178 µV (-122.0 dBm)	0.211 µV (-120.5 dBm)	0.211 µV (-120.5 dBm)	0.224 µV (-120.0 dBm)	0.237 µV (-119.5 dBm)
Digital Sensitivity (1% BER)	3	0.266 µV (-118.5 dBm)	0.298 µV (-117.5 dBm)	0.298 µV (-117.5 dBm)	0.335 µV (-116.5 dBm)	0.335 µV (-116.5 dBm)
Digital Sensitivity (5% BER)	3	0.158 µV (-123.0 dBm)	0.178 µV (-122.0 dBm)	0.178 µV (-122.0 dBm)	0.224 µV (-120.0 dBm)	0.224 µV (-120.0 dBm)
Selectivity (12.5 / 25 kHz Channel)	2	77 / 84 dB	74 / 81 dB	74 / 81 dB	72 / 80 dB	72 / 79 dB
Intermodulation Rejection	2	82 dB	80 dB	80 dB	80 dB	80 dB
Spurious Rejection	2	98 dB	95 dB	95 dB	98 dB	98 dB
FM Hum and Noise (12.5 / 25 kHz Channel)	2	55 / 59 dB	54 / 58 dB	54 / 58 dB	53 / 57 dB	52 / 56 dB
Audio Distortion	2	0.90%	0.90%	0.90%	0.90%	0.90%





## IMPRES™ 2 BATTERIES

	Footnote	Part No	Capacity	Availability
Standard	-	NNTN9216	4400 mAh	Included
High Capacity	-	NNTN9089	5650 mAh	Optional
Standard HazLoc	4	NNTN9217	4400 mAh	Optional
High Capacity HazLoc	4	NNTN9090	5650 mAh	Optional

## ENCRYPTION

Supported Encryption Algorithms	ADP, AES, DES, DES-XL, DES-OFB, DVP-XL, Localized Algorithm
Encryption Algorithm Capacity	8
Encryption Keys per Radio	1024 Keys, Programmable for 128 Common Key References (CKR) or 16 Physical Identifiers (PID)
Encryption Keying	Local Key Loader and Over-the-Air Rekeying (OTAR)
Synchronization	XL - Counter Addressing OFB - Output Feedback
Vector Generator	NIST-Approved Random Number Generator
Encryption Type	Digital and SecureNet, TLS1.2, SRTP
Key Storage	Tamper-protected Volatile or Non-volatile Memory
Key Erasure	Keyboard Command and Tamper Detection
Standards	FIPS 140-2 Level 1 and Level 3, FIPS 197
Device Certificates	x.509v3 ECC-P384, x.509v3 RSA-2048
Cipher Suites	ECDHE_ECDSA_WITH_AES256_GCM_SHA384 TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384 TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA TLS_RSA_WITH_AES_256_GCM_SHA384 SRTP_AEAD_AES_256_GCM1

## COLOR

Standard Color	Black/Gray
Optional Side Panel Colors (Supplied as Retro-fit Kits)	Red, Blue, Orange, Public Safety Yellow, High Impact Green, Coyote Brown

## WIRELESS

LTE	
Bands Supported	2, 4, 12, 13, 14
Bands (Hardware Ready)	5, 17
Device Category	4
Certifications	FirstNet®, Verizon, Bell Mobility

WiFi	
Standards Supported	802.11a/b/g/n/ac
Frequency Range	2400-2472, 5180-5825 MHz
Security	Supports WPA-2, WPA, WEP
Capacity	Up to 20 SSIDs

Bluetooth	
Version	5.0
Frequency Range	2402 - 2480 MHz
Security	128-bit AES-CCM Encryption

## AUDIO

Audio Output Power at Rated	3 W
Audio Output Power at Max	5 W
Audio Response (EIA)	+1, -3 dB
Speech Loudness at 12 in (300 mm)	105 Phon
Audio Features	Adaptive Equalization Adaptive Dual-sided Operation Adaptive Noise Suppression Intensity Adaptive Gain Control Adaptive Windporting IMPRES Audio

## LOCATION-TRACKING

	Footnote	
Constellations	-	GNSS (GPS and GLONASS)
Tracking Sensitivity	-	-159 dBm
Accuracy	5	<5m (95%)
Cold Start	5	<60 Seconds (95%)
Hot Start	5	<5 Seconds (95%)
Mode	-	Autonomous (Assisted only with LTE service)

# ENVIRONMENTAL AND REGULATORY

## MIL-STD 810

	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F		MIL-STD 810G/H	
	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	II	500.5	II
High Temperature	501.1	I, II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Hot	501.5	I/A1, II/A1
Low Temperature	502.1	I	502.2	I/C3, II/C1	502.3	I/C3, II/C1	502.4	I/C3, II/C1	502.5	I/C3, II/C1
Temperature Shock	503.1	I	503.2	I/A1, C3	503.3	I/A1, C3	503.4	I	503.5	I/C
Solar Radiation	505.1	II	505.2	I	505.3	I	505.4	I	505.5	I/A1
Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III	506.5	I, III
Humidity	507.1	II	507.2	II	507.3	II	507.4	1 Proc	507.5	II/Aggravated
Salt Fog	509.1	I	509.2	I	509.3	I	509.4	1 Proc	509.5	1 Proc
Blowing Dust	510.1	I	510.2	I	510.3	I	510.4	I	510.5	I
Blowing Sand	1 Proc	1 Proc	510.2	II	510.3	II	510.4	II	510.5	II
Submersion	512.1	I	512.2	I	512.3	I	512.4	I	512.5	I
Vibration	514.2	VIII/F, Curve-W	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24	514.6	I/24
Shock	516.2	I, III, V	516.3	I, V, VI	516.4	I, V, VI	516.5	I, V, VI	516.6	I, V, VI
Shock (Drop)	516.2	II	516.3	IV	516.4	IV	516.5	IV	516.6	IV

## ENVIRONMENTAL

	Footnote	
Operating Temperature	6	-30 to +60 °C (-22 to +140 °F)
Storage Temperature	6	-40 to +85 °C (-40 to +185 °F)
Humidity	-	Per MIL-STD 810
ESD	-	IEC 801 - 2 kV
Dust Resistance	-	IP6X
Water Resistance (Submersion)	-	IPX8 (2 meters, 4 hours) MIL-STD Delta-T, 512.X Procedure 1

### FOOTNOTES:

1. Please refer to local regulations for available channel bandwidths.
2. Measured conductively in analog mode per TIA / EIA 603 under nominal conditions, and at 1 W Rated Audio for Rx. Selectivity measured using the TIA-603 single-tone method.
3. Measured conductively in digital mode per TIA / EIA IS 102.
4. Listed by UL to non-incendive standards: UL 121201 and CAN/CSA C22.2 No. 213-17 as safe for use in Class I, Division 2, Groups A,B,C,D; Class II, Division 2, Groups F,G; Class III Hazardous Locations.
5. Measured conductively with >6 satellites visible at a nominal -130 dBm signal strength. Specs provided are 95th percentile values.

## REGULATORY

FCC ID	AZ489FT7119
IC ID	109U-89FT7119
LMR	8K10F1D, 8K10F1E, 8K10F1W, 11K0F3E, 16K0F3E, 20K0F1E
Bluetooth	1M18G1D, 1M1F1D, 2M1F1D
WiFi	12M9G1D, 16M7D1D, 17M9D1D, 36M2D1D, 17M5D1D, 18M4D1D, 36M8D1D, 76M1D1D
LTE	Band 2 (1850.7 - 1900 MHz), Modulation: *G7D, *D7W Band 4 (1710.7 - 1745 MHz), Modulation: *G7D, *D7W Band 12 (699.7 - 711 MHz), Modulation: *G7D, *D7W Band 14 (790.5 - 793 MHz), Modulation: *G7D, *D7W
All-band Model Number	H55GT9PW8AN
Single-band Model Number	H45GT9PW8AN

6. LMR only. Front display, LTE, WiFi, Bluetooth and GPS not available when radio internal temperature is below -20 °C (-4 °F). Hi-capacity battery required for operation between -20 °C (-4 °F) and -30 °C (-22 °F). Batteries should be charged at 0 to +45 °C (+32 to +113 °F) and stored at +20 to +25 °C (+68 to +77 °F). Reference [motorolasolutions.com/batterycare](http://motorolasolutions.com/batterycare)

All specifications are subject to change without notice. For full details consult product service manual, document no. MN005643A01.



# ACCESSORIES

EXPAND AND CUSTOMIZE YOUR RADIO'S FUNCTIONALITY WITH BEST-IN-CLASS ACCESSORIES.

## AUDIO

HEAR AND BE HEARD LIKE NEVER BEFORE



### XV Remote Speaker Microphone

PMMN4123

- Loudest, clearest speaker
- Four digital microphones
- Enhanced windporting
- New adaptive noise suppression
- Dedicated ViQi button

## ANTENNAS

DESIGNED FOR WEARABILITY



### 7/800 MHz Stubby Antenna 65 mm (760-870 MHz)

AN000296A01



### Whip All-band Antenna 200 mm (V,U,7/800 MHz)

AN000297A01

Colored antenna ID bands are available for easy customization and come in packs of 10.

- 32012144001 Gray
- 32012144004 Blue
- 32012144002 Yellow
- 32012144005 Purple
- 32012144003 Green

## CARRY

SECURE, EASY ACCESS



### Classic Holster

PMLN7947



### Hybrid Leather Carry Case

PMLN7948

Standard Capacity

PMLN7964

High Capacity

## ENERGY

MAXIMIZED POWER, LIFE AND MANAGEMENT



### IMPRES 2 Multi-Unit Charger

NNTN9115



### IMPRES 2 Single-Unit Charger

NNTN9199



### IMPRES 2 Standard Capacity Battery

NNTN9126

4400 mAh

NNTN9127

4400 mAh UL Div 2 (see footnote 4)



### IMPRES 2 High Capacity Battery

NNTN9089

5650 mAh

NNTN9090

5650 mAh UL Div 2 (see footnote 4)

For a complete list of accessories, please visit [motorolasolutions.com/apxnext](https://motorolasolutions.com/apxnext)



# MANAGED AND SUPPORT SERVICES

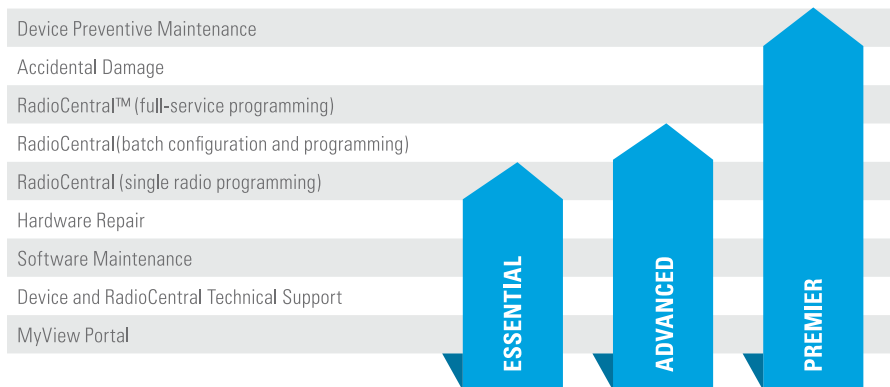
## ACHIEVE MISSION CRITICAL PERFORMANCE

IN PUBLIC SAFETY, FOCUS IS YOUR GREATEST RESOURCE. APX NEXT PROTECTS YOUR FOCUS WHEN IT MATTERS MOST. YOUR MISSION-CRITICAL COMMUNICATIONS DEPEND ON THE CONSISTENT AVAILABILITY OF YOUR RADIOS.

Essential and Advanced Services provide the tools and expert support needed to efficiently manage your radio fleet. With Premier Services, you transfer your APX NEXT two-way radio operations to our managed services professionals who are focused on maximizing performance.

Rely on us to help you achieve your performance targets with the right service level you need for systems, devices and applications. Each package provides a higher level of support, transferring the risk and responsibility to Motorola Solutions.

### SERVICES AT - A - GLANCE



Note:

- Accidental damage can be offered as an add-on service with Essential and Advanced packages.
- Device management training can be offered as an add-on service with all three packages.



## PROTECT YOUR FOCUS WHEN IT MATTERS MOST

For more information, please visit [motorolasolutions.com/apxnext](https://motorolasolutions.com/apxnext)



Motorola Solutions, Inc. 500 West Monroe Street, Chicago, IL 60661 U.S.A. 800-367-2346 [motorolasolutions.com](https://motorolasolutions.com)

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## SOLUTION BRIEF

P25 TDMA FOR ASTRO 25 TRUNKED SYSTEMS



### ASTRO® 25 TRUNKED SYSTEMS

# PROJECT 25 TDMA WITH DYNAMIC DUAL MODE

Improving spectrum efficiency is a critical issue facing government organizations. Agencies want to do more with the spectrum that they have assigned. And government spectrum bodies are mandating that equipment become more spectrum efficient. Project 25 has addressed this new requirement with the Phase 2 TDMA standard.

ASTRO 25 trunked systems are now available with Project 25 standards-based TDMA. This capability provides organizations with the flexibility required to maximize current frequency allocations with a standards-based solution while maintaining interoperability with other Project 25 systems.

## PROJECT 25 TDMA STANDARD

The TIA-102 suite of standards defines Project 25 (P25) TDMA, adding spectrum-efficient TDMA voice service to the existing P25 FDMA trunked voice and packet data services.

P25 TDMA capable systems use the P25 FDMA control channel for all call requests, which allows systems to support FDMA calls as well as TDMA calls.

## ENHANCED INTEROPERABILITY

At the cornerstone of all government communications is the need to interoperate with other users to support emergency response. As the new standard was created, interoperability with existing radios was one of the critical requirements. ASTRO 25 systems and APX subscribers support both P25 FDMA and P25 TDMA for interoperability.

In addition to a manual method for supporting interoperability, which requires the user to manually switch talkgroups on the radio, Motorola delivers seamless interoperability with a software feature called Dynamic Dual Mode that automatically selects what protocol is used based on the resources participating in the call.

## SPECTRUM MANDATES

As part of the ongoing efforts to maximize spectrum, governing bodies are mandating that radio systems must move to 6.25e spectrum-efficient methods. For example, by 2017 the FCC will require 6.25 kHz equivalent operations for 700 MHz band plans.

## SOLUTION BRIEF

### P25 TDMA FOR ASTRO 25 TRUNKED SYSTEMS

## INCREASED VOICE CAPACITY

With P25 TDMA, organizations can double their voice capacity within their fixed allocation of frequencies. For example, they can go from having 5 simultaneous voice calls using P25 FDMA trunked operation to the ability to have up to 10 simultaneous voice calls using P25 TDMA trunked operation. ASTRO 25 TDMA provides the additional advantage of increasing the potential voice path capacity of your system by offering up to 30 voice paths at a site.

### P25 FDMA TRUNKED SYSTEM WITH 5 VOICE CHANNELS

<b>FDMA CONTROL CHANNEL</b>	<b>P25 FDMA VOICE</b>	<b>P25 FDMA VOICE</b>	<b>P25 FDMA VOICE</b>	<b>P25 FDMA VOICE</b>	<b>P25 FDMA VOICE</b>
12.5 kHz	12.5 kHz	12.5 kHz	12.5 kHz	12.5 kHz	12.5 kHz

### EXPAND DATA APPLICATIONS WITH 6 VOICE CHANNELS

<b>ADVANCED FDMA CONTROL CHANNEL</b>	<b>P25 TDMA VOICE</b>	<b>P25 TDMA VOICE</b>	<b>P25 TDMA VOICE</b>	<b>P25 TDMA VOICE</b>	<b>P25 TDMA VOICE</b>	<b>P25 TDMA VOICE</b>	<b>P25 DATA</b>	<b>P25 DATA</b>
12.5 kHz	12.5 kHz	12.5 kHz	12.5 kHz	12.5 kHz	12.5 kHz	12.5 kHz	12.5 kHz	12.5 kHz

### ADDITIONAL CAPACITY FOR APPLICATIONS

Use additional channel capacity afforded by P25 TDMA trunked operation to provide data applications such as OTAR, location service, OTAP and text messaging.

ASTRO 25 is a robust solution for government agencies. P25 TDMA functionality can be added to ASTRO 25 systems along with P25 FDMA trunking and conventional, 3600 trunking, analog conventional, and integrated data operation for total flexibility.

## DYNAMIC DUAL MODE

Dynamic Dual Mode, an optional feature, allows users to interoperate between P25 FDMA and P25 TDMA services. It is part of the call processing application and uses an advanced control channel that dynamically switches call assignments between FDMA and TDMA.

Dynamic Dual Mode is seamless to users and requires no intervention from users or network operators. For example, if a user in an active P25 TDMA talkgroup call, roams onto a P25 FDMA-only site, the system automatically initiates P25 FDMA mode at the next push-to-talk (PTT). Or if an active P25 TDMA talkgroup call is underway at a site and a P25 FDMA-only member of the talkgroup joins (or "affiliates") with the call, the system automatically switches the call to P25 FDMA mode at the next PTT. The FDMA-only user is now included in the call, and the call switched without any user intervention or awareness.

As an added benefit in encrypted systems, the call set-up automatically switches between FDMA and TDMA while maintaining end-to-end encryption. This provides a high level of assurance that the system remains secure from dispatcher to radio user.

## IMPROVED SYSTEM OPERATION

Dynamic Dual Mode improves ease of use in ASTRO 25 systems with a mixed fleet of P25 FDMA and P25 TDMA radios.

- Radio users have seamless interoperability regardless of the operations mode.
- Dispatch operators can automatically coordinate between P25 TDMA radio users and P25 FDMA radio users with no need to track or patch users together.
- System administrators do not need to preassign base stations as P25 TDMA or P25 FDMA; the system automatically assigns the appropriate station mode based on the needs of the user.

## IMPLEMENTATION CONSIDERATIONS

Starting with ASTRO 25 System Release 7.11, P25 TDMA and Dynamic Dual Mode are available in trunked, simulcast and standalone repeater configurations operating in the VHF, UHF, 700 MHz and 800 MHz bands.

On fielded ASTRO 25 systems, key system components including G-series stations, controllers and comparators, the MCC 7500 IP Dispatch Console, and APX™ radios can be software upgraded to P25 TDMA.



The APX series of trunked radios is available with P25 FDMA and P25 TDMA in the same radio. Dynamic Dual Mode automatically switches between the capabilities.

Motorola Solutions, Inc. 1301 E. Algonquin Road, Schaumburg, Illinois 60196 U.S.A. [motorola.com/ASTRO25](http://motorola.com/ASTRO25)

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# APX<sup>®</sup> ALL-BAND CONSOLETTA



Racing to an emergency or repairing a power outage, every moment matters as you mount a response. The right control station can make all the difference in making sure communications are clear, continuous and coordinated – across multiple users, agencies and miles.

The APX All-Band Consolette is the ideal complement to your dispatch console. It's the low cost, mid-power wireless control station for an ASTRO<sup>®</sup> 25 system. You can use it as an emergency backup station when infrastructure is off-line, or for wireless access to different system types for increased interoperability between agencies.





## CONNECT WITH CONFIDENCE

Designed around proven APX technology, the Consolette combines forward-thinking technology with time-tested functionality. Project 25 Phase 2 technology delivers twice the voice capacity so you can add more users without adding more frequencies or infrastructure. Talk with confidence to a squad car or desk station, a job site across town or an incident in the next county.

And with Wi-Fi, the Consolette keeps your team in touch and within reach of over-the-air updates. Receive new codeplugs, firmware updates and software features at the speed of Wi-Fi—without interruptions to voice communication.

## MIGRATE AT YOUR OWN PACE

The APX All-Band Consolette is backwards and forwards compatible, developed to meet current P25 standards and future-ready to support new technology and data applications. Now you can achieve your interoperability objectives—whether upgrading an existing system or designing a new one—based on your dollars and deadlines.

## BUILT FOR THE TOUGHEST TASKS

Innovative design and skillful engineering make the APX All-Band Consolette a tireless performer. The robust metal housing assures extra durability, but allows for easy servicing and programming without removing the lid. An integrated front panel numeric keypad gives you fast access to radio controls. And it meets stringent FCC and UL certifications for exceptional safety.

## ROBUST AND MISSION-READY

When you lose power, count on the automatic battery revert feature to keep your people connected. All you need is a DC source, such as a marine battery, and the Consolette will switch over automatically to keep communications strong.

Rich in features, the APX All-Band Consolette gives you the largest number of interface connections to a wide variety of consoles and desk sets, and easy access to contact information with one unified call list. What's more, an ACIM wireless interface provides back-up dispatch if your console's link to the ASTRO 25 trunked system is ever lost.



## STANDARD FEATURES

Available in 700/800 MHz, VHF or UHF (R1/R2) bands

Optional multiband operation

2000 Channels

Trunking Standards supported:

- Clear or digitally encrypted ASTRO® 25 Trunked Operation
- Capable of SmartZone®, SmartZone Omnilink, SmartNet®

Analog MDC-1200 and Digital APCO P25

Conventional System Configurations

Narrow and wide bandwidth digital receiver (6.25 kHz equivalent/12.5 kHz/30 kHz/25 kHz)\*

Embedded digital signaling (ASTRO and ASTRO 25)

Integrated Encryption Hardware

Seamless Wideband Scan

Intelligent Priority Scan

Intelligent Lighting

Interfaces supported:

- Recorder
- Wireline
- Vehicle Interface Port
- Crosspatch
- Headsets (2)\*\*

110/220 VAC operation with battery revert capability

VU Meter and Clock

Expansion Slot Standard

2 configurations available:

- Full featured front panel
- Limited front panel

Radio Profiles

Unified Call List

Tone remote control

Tactical Inhibit

Instant Recall

ACIM/CCGW interface including:

- ID decode
- Call alert encode

\* Per the FCC Narrowbanding rules, new products submitted for FCC certification after January 1, 2011 are restricted from being granted certification at 25kHz for United States – State & Local Markets only.

\*\* Available on full featured models only.

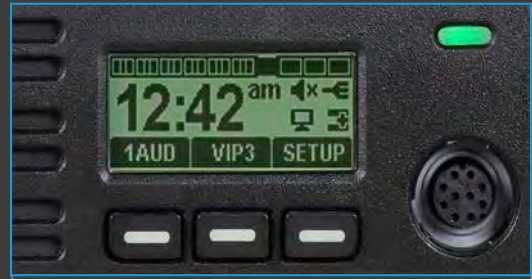


## AUXILIARY DISPLAY FEATURES

LCD display

3 soft menu buttons to activate or control the following Consolette features:

- Clock
- Volume Units Meter (VU)
- Crosspatch Linking
- Auxiliary Controls/VIP Activation
- Over-the-air Audible TX Alert Tones



## OPTIONAL FEATURES

Enhanced Encryption Software Options

Programming over Project 25 (POP25)

Text Messaging

Over the Air Rekeying (OTAR)

Wi-Fi connectivity

Extended Dispatch Operation including:

- Emergency Alarm ACK Encode
- Radio Inhibit/Uninhibit Encode
- Radio Monitor Encode
- Radio Check Encode
- Status Query Encode
- Status Query Response Decode
- Status Update Decode
- Message Update Decode



## E5 CONTROL HEAD FEATURES

Bright color display

- Easy to read 3 line display in various lighting conditions - day or night
- Large tactile knobs and navigation buttons
- 5 programmable menu soft keys and 1 programmable button



## SIGNALING (ASTRO MODE)

Signaling Rate	9.6 kbps
Digital ID Capacity	10,000,000 Conventional / 48,000 Trunking
Digital Network Access Codes	4,096 network site addresses
ASTRO Digital User Group Addresses	4,096 network site addresses
Project 25 – CAI Digital User Group Addresses	65,000 Conventional / 4,094 Trunking
Error Correction Techniques	Golay, BCH, Reed-Solomon codes
Data Access Control	Slotted CSMA: Utilizes infrastructure-sourced data status bits embedded in both voice and data transmissions.

## DIMENSIONS

W x D x H	Limited Front Panel Configuration
	16" x 18" x 4.2" (406 x 457 x 107mm) Full Featured Front Panel Configuration 16" x 18.75" x 4.2" (406 x 476 x 107mm)
Weight	Limited Front Panel Configuration
	18.9 lbs (8.6 kg) Full Featured Front Panel Configuration 19.9 lbs (9.0 kg)

## TRANSMITTER - TYPICAL PERFORMANCE SPECIFICATIONS

	700 MHz		800 MHz		VHF		UHF Range 1		UHF Range 2	
Frequency Range/Bandsplits	764-776 MHz, 794-806 MHz		806-825 MHz, 851-870 MHz		136-174 MHz		380-470 MHz		450-520 MHz	
Channel Spacing	25/20/12.5 kHz		25/20/12.5 kHz		30/25/12.5 kHz		25/20/12.5 kHz		25/20/12.5 kHz	
Maximum Frequency Separation	Full Bandsplit		Full Bandsplit		Full Bandsplit		Full Bandsplit		Full Bandsplit	
Rated RF Output Power <sup>1</sup> (Adjustable)	1-30 Watts		1-35 Watts		1-50 Watts		1-40 Watts (380-470 MHz)		1-45 Watts (450-485 MHz) 1-40 Watts (485-512 MHz) 1-25 Watts (512-520 MHz)	
Frequency Stability <sup>1</sup> (-30°C to +85°C; +25°C Ref.)	±0.8 PPM		±0.8 PPM		±0.8 PPM		±0.8 PPM		±0.8 PPM	
Modulation Limiting <sup>1</sup>	±5/±2.5 kHz		±5/±4 kHz (NPSAPC) /±2.5 kHz		±5/±2.5 kHz		±5/±2.5 kHz		±5/±2.5 kHz	
Modulation Fidelity (C4FM) 12.5kHz Digital Channel	1.10%		1.10%		1.10%		1.10%		1.10%	
Emissions <sup>1</sup>	Conducted -75/-85 dBc	Radiated -20/-40 dBm	Conducted -75 dBc	Radiated -20 dBm	Conducted -85 dBc	Radiated -20 dBm	Conducted -85 dBc	Radiated -20 dBm	Conducted -85 dBc	Radiated -20 dBm
Audio Response <sup>1</sup>	+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)	
FM Hum & Noise <sup>1</sup>	25 kHz 12.5 kHz	50 dB 48 dB	50 dB 48 dB	50 dB 48 dB	53 dB 52 dB	53 dB 50 dB	53 dB 50 dB	53 dB 50 dB	53 dB 50 dB	53 dB 50 dB
Audio Distortion <sup>1</sup>	20 & 25 kHz 12.5 kHz	0.50 % 0.50 %	0.50 % 0.50 %	0.50 % 0.50 %	0.50 % 0.50 %	0.50 % 0.50 %	0.50 % 0.50 %	0.50 % 0.50 %	0.50 % 0.50 %	0.50 % 0.50 %

## RECEIVER – TYPICAL PERFORMANCE SPECIFICATIONS

	700 MHz		800 MHz		VHF		UHF Range 1		UHF Range 2	
Frequency Range/Bandsplits	764-776 MHz		851-870 MHz		136-174 MHz		380-470 MHz		450-520 MHz	
Channel Spacing	25/20/12.5 kHz		25/20/12.5 kHz		30/25/12.5 kHz		25/20/12.5 kHz		25/20/12.5 kHz	
Maximum Frequency Separation	Full Bandsplit		Full Bandsplit		Full Bandsplit		Full Bandsplit		Full Bandsplit	
Audio Output Power (Speaker) at 3% distortion	2.5 W (20 Ω internal) 7.5 W (7.5 Ω) 15 W (2.3 Ω)		2.5 W (20 Ω internal) 7.5 W (7.5 Ω) 15 W (2.3 Ω)		2.5 W (20 Ω internal) 7.5 W (7.5 Ω) 15 W (2.3 Ω)		2.5 W (20 Ω internal) 7.5 W (7.5 Ω) 15 W (2.3 Ω)		2.5 W (20 Ω internal) 7.5 W (7.5 Ω) 15 W (2.3 Ω)	
Frequency Stability <sup>1</sup> (-30°C to +85°C; +25°C Ref.)	±0.8 PPM		±0.8 PPM		±0.8 PPM		±0.8 PPM		±0.8 PPM	
Analog Sensitivity <sup>1</sup>	12 dB SINAD	-121 dBm	-120 dBm	-121 dBm	Pre-Amp -123 dBm	Standard -119 dBm	Pre-Amp -123 dBm	Standard -119 dBm	Pre-Amp -123 dBm	Standard -119 dBm
Digital Sensitivity	5% BER	-121.5 dBm	-120 dBm	-121.5 dBm	-123 dBm	-119 dBm	-123 dBm	-119 dBm	-123 dBm	-119 dBm
Intermodulation	25 kHz 12.5 kHz	85 dB 85 dB	85 dB 85 dB	85 dB 85 dB	84 dB 85 dB	86 dB 86 dB	82 dB 83 dB	86 dB 86 dB	82 dB 83 dB	86 dB 86 dB
Spurious Rejection	100 dB		100 dB		90 dB		90 dB		90 dB	
Audio Response <sup>1</sup>	+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)	
Audio Distortion at rated <sup>1</sup>	1.20 %		1.20 %		1.20 %		1.20 %		1.20 %	
Selectivity <sup>1</sup>	25 kHz 12.5 kHz 30 kHz	82.5 dB 72 dB —	82.5 dB 72 dB —	82.5 dB 72 dB —	87 dB 76 dB 90 dB	82 dB 76 dB —	82 dB 76 dB —	82 dB 76 dB —	82 dB 76 dB —	82 dB 76 dB —

## POWER AND BATTERY DRAIN

Model Type	136-174 MHz, 380-470 MHz, 450-520 MHz, 764-870 MHz					
Minimum RF Power Output	1-35W (764-870 MHz), 1-50W (136-174MHz), 1-40W (380-470 MHz), 1-45W (450-485 MHz), 1-40W (485-512 MHz), 1-25 (512-520 MHz)					
AC Operation	110 to 220VAC 50-60Hz					
AC Current	110VAC: 0.85A (Idle/Rx) 1.7A (Tx) 220VAC: 0.42A (Idle/Rx) 0.85A (Tx)					
AC Surge Spec	EN6100-4-5 Level 5					
DC Operation	13.8V DC ±20% Negative Ground					
Standby at 13.8V	1.4A (764-870 MHz), 1.4A (136-174 MHz), 1.4A (380-470 MHz), 1.4A (450-520 MHz)					
Receive Current at Rated Audio at 13.8V	3.2A (764-870 MHz), 3.2A (136-174 MHz), 3.2A (380-470 MHz), 3.2A (450-520 MHz)					
Transmit Current (A) at Rated Power	136-174 MHz (1-50 W) 380-470 MHz (1-40 W) 450-520 MHz (1-45 W)	15A (50W) 15A (40W) 13A (45W)	8A (15W) 8A (15W) 8A (15W)	764-870 MHz (1-35 Watt)	13A (50W)	8A (15W)

<sup>1</sup> Measured in the analog mode per TIA/EIA 603 under nominal conditions

Specifications subject to change without notice. All specifications shown are typical.

Radio meets applicable regulatory requirements.

The All Band Console is J/F 12 11207 and SPS 22237 certified.

## ENCRYPTION

Supported Encryption Algorithms	ADP, AES, DES, DES-XL, DES-OFB, DVP-XL
Encryption Algorithm Capacity	8
Encryption Keys per Radio	Module capable of storing 1024 keys. Programmable for 128 Common Key Reference (CKR) or 16 Physical Identifier (PID)
Encryption Frame Re-sync Interval	P25 CAI 300 mSec
Encryption Keying	Key Loader
Synchronization	XL – Counter Addressing OFB – Output Feedback
Vector Generator	National Institute of Standards and Technology (NIST) approved random number generator
Encryption Type	Digital
Key Storage	Tamper protected volatile or non-volatile memory
Key Erasure	Keyboard command and tamper detection
Standards	FIPS 140-2 Level 3 FIPS 197

## ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-30°C / +60°C
Storage Temperature	-40°C / +85°C
Humidity	95% relative humidity
ESD	IEC 61000-4-2
Duty Cycle	EIA/TIA Intermittent Duty Cycle

## FCC/IC TYPE ACCEPTANCE ID

FCC/IC ID	BAND AND POWER LEVEL
FCC ID: AZ492FT7089	764-776 MHz (10-30 W)
IC ID: 109U-92FT7089	794-806 MHz (10-30 W)
	806-824 MHz (10-35 W)
	851-870 MHz (10-35 W)
	136-174 MHz (10-50 W and 25-110 W)
	380-470 MHz (10-40 W and 25-110 W)
	450-485 MHz (10-45 W)
	485-512 MHz (10-40 W)
	512-520 MHz (10-25 W)

## WIRELESS CONNECTIVITY

WLAN (Wi-Fi®)	802.11 b/g/n supports WPA-2, WPA, WEP security protocols; radio can be pre-provisioned with up to 20 SSIDs
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For more information, visit [motorolasolutions.com/apx](http://motorolasolutions.com/apx)



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# APX 8500

ALL-BAND P25 MOBILE RADIO



## UNLIMITED MOBILITY. MAXIMUM CONNECTIVITY.

Your next incident doesn't care about frequencies and neither should your first responders. Give them the communication tools to stay connected and stay safe wherever the call takes them. Give them the APX 8500 all-band mobile radio.

The APX 8500 radio enables you to exchange critical voice and data seamlessly with multiple agencies and jurisdictions operating on different radio bands. The available high-power transmitter gives you extraordinary P25 range while the integrated Wi-Fi or tethered

in-vehicle broadband modem can extend communication beyond P25 radio service areas. Offload data to a broadband connection and create a data ecosystem in and around your vehicle. Or, use your broadband connection to send and receive P25 voice and data when outside of P25 coverage. And when your vehicle sustains a high impact, the radio can automatically send an alert to dispatch.

Stay connected and stay safe in more ways than ever with the all-band APX 8500 mobile radio.







## ALL-BAND CONNECTIVITY

### ALL BANDS. NO BOUNDARIES.

With a 4-in-1 mobile radio and an all-band antenna, you now have the ability to stay connected and expand communications across multiple agencies with one device. Extend your reach further with an available high-power transmitter and communicate with widely dispersed teams across different bands.



## BUILT-IN Wi-Fi

### VOICE AND DATA, ALL AT ONCE

Packed with all the connections you need, the APX 8500 keeps your team in touch and within reach of over-the-air updates. Receive new codeplugs, firmware updates and software features at the speed of Wi-Fi— without interruptions to voice communications.



## SMARTCONNECT

### GET CONNECTED AND STAY CONNECTED

When the mission takes you out of range, you risk being left in the dark. The APX 8500, equipped with SmartConnect, can reroute P25 voice and data communication over broadband via built-in Wi-Fi or a tethered LTE/satellite router. Stay connected to your P25 radio system, even when outside of P25 coverage.



RF antenna port

GPS

Wi-Fi

Accessory connector

DC power



### FAST INFORMATION RETRIEVAL

Running routine database queries doesn't need to slow you down. Simply press a button on the keypad microphone and ask ViQi for the information you need. Keep your eyes on the situation and free up dispatchers to focus on more critical events. Move intelligence faster than ever with ViQi.



## DESIGNED TO SECURE AND PROTECT

### KEEP VOICE AND DATA PROTECTED

The APX 8500 secures voice and data using multiple hardware encryption algorithms and the ability to rekey over the air, so it's protected from scanners and eavesdroppers. What's more, P25 Radio Authentication ensures only valid users can access the system while the available two-factor authentication secures database logins.



## DEVICE MANAGEMENT SERVICES

### ALL THE SUPPORT YOU NEED

Motorola Solutions offers three levels of service plans – Essential, Advanced and Premier. From simple support for technical troubleshooting to a complete transfer of optimization and maintenance services to Motorola Solutions, you choose the level of support that suits you best.

## 02 CONTROL HEAD

### EXTREME USABILITY

The 02 control head provides rugged simplicity for efficient and confident communication. Extreme controls with easy to read color display and a built-in 7.5 watt speaker provides clear visual and audible user experiences. Available in high impact green or black.



## 03 HANDHELD CONTROL HEAD

### HANDHELD FLEXIBILITY

The 03 corded control head fits all your mobile controls in your hand. With the 03 your radio controls are never out of reach.



# APX 8500 CONTROL HEADS\*



## E5 CONTROL HEAD

### UNMATCHED READABILITY. OPTIMIZED USABILITY.

A bright color display and intelligent lighting makes the E5 easy to read under any condition while the optimized tactility and button placement reduces inadvertent actuations.

## 07 CONTROL HEAD

### INTEGRATED MULTI-FUNCTIONALITY

The 07 is a sophisticated control head with a color display and built-in keypad. It can integrate your radio vehicle control into a single ergonomic interface and supports dual radio installations.

# FEATURES

## OPERATION MODES

Digital Trunking: 9600 Baud APCO P25 Phase 1 FDMA and Phase 2 TDMA

Digital Conventional: APCO 25

Analog Trunking: 3600 Baud SmartNet, SmartZone, Omnilink

Analog Conventional: MDC 1200

ASTRO® 25 Integrated Voice and Data

SmartConnect Multi-net Connectivity\*

## FREQUENCY BANDS

All-band: Simultaneous Operation in VHF, UHF Range 1, UHF Range 2, 700 and 800 MHz Bands

100 Watt High-Power available in VHF and UHF Range 1 bands (High-Power model only)

Up to 3,000 Channels

## ADDITIONAL CONNECTIVITY

Wi-Fi 802.11 b/g/n\*

Data Modem Tethering\*

SmartConnect\*

## MANAGEMENT

Radio Management

Customer Programming Software

## LOCATION-TRACKING

Integrated GPS/GLONASS for Outdoor Location Tracking

Mission-Critical Geofence\*

## SECURITY

256-bit AES, ADP, DES, DVP\*

FIPS 140-2 Level 3, FIPS 197

P25 Authentication\*

Multikey for 128 keys and Multi-algorithm\*

Over-The-Air-Rekeying (OTAR)\*

## USER INTERFACE

07 Multi Functional Control Head

E5 Enhanced Control Head

03 Handheld Control Head

02 Extreme Usability Control Head

Supports the discontinued 09 Control Head and the 05 Control Head

## OTHER FEATURES

Intelligent Priority Scan

Instant Recall

Impact Detection\*

Intelligent Lighting

Tactical Inhibit\*

Digital Tone Signaling\*

12 Character RFID Asset Tracking\*

ViQi Virtual Partner\*





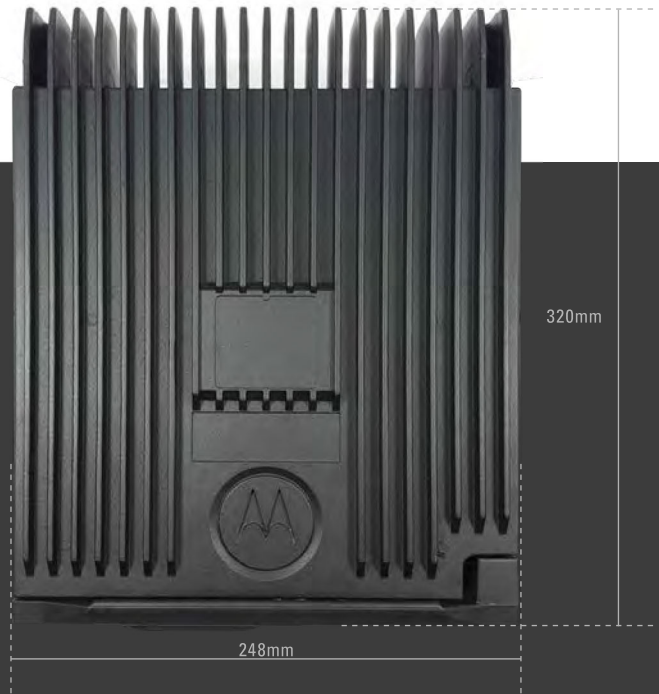


#### DIMENSIONS AND WEIGHT

	Dimensions (H x W x D)	Weight
O7 Control Head - Remote Mount	51 x 178 x 81mm (2.0 x 7.0 x 3.2 in)	-
E5 Control Head - Remote Mount	51 x 178 x 79 mm (2.0 x 7.0 x 3.1 in)	-
O5 Control Head - Remote Mount	51 x 178 x 74 mm (2.0 x 7.0 x 2.9 in)	-
O2 Control Head - Remote Mount	68 x 206 x 96 mm (2.7 x 8.1 x 3.8 in)	-
Mid Power Radio Transceiver and O7 Control Head - Dash Mount	51 x 178 x 256 mm (2.0 x 7.0 x 10.1 in)	3.1 kg (6.8 lbs)
Mid Power Radio Transceiver and E5 Control Head - Dash Mount	51 x 178 x 255 mm (2.0 x 7.0 x 10.0 in)	3.1 kg (6.8 lbs)
Mid Power Radio Transceiver and O5 Control Head - Dash Mount	51 x 178 x 250 mm (2.0 x 7.0 x 9.8 in)	3.1 kg (6.8 lbs)
Mid Power Radio Transceiver and O2 Control Head - Dash Mount	68 x 206 x 271 mm (2.7 x 8.1 x 10.7 in)	3.3 kg (7.23 lbs)
Mid Power Radio Transceiver and Remote Mount	51 x 178 x 232 mm (2.0 x 7.0 x 9.1 in)	2.9 kg (6.4 lbs)
High Power Radio Transceiver and Remote Mount	88 x 248 x 320 mm (3.4 x 9.7 x 12.6 in)	8.0 kg (17.6 lbs)



APX 8500 High-Power Model Shown





# PERFORMANCE AND REGULATORY

TRANSMITTER- TYPICAL PERFORMANCE SPECIFICATIONS										
	VHF		UHF R1		UHF R2		700 MHz		800 MHz	
Frequency Range Band Splits	136-174 MHz		380-470 MHz		450-520 MHz		764-776, 794-806 MHz 806-825, 851-870 MHz		764-776, 794-806 MHz 806-825, 851-870 MHz	
Channel Spacing	30/25/12.5 kHz		25/20/12.5 kHz		25/20/12.5 kHz		25/20/12.5 kHz		25/20/12.5 kHz	
Maximum Frequency Separation	Full Bandsplit		Full Bandsplit		Full Bandsplit		Full Bandsplit		Full Bandsplit	
Rated RF Output Power <sup>1</sup> (Adjustable)	1-50 W (Mid Power) 1-100 W (High Power)		1-40 W (Mid Power) 1-100 W (High Power)		1-45 W (450-485 MHz) 1-40 W (485-512 MHz) 1-25 W (512-520 MHz)		1-30 W		1-35 W	
Frequency Stability <sup>1</sup> (-30°C to +85°C; +25°C Ref.)	±0.8 PPM		±0.8 PPM		±0.8 PPM		±0.8 PPM		±0.8 PPM	
Modulation Limiting	±5/±2.5 kHz		±5/±2.5 kHz		±5/±2.5 kHz		±5/±2.5 kHz		±5/±4 (NPSPEC) /±2.5 kHz	
Modulation Fidelity (C4FM) 12.5 kHz Digital Channel	1.10%		1.10%		1.10%		1.10%		1.10%	
Emissions <sup>1</sup>	Conducted -85 dBc	Radiated -20 dBm	Conducted -85 dBc	Radiated -20 dBm	Conducted -85 dBc	Radiated -20 dBm	Conducted -75/-85 dBc	Radiated -20/-40 dBm	Conducted -75 dBc	Radiated -20 dBm
Audio Response <sup>1</sup>	+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)	
FM Hum & Noise <sup>1</sup> (25 kHz / 12.5 kHz)	53 dB/ 52 dB		53 dB/ 50 dB		53 dB/ 50 dB		50 dB/ 48 dB		50 dB/ 48 dB	
Audio Distortion <sup>1</sup> (25 & 20 kHz / 12.5 kHz)	0.50% / 0.50%		0.50% / 0.50%		0.50% / 0.50%		0.50% / 0.50%		0.50% / 0.50%	

RECEIVER - TYPICAL PERFORMANCE SPECIFICATIONS										
	VHF		UHF R1		UHF R2		700 MHz		800 MHz	
Frequency Range Band Splits	136-174 MHz		380-470 MHz		450-520 MHz		764-776 MHz	799-806 MHz	851-870 MHz	
Channel Spacing	30/20/12.5 kHz		25/20/12.5 kHz		25/20/12.5 kHz		25/20/12.5 kHz		25/20/12.5 kHz	
Minimum Frequency Separation	Full Bandsplit		Full Bandsplit		Full Bandsplit		Full Bandsplit		Full Bandsplit	
Audio Output Power 3% distortion, 8/3.2 Ohm speakers	7.5 W/15 W		7.5 W/15 W		7.5 W/15 W		7.5 W/15 W		7.5 W/15 W	
Frequency Stability <sup>1</sup> (-30 °C to +85 °C; +25 °C Ref.)	±0.8 PPM		±0.8 PPM		±0.8 PPM		±0.8 PPM		±0.8 PPM	
Analog Sensitivity <sup>1</sup> (12 dB SINAD)	Pre-Amp -123 dBm (0.158 µV)	Standard -119 dBm (0.251 µV)	Pre-Amp -123 dBm (0.158 µV)	Standard -119 dBm (0.251 µV)	Pre-Amp -123 dBm (0.158 µV)	Standard -119 dBm (0.251 µV)	-121 dBm (0.199 µV)	-120 dBm (0.224 µV)	-121 dBm (0.199 µV)	
Digital Sensitivity (5% BER)	-123 dBm (0.158 µV)	-119 dBm (0.251 µV)	-123 dBm (0.158 µV)	-119 dBm (0.251 µV)	-123 dBm (0.158 µV)	-119 dBm (0.251 µV)	-123 dBm (0.158 µV)	-120 dBm (0.224 µV)	-121.5 dBm (0.188 µV)	
Intermodulation Rejection (12.5 kHz / 25 kHz)	Pre-Amp 84 dB / 85 dB	Standard 86 dB / 96 dB	Pre-Amp 82 dB / 83 dB	Standard 86 dB / 86 dB	Pre-Amp 82 dB / 83 dB	Standard 86 dB / 86 dB	85 dB / 85 dB		85 dB / 85 dB	
Spurious Rejection	90 dB		90 dB		90 dB		100 dB		100 dB	
Audio Response <sup>1</sup>	+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)	
Audio Distortion at rated <sup>1</sup>	1.20%		1.20%		1.20%		1.20%		1.20%	
Selectivity <sup>1</sup> (12.5 kHz / 25 kHz / 30 kHz)	76 dB 87 dB 90 dB		76 dB 82 dB -		76 dB 82 dB -		72 dB 82.5 dB -		72 dB 82.5 dB -	

POWER AND BATTERY DRAIN					
	VHF	UHF R1	UHF R2	700 MHz	800 MHz
Frequency Range Band Splits	136-174 MHz	380-470 MHz	450-520 MHz	764-775, 794-806 MHz	806-825, 851-870 MHz
RF Power Output	1-50 W (mid-power) 1-100 W (high-power)	10-40 W (mid-power) 1-100 W (high-power)	1-45 W (450-485 MHz) 1-40 W (485-512 MHz) 1-25 W (512-520 MHz)	1-33 W	1-35 W
Operation	13.8 V DC ±20% Negative Ground	13.8 V DC ±20% Negative Ground	13.8 V DC ±20% Negative Ground	13.8 V DC ±20% Negative Ground	13.8 V DC ±20% Negative Ground
Standby at 13.8 V	1.4 A	1.4 A	1.4 A	1.4 A	1.4 A
Receive Current at Radio Audio at 13.8 V	3.2 A	3.2 A	3.2 A	3.2 A	3.2 A
Transmit Current at Rated Power (mid-power)	8 A @ 15 W 15 A @ 50 W	8 A @ 15 W 15 A @ 40 W	8 A @ 15 W 13 A @ 45 W	8 A @ 15 W 13 A @ 33 W	8 A @ 15 W 13 A @ 33 W
Transmit Current at Rated Power (high-power)	8 A @ 15 W 30 A @ 100 W	8 A @ 15 W 30 A @ 100 W	-	-	-

### LOCATION - TRACKING

Channels	12
Tracking Sensitivity	-164 dBm
Accuracy <sup>2</sup>	<5 meters (95%)
Cold Start	<60 seconds (95%)
Hot Start	<5 seconds (95%)
Mode of Operation	Autonomous (Non-Assisted) GNSS or SBAS

### FCC/IC TYPE ACCEPTANCE

FCC/IC ID	Band and Power Level
FCC ID: AZ492FT7089 IC ID: 109U-92FT7089	764-776 MHz (10-30 W)
	794-806 MHz (10-30 W)
	806-824 MHz (10-35 W)
	851-870 MHz (10-35 W)
	136-174 MHz (10-50 W)
	380-470 MHz (10-40 W)
	450-485 MHz (10-45 W)
	485-512 MHz (10-40 W)
	512-520 MHz (10-25 W)
	FCC ID: AZ492FT7118 IC: N/A
380-470 MHz (1-100 W)	

### ENCRYPTION

Supported Encryption Algorithms	256-bit AES, ADP, DES, DES-XL, DES-OFB, DVP-XL
Encryption Algorithm Capacity	8
Encryption Keys per Radio	Module capable of storing 1024 keys. Programmable for 128 Common Key Reference (CKR) or 16 Physical Identifier (PID)
Encryption Frame Re-sync Interval	P25 CAI 300 mSec
Encryption Keying	Key Loader
Synchronization	XL – Counter Addressing OFB – Output Feedback
Vector Generator	National Institute of Standards and Technology (NIST) approved random number generator
Encryption Type	Digital
Key Storage	Tamper protected volatile or non-volatile memory
Key Erasure	Keyboard command and tamper detection
Standards	FIPS 140-2 Level 3, FIPS 197

### ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-30°C/+60°C
Storage Temperature	-40°C/+85°C
Humidity	Per MIL-STD
ESD	IEC 801-2 KV
Water & Dust Intrusion	IP56

<sup>1</sup> Measured in the analog mode per TIA / EIA 603 single-tone method under nominal conditions  
<sup>2</sup> Measured conductivity with >6 satellites visible at a nominal -130 dBm signal strength.





**MOBILE MILITARY STANDARDS 810, C, D, E, F & G**

	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F		MIL-STD 810G	
	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	I/II	500.5	II
High Temperature	501.1	I, II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Hot	501.5	I/A1, II/A1
Low Temperature	502.1	I	502.2	I/C3, II/C1	502.3	I/C3, II/C1	502.4	I/C3, II/C1	502.5	I/C3, II/C1
Temperature Shock	503.1	I Proc	503.2	1/A1C3	503.3	1/A1C3	503.4	I	503.5	I/C
Solar Radiation	505.1	II	505.2	I	505.3	I	505.4	I	505.5	I/A1
Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III	506.5	I, III
Humidity	507.1	II	507.2	II	507.3	II	507.4	I Proc	507.5	II/Aggravated
Salt Fog	509.1	I Proc	509.2	I Proc	509.3	I Proc	509.4	I Proc	509.5	I Proc
Blowing Dust	510.1	I	510.2	I, II	510.3	I, II	510.4	I, II	510.5	I, II
Vibration	514.2	VIII/F, Curve-W	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24	514.6	I/24
Shock	516.2	I, III, V	516.3	I, V, VI	516.4	I, V, VI	516.5	I, V, VI	516.6	I, V, VI

For more information, please visit us on the web at: [www.motorolasolutions.com/APX](http://www.motorolasolutions.com/APX)



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# APX 6500

SINGLE-BAND P25 MOBILE RADIO



## STAY INFORMED. STAY SAFE.

You may not know what the next call will entail, but you do know that your team needs communication they can count on. Whether on a motorcycle, in a squad car or a fire truck, the rugged and compact design of the evolved APX™ 6500 mobile radio is designed to maximize the real estate in your vehicle and keep your entire agency safely connected. Now with integrated Wi-Fi and SmartConnect, the APX 6500 gives you more ways to manage your radio and stay connected. And when your vehicle sustains a high impact, the radio can automatically alert dispatch.

Security is more important than ever. Criminals are testing you on the streets and over the air. Fight back with multiple levels of protection to encrypt and secure your voice and data communication against eavesdropping.

Stay connected, keep safe and secure your communications with the APX 6500 single-band mobile radio.







### GET CONNECTED AND STAY CONNECTED

When the mission takes you out of range, you risk being left in the dark. The APX 6500, equipped with SmartConnect, can reroute P25 voice and data communication over broadband via built-in Wi-Fi or a tethered LTE/satellite router. Stay connected to your P25 radio system, even when outside of P25 coverage.



### VOICE AND DATA, ALL AT ONCE

Packed with all the connections you need, the APX 6500 keeps your team in touch and within reach of over-the-air updates. Receive new codeplugs, firmware updates and software features at the speed of Wi-Fi— without interruptions to voice communications.



### FAST INFORMATION RETRIEVAL

Running a routine database queries doesn't need to slow you down. Simply press a button on the keypad microphone and ask ViQi for the information you need. Keep your eyes on the situation and free up dispatchers to focus on more critical events. Move intelligence faster than ever with ViQi.



### KEEP VOICE AND DATA PROTECTED

The APX 6500 secures voice and data using multiple hardware encryption algorithms and the ability to rekey over the air, so it's protected from scanners and eavesdroppers. What's more, P25 Radio Authentication ensures only valid users can access the system while the available two-factor authentication secures database logins.



### FLEXIBLE, EASY INSTALLATION

The small and light form-factor of the APX 6500 allows for easy installation across a growing ecosystem of vehicles and installations. Users can choose one of several interchangeable control heads to best fit their need. Dual control head configuration enables radio operation from multiple locations within the same vehicle, such as a large fire truck.



### ALL THE SUPPORT YOU NEED

Motorola Solutions offers three levels of service plans – Essential, Advanced and Premier. From simple support for technical troubleshooting to a complete transfer of optimization and maintenance services to Motorola Solutions, you choose the level of support that suits you best.

## 02 CONTROL HEAD

### EXTREME USABILITY

The 02 control head provides rugged simplicity for efficient and confident communication. Extreme controls with easy to read color display and a built-in 7.5 watt speaker provides clear visual and audible user experiences. Available in high impact green or black.



## 03 HANDHELD CONTROL HEAD

### HANDHELD FLEXIBILITY

The 03 corded control head fits all your mobile controls in your hand. With the 03 your radio controls are never out of reach.



# APX 6500 COMPATIBLE CONTROL HEADS\*



## E5 CONTROL HEAD

### UNMATCHED READABILITY. OPTIMIZED USABILITY.

A bright color display and intelligent lighting makes the E5 easy to read under any condition while the optimized tactility and button placement reduces inadvertent actuations.

## 07 CONTROL HEAD

### INTEGRATED MULTI-FUNCTIONALITY

The 07 is a sophisticated control head with a color display and built-in keypad. It can integrate your radio vehicle control into a single ergonomic interface and supports dual radio installations.



# FEATURES

## GENERAL FEATURES

Channel Capacity	1,000 channels standard, expandable to 3,000 channels
Wireless Connectivity	GPS/GLONASS, Wi-Fi
WLAN (Wi-Fi) Protocols	802.11 b/g/n (2.4GHz) 802.11 a/n/ac (5GHz)
Encryption Algorithms	256-bit AES, ADP, DES, DES-XL, DES-OFB, DVP-XL

## OPERATING MODES

Digital Trunking: 9600 Baud APCO P25 Phase 1 FDMA and Phase 2 TDMA
Analog Trunking: 3600 Baud SmartNet®, SmartZone®, Omnilink
Digital Conventional: APCO 25
Analog Conventional: Analog MDC 1200, Quik Call II System Configurations
SmartConnect Connectivity

## INTEGRATED WI-FI, GPS AND DATA CONNECTIVITY

Wi-Fi 802.11 b/g/n with up to 20 Wi-Fi networks provisioned in the radio <sup>1</sup>
Data Modem Tethering <sup>1</sup>
ASTRO 25 Integrated Voice and Data
Enhanced Data <sup>1</sup>
Integrated GPS/GLONASS for Outdoor Location Tracking
Mission Critical Geofence <sup>1</sup>
Personnel Accountability <sup>1</sup>
SmartConnect <sup>1</sup>
ViQi Virtual Partner <sup>1</sup>

## MANAGEMENT

Customer Programming Software (CPS)
Radio Management
Over-the-air Programming (OTAP) <sup>1</sup>

## SECURITY

Tactical Inhibit <sup>1</sup>
P25 Authentication <sup>1</sup>
Software Key <sup>1</sup>
Single-key ADP Encryption <sup>1</sup>
Multikey for 128 keys and multi-algorithm <sup>1</sup>
Over-the-air Rekeying (OTAR) <sup>1</sup>

## GPS/GNSS SPECIFICATIONS

Channels	12
Tracking Sensitivity	-164 dBm
Accuracy <sup>2</sup>	<5 meters (95%)
Cold Start <sup>2</sup>	<60 seconds (95%)
Hot Start <sup>2</sup>	<5 seconds (95%)
Mode of Operation	Autonomous (Non-Assisted) GNSS or SBAS

<sup>1</sup> Optional    <sup>2</sup> Measured conductively with >6 satellites visible at a nominal -130 dBm signal strength





### ENCRYPTION

Supported Encryption Algorithms	ADP, AES, DES, DES-XL, DES-OFB, DVP-XL
Encryption Algorithm Capacity	8
Encryption Keys per Radio	Module capable of storing 1024 keys. Programmable for 128 Common Key Reference (CKR) or 16 Physical Identifier (PID)
Encryption Frame Re-sync Interval	P25 CAI 300 mSec
Encryption Keying	Key Loader
Synchronization	XL – Counter Addressing   OFB – Output Feedback
Vector Generator	National Institute of Standards and Technology (NIST) approved random number generator
Encryption Type	Digital
Key Storage	Tamper protected volatile or non-volatile memory
Key Erasure	Keyboard command and tamper detection
Standards	FIPS 140-2 Level 3, FIPS 197

### OTHER FEATURES

Text Messaging
Radio Profiles
Dynamic Zone
Intelligent Priority Scan
Unified Call List
Instant Recall
Data Modem Connection (wired or Wi-Fi) <sup>1</sup>
12 Character RFID Asset Tracking <sup>1</sup>
Digital Tone Signaling <sup>1</sup>

### INTEGRATED WI-FI, GPS AND DATA CONNECTIVITY

Frequency Range/Band splits	WLAN (Wi-Fi): 2412 - 2472 MHz; 5180 - 5320 MHz; 5500 - 5825 MHz	
WLAN (WiFi) 802.11 b/g/n (2.4GHz) 802.11 a/n/ac (5GHz)	Security protocols	WPA-2, WPA, WEP
	SSIDs	Up to 20 pre-provisioned
Integrated GPS/GLONASS for outdoor location tracking		
Data Modem Tethering <sup>1</sup>		

### SIGNALING (ASTRO 25 MODE)

Signalling Rate	9.6 kbps
Digital ID Capacity	10,000,000 Conventional / 48,000 Trunking
Digital Network Access Codes	4,096 network site addresses
ASTRO Digital User Group Addresses	4,096 network site addresses
Project 25 – CAI Digital User Group Addresses	65,000 Conventional / 4,094 Trunking
Error Correction Techniques	Golay, BCH, Reed-Solomon codes
Data Access Control	Slotted CSMA: Utilizes infrastructure-sourced data status bits embedded in both voice and data transmissions

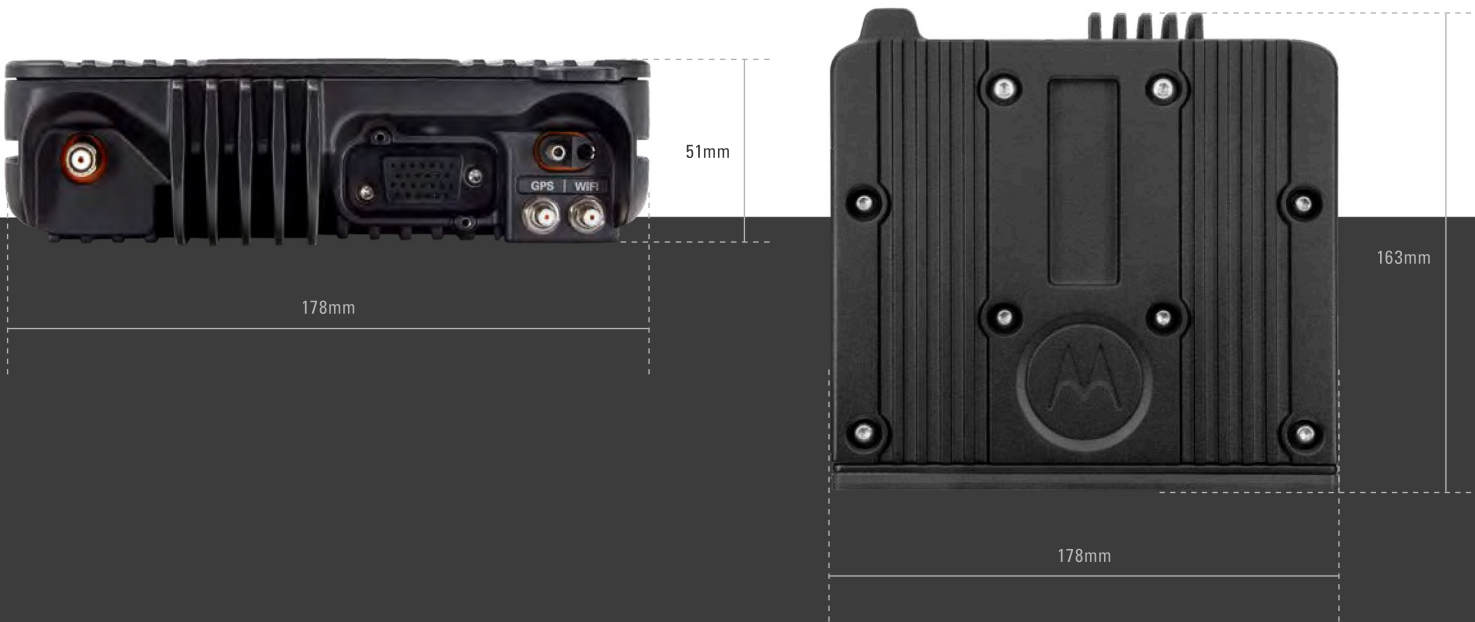
<sup>1</sup> Optional





#### DIMENSIONS AND WEIGHT

Radio Transceiver	51 x 178 x 163 mm (2.0 x 7.0 x 6.4 in)	2.18 kg (4.80 lbs)
Radio Transceiver and O2 Control Head - Dash Mount	69 x 207 x 223 mm (2.7 x 8.1 x 8.8 in)	2.43 kg (5.36 lbs)
Radio Transceiver and O5 Control Head - Dash Mount	51 x 178 x 202 mm (2 x 7 x 8.0 in)	2.24 kg (4.94 lbs)
Radio Transceiver and E5 Control Head - Dash Mount	51 x 178 x 209 mm (2.0 x 7.0 x 8.2 in)	2.24 kg (4.94 lbs)
Radio Transceiver and O7 Control Head - Dash Mount	51 x 178 x 208 mm (2 x 7 x 8.2 in)	2.24 kg (4.94 lbs)
Radio Transceiver and Remote Mount	51 x 178 x 193.6 mm (2 x 7 x 7.6 in)	2.18 kg (4.80 lbs)
O2 Control Head Remote Mount	68 x 206 x 53 mm (2.7 x 8.1 x 2.1 in)	-
O5 Control Head Remote Mount	51 x 180.3 x 64 mm (2.0 x 7.0 x 2.5 in)	-
E5 Control Head Remote Mount	51 x 178.5 x 64 mm (2.0 x 7.0 x 2.5 in)	-
O7 Control Head Remote Mount	51 x 178 x 40 mm (2.0 x 7.0 x 1.5 in)	-



# PERFORMANCE AND REGULATORY

TRANSMITTER								
	VHF		UHF R1		700 MHz		800 MHz	
Frequency Range/Bandsplits	136-174 MHz		380-470 MHz		764-776, 794-806 MHz		806-825, 851-870 MHz	
Rated RF Output Power (Adjustable)	1-50 W		1-40 W		3-30 W		3-35 W	
Frequency Stability (-30°C to +60°C; +25°C Ref.)	± 0.8 PPM		±0.8 PPM		±0.8 PPM		±0.8 PPM	
Emissions	Conducted -85 dBc	Radiated -10 dBm	Conducted -85 dBc	Radiated -20 dBm	Conducted -75/-85 dBc	Radiated -20/-40 dBm	Conducted -75 dBc	Radiated -20 dBm
Modulation Limiting (12.5/20/25 kHz)	±5/±2.5 kHz		±5/±2.5kHz		±5/±2.5 kHz		±5/±2.5 kHz	
Modulation Fidelity (C4FM) 12.5 kHz Digital Channel	2.5%		1.50%		1.50%		1.50%	
Audio Response	+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)	
FM Hum & Noise (12.5 kHz/25 kHz)	-52 dB / -53 dB		-50 dB / -53 dB		-48 dB / -50 dB		-48 dB / -50 dB	
Audio Distortion (12.5 kHz/25 kHz)	0.50%		0.50%		0.50% / 0.50%		0.50% / 0.50%	

RECEIVER								
	VHF		UHF R1		700 MHz		800 MHz	
Frequency Range/Bandsplits	136-174 MHz		380-470 MHz		764-776 MHz		851-870 MHz	
Channel Spacing	12.5/25 kHz		12.5/25 kHz		12.5/25 kHz		12.5/25 kHz	
Maximum Frequency Separation	Full Bandsplit		Full Bandsplit		Full Bandsplit		Full Bandsplit	
Audio Output Power at Rated/Max	7.5 / 15 W		7.5 / 15 W		7.5 / 15 W		7.5 / 15 W	
Frequency Stability (-30 °C to +60 °C; +25 °C Ref.)	±0.8 PPM		±0.8 ppm		±0.8 ppm		±0.8 ppm	
Analog Sensitivity (12db SINAD)	Pre-Amp -123 dBm (0.158µV)	Standard -119 dBm (0.251µV)	Pre-Amp -123 dBm (0.158µV)	Standard -119 dBm (0.251µV)	-121 dB (0.199 µV)		-121 dB (0.199 µV)	
5% BER	Pre-Amp -123 dBm (0.158µV)	Standard -119 dBm (0.251µV)	Pre-Amp -123 dBm (0.158µV)	Standard -119 dBm (0.251µV)	-121.5 dB (0.188 µV)		-121.5 dB (0.188 µV)	
Selectivity (12.5 kHz / 25 kHz / 30 kHz)	77 dB / 89 dB / 90 dB		72 dB / 83 dB / -		75 dB / 85 dB / -		75 dB / 85 dB / -	
Intermodulation Rejection	Pre-Amp 84dB / 84 dB	Standard 86 dB / 86 dB	Pre-Amp 82 dB / 82dB	Standard 86 dB / 86 dB	82 dB / 82 dB		82 dB / 82 dB	
Spurious Rejection	95 dB		93 dB		91 dB		91 dB	
FM Hum & Noise (12.5 kHz / 25 kHz)	-50 dB / -59 dB		-50 dB / -55 dB		-50 dB / -59 dB		-50 dB / -59 dB	
Audio Distortion (12.5 kHz / 25 kHz)	1.2 %		1.5%		1.2 %		1.2 %	

POWER AND BATTERY DRAIN								
	VHF		UHF R1		700 MHz		800 MHz	
Frequency Range / Bandsplits	136-174 MHz		380-470 MHz		764-775, 794-806 MHz		806-825, 851-870 MHz	
RF Power Output	1-50 W		1-40 W		3-30 W		3-35 W	
Operation	13.8V DC ±20% Negative Ground		13.8V DC ±20% Negative Ground		13.9V DC ±20% Negative Ground		13.9V DC ±20% Negative Ground	
Standby at 13.8V	0.85A		0.85A		0.85A		0.85A	
Receive Current at Rated Audio at 13.8V	3.2A		3.2A		3.2A		3.2A	
Transmit Current (A) at Rated Power	8 A @ 15 W 13 A @ 50 W		11 A @ 40 W 8A @ 15 W		8 A @ 15 W		8 A @ 15 W 12 A @ 35 W	

ENVIRONMENTAL	
Operating Temperature	-30°C/+60°C
Storage Temperature	-40°C/+85°C
Humidity	Per MIL-STD
ESD	IEC 61000-4-2
Water and Dust Intrusion (w/ O2 control head)	IP56, MIL-STD

RADIO MODEL NUMBER	
700/800 MHz	M25URS9PW1BN
VHF	M25KSS9PW1BN
UHF R1	M25QSS9PW1BN

FCC/IC TYPE ACCEPTANCE ID	
FCC/IC ID	Band and Power Level
FCC ID: AZ492FT7124 IC ID: 109U-92FT7124	764-776 MHz (3-30 W)
	794-806 MHz (3-30 W)
	806-824 MHz (3-35 W)
	851-870 MHz (3-35 W)
FCC ID: AZ492FT7130 IC ID: 109U-92FT7130	136-174 MHz (1-50 W)
FCC ID: AZ492FT7129 IC ID: 109U-92FT7129	380-470 MHz (1-40 W)



**MOBILE MILITARY STANDARDS 810, C, D, E, F, G & H**

	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F		MIL-STD 810G		MIL-STD 810H	
	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	I/II	500.6	II	500.6	II
High Temperature	501.1	I, II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Hot	501.6	I/A1, II/A1	501.7	I/A1, II/A1
Low Temperature	502.1	I	502.2	I/C3, II/C1	502.3	I/C3, II/C1	502.4	I/C3, II/C1	502.6	I/C3, II/C1	502.7	I/C3, II/C1
Temperature Shock	503.1	I	503.2	1/A1C3	503.3	1/A1C3	503.4	I	503.6	I/C	503.7	I/C
Solar Radiation	505.1	II	505.2	I	505.3	I	505.4	I	505.6	I/A1	505.7	I/A1
Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III	506.6	I, III	506.6	I, III
Humidity	507.1	II	507.2	II	507.3	II	507.4	-	507.6	II/Aggravated	507.6	II/Aggravated
Salt Fog	509.1	I	509.2	I	509.3	I	509.4	-	509.6	-	509.7	-
Blowing Dust	510.1	I	510.2	I	510.3	I	510.4	I	510.6	I	510.7	I
Blowing Sand	-	-	510.2	II	510.3	II		II	510.6	II	510.7	II
Vibration	514.2	VIII, F, W	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24	514.7	I/24	514.8	I/24, II/5
Shock	516.2	I, III, V	516.3	I, V, VI	516.4	I, V, VI	516.5	I, V, VI	516.7	I, V, VI	516.8	I, V, VI

For more information, please visit  
[www.motorolasolutions.com/apx](http://www.motorolasolutions.com/apx)







# APX 4500

**SINGLE-BAND P25 MOBILE RADIO**



## UNCOMPROMISING PERFORMANCE. EFFECTIVE RESPONSE.

You need a P25 radio to communicate and collaborate effectively with other P25 radio users. And, you need the performance and reliability of an APX™ radio. That is why we built the APX 4500 single-band mobile radio.

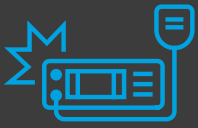
Everyone has something to like with the APX 4500. We've paired it with our rugged O2 Control Head for confident, reliable radio communication that can stand up to everyday use.

The compact form factor simplifies vehicle installation. Integrated hardware encryption protects your mission-critical communication. Impact detection automatically alerts dispatch to keep its users safer and integrated Wi-Fi helps to keep you current with fast and easy software updates.

Improve your operational efficiency with the performance and reliability of the APX 4500 mobile radio.







## RUGGED AND RELIABLE

### RESPOND WITH CONFIDENCE

When out in the field, you face all types of conditions. Your radio shouldn't hold you back. Whether it be getting caught in a storm or undergoing extreme temperature shock, you can remain confident in the APX 4500 and know that it won't let you down in the moments that matter.



## BUILT-IN Wi-Fi

### VOICE AND DATA, ALL AT ONCE

Integrated Wi-Fi helps to keep your radio update to date with over-the-air updates. Receive new codeplugs, firmware updates and software features at the speed of Wi-Fi— without interruptions to voice communications.



## LIGHTWEIGHT, COMPACT DESIGN

### FLEXIBLE, EASY INSTALLATION

The APX 4500 is ideal for a growing ecosystem of vehicle installations. Its small and lightweight form factor simplifies installation and its IP56 rating provides ample protection from dust and water intrusion.



## P25 COLLABORATION

### COLLABORATE SEAMLESSLY

Although you are out of the office, you still need to communicate with others to get the job done. As a P25 mobile radio, the APX 4500 allows you to communicate with other P25 radio users. Seamlessly collaborate within your department or with other departments and organizations using the APX 4500 P25 mobile radio.



## DEVICE MANAGEMENT SERVICES

### ALL THE SUPPORT YOU NEED

Motorola Solutions offers three levels of service plans – Essential, Advanced and Premier. From simple support for technical troubleshooting to a complete transfer of optimization and maintenance services to Motorola Solutions, you choose the level of support that suits you best.

# APX 4500 COMPATIBLE CONTROL HEAD

## O2 CONTROL HEAD

### EXTREME USABILITY

The O2 control head provides rugged simplicity for efficient and confident communication. Oversized controls with an easy to read color display and a built-in 7.5 watt speaker provides clear visual and audible user experiences. Available in high impact green or black.



Exaggerated design and rugged housing for extreme environments

Full color display with night mode and intelligent lighting

Integrated high density speaker for loud, clear audio



Programmable multi-select buttons

Enlarged multi-function channel / volume knob



# FEATURES

## GENERAL SPECIFICATIONS

Channel Capacity	512 standard, expandable to 1,000 channels
Wireless Connectivity	GPS/GLONASS, Wi-Fi
WLAN (Wi-Fi) Protocols	802.11 b/g/n (2.4GHz) / 802.11 a/n/ac (5GHz)
Encryption Algorithms	ADP, 256-bit AES

## OPERATING MODES

Digital Trunking: 9600 Baud APCO P25 Phase 1 FDMA and Phase 2 TDMA
Analog Trunking: 3600 Baud SmartNet®, SmartZone®, Omnilink
Digital Conventional: APCO 25
Analog Conventional: Analog MDC 1200, Quik Call II System Configurations

## INTEGRATED Wi-Fi AND DATA CONNECTIVITY

Wi-Fi (2.4GHz), 802.11 a/n/ac (5GHz) with up to 20 Wi-Fi networks provisioned in the radio <sup>1</sup>
Data Modem Tethering <sup>1</sup>
ASTRO 25 Integrated Voice and Data
Enhanced Data <sup>1</sup>
Integrated GPS/GLONASS for Outdoor Location Tracking
Mission Critical Geofence <sup>1</sup>
Personnel Accountability <sup>1</sup>

## MANAGEMENT

Customer Programming Software (CPS)
Radio Management
Over-the-air Programming (OTAP) <sup>1</sup>

## SECURITY

P25 Authentication <sup>1</sup>
Software Key
Single-key ADP Encryption <sup>1</sup>
Multikey for 128 keys <sup>1</sup>

## GPS/GNSS SPECIFICATIONS

Channels	12
Tracking Sensitivity	-164 dBm
Accuracy <sup>2</sup>	<5 meters (95%)
Cold Start <sup>2</sup>	<60 seconds (95%)
Hot Start <sup>2</sup>	<5 seconds (95%)
Mode of Operation	Autonomous (Non-Assisted) GNSS or SBAS

<sup>1</sup> Optional    <sup>2</sup> Measured conductively with >6 satellites visible at a nominal -130 dBm signal strength





### ENCRYPTION

Supported Encryption Algorithms	ADP, AES 256
Encryption Algorithm Capacity	8
Encryption Keys per Radio	Module capable of storing 1024 keys. Programmable for 128 Common KeY Reference (CKR) or 16 PhysicalIdentifier (PID)
Encryption Frame Re-sync Interval	P25 CAI 300 mSec
Encryption Keying	Key Loader
Synchronization	XL – Counter Addressing   OFB – Output Feedback
Vector Generator	National Institute of Standards and Technology (NIST) approved random number generator
Encryption Type	Digital
Key Storage	Tamper protected volatile or non-volatile memory
Key Erasure	Keyboard command and tamper detection
Standards	FIPS 140-2 Level 3, FIPS 197

### OTHER FEATURES

Text Messaging
Radio Profiles
Dynamic Zone
Intelligent Priority Scan
Unified Call List
Instant Recall
Data Modem Connection (wired or Wi-Fi) <sup>1</sup>
12 Character RFID Asset Tracking <sup>1</sup>
Digital Tone Signaling <sup>1</sup>

### INTEGRATED WI-FI, GPS AND DATA CONNECTIVITY

Frequency Range/Band splits	WLAN (WiFi): 2412 - 2472 MHz; 5180 - 5320 MHz; 5500 - 5825 MHz	
WLAN (WiFi) 802.11 b/g/n	Security protocols	WPA-2, WPA, WEP
	SSIDs	Up to 20 pre-provisioned
Integrated GPS/GLONASS for outdoor location tracking		
Data Modem Tethering <sup>1</sup>		

<sup>1</sup> Optional



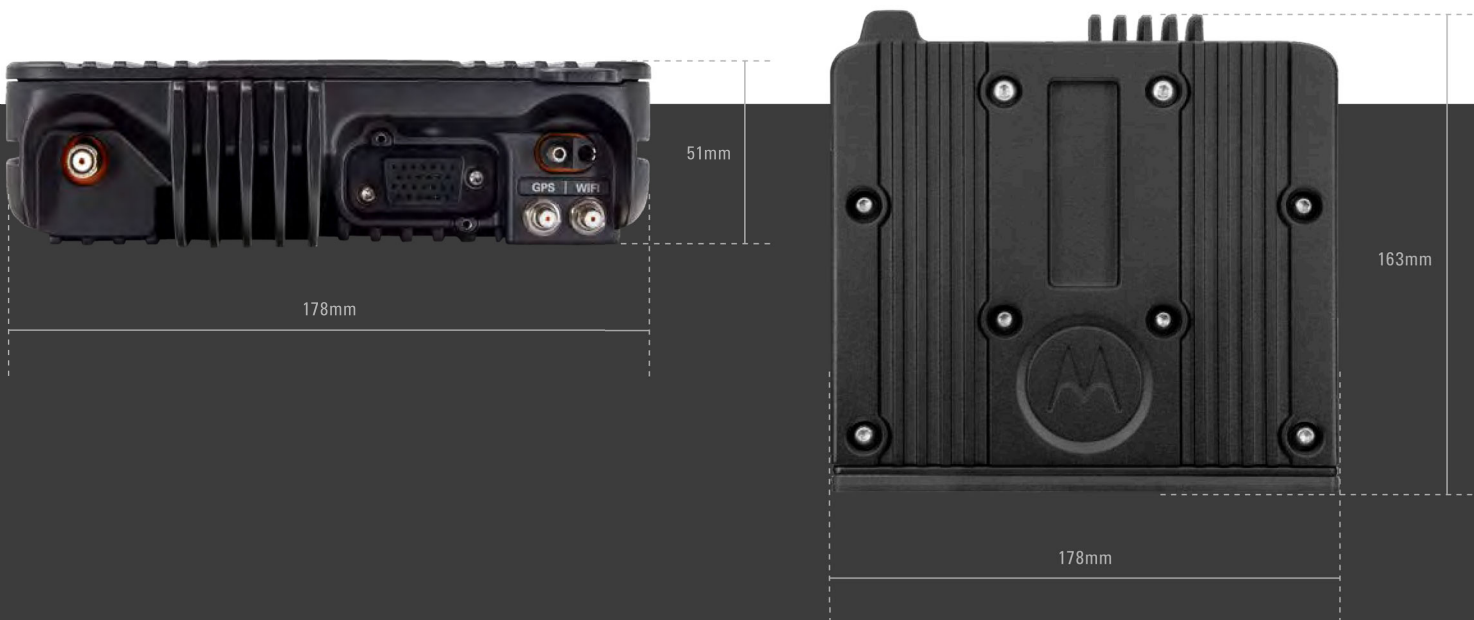


### SIGNALING (ASTRO 25 MODE)

Signalling Rate	9.6 kbps
Digital ID Capacity	10,000,000 Conventional / 48,000 Trunking
Digital Network Access Codes	4,096 network site addresses
ASTRO Digital User Group Addresses	4,096 network site addresses
Project 25 – CAI Digital User Group Addresses	65,000 Conventional / 4,094 Trunking
Error Correction Techniques	Golay, BCH, Reed-Solomon codes
Data Access Control	Slotted CSMA: Utilizes infrastructure-sourced data status bits embedded in both voice and data transmissions

### DIMENSIONS AND WEIGHT

Mid Power Radio Transceiver	51 x 178 x 163 mm (2.0 x 7.0 x 6.4 in)	2.18 kg (4.80 lbs)
Radio Transceiver and O2 Control Head - Dash Mount	69 x 207 x 223 mm (2.7 x 8.1 x 8.8 in)	2.43 kg (5.36 lbs)
Mid Power Radio Transceiver and Remote Mount	51 x 178 x 193 mm (2.0 x 7.0 x 7.6 in)	2.18 kg (4.80 lbs)



# PERFORMANCE AND REGULATORY

## TRANSMITTER

	VHF		UHF R1		700 MHz		800 MHz	
Frequency Range/Bandsplits	136-174 MHz		380-470 MHz		764-776, 794-806 MHz		806-825, 851-870 MHz	
Rated RF Output Power (Adjustable)	1-50 W		1-40 W		3-30 W		3-35 W	
Frequency Stability (-30°C to +60°C; +25°C Ref.)	±0.8 PPM		±0.8 PPM		±0.8 PPM		±0.8 PPM	
Emissions	Conducted -85 dBc	Radiated -20 dBm	Conducted -85 dBc	Radiated -20 dBm	Conducted -75/-85 dBc	Radiated -20/-40 dBm	Conducted -75 dBc	Radiated -20 dBm
Modulation Limiting (12.5/20/25 kHz)	±5/±2.5 kHz		±5/±2.5kHz		±5/±2.5 kHz		±5/±2.5 kHz	
Modulation Fidelity (C4FM) 12.5 kHz Digital Channel	2.50%		1.50%		1.50%		1.50%	
Audio Response	+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)	
FM Hum & Noise (12.5 kHz/25 kHz)	-52 dB / -53 dB		-50 dB / -53 dB		-48 dB / -50 dB		-48 dB / -50 dB	
Audio Distortion (12.5 kHz/25 kHz)	0.50%		0.50%		0.50% / 0.50%		0.50% / 0.50%	

## RECEIVER

	VHF		UHF R1		700 MHz	800 MHz
Frequency Range/Bandsplits	136-174 MHz		380-470 MHz		764-776 MHz	851-870 MHz
Channel Spacing	12.5/25 kHz		12.5/25 kHz		12.5/25 kHz	12.5/25 kHz
Maximum Frequency Separation	Full Bandsplit		Full Bandsplit		Full Bandsplit	Full Bandsplit
Audio Output Power at Rated/Max	7.5 / 15 W		7.5 / 15 W		7.5 / 15 W	7.5 / 15 W
Frequency Stability (-30 °C to +60 °C; +25 °C Ref.)	±0.8ppm		±0.8ppm		±0.8 ppm	±0.8 ppm
Analog Sensitivity (12 dB SINAD)	Pre-Amp -123 dBm (0.158 µV)	Standard -119 dBm (0.251 µV)	Pre-Amp -123 dBm (0.158 µV)	Standard -119 dBm (0.251 µV)	-121 dB (0.199 µV)	-121 dB (0.199 µV)
5% BER	Pre-Amp -123 dBm (0.158 µV)	Standard -119 dBm (0.251 µV)	Pre-Amp -123 dBm (0.158 µV)	Standard -119 dBm (0.251 µV)	-121.5 dB (0.188 µV)	-121.5 dB (0.188 µV)
Selectivity (12.5 kHz / 25 kHz / 30 kHz)	77 dB / 89 dB / 90 dB		72 dB / 83 dB / -		75 dB / 85 dB / -	75 dB / 85 dB / -
Intermodulation Rejection (12.5 kHz / 25 kHz)	Pre-Amp 84 dB / 84 dB	Standard 86 dB / 86 dB	Pre-Amp 82 dB / 82 dB	Standard 86 dB / 86 dB	82 dB / 82 dB	82 dB / 82 dB
Spurious Rejection	95 dB		93 dB		91 dB	91 dB
FM Hum & Noise (12.5 kHz / 25 kHz)	-50 dB / -59 dB		-50 dB / -55 dB		-50 dB / -59 dB	-50 dB / -59 dB
Audio Distortion (12.5 kHz / 25 kHz)	1.20%		1.50%		1.20%	1.20%

## POWER AND BATTERY DRAIN

	VHF	UHF R1	700/800 MHz
Model Type	136-174 MHz	380-470 MHz	764-870 MHz
Minimum RF Power Output	1-50 W	1-40 W	3-30 W (764-776 MHz) 3-30 W (794-806 MHz) 3-35 W (806-824 MHz) 3-35 W (851-870 MHz)
Operation	13.8V DC ±20% Negative Ground	13.8V DC ±20% Negative Ground	13.9V DC ±20% Negative Ground
Standby at 13.8 V	0.85A	0.85A	0.85A (764-870 MHz)
Receive Current at Rated Audio at 13.8 V	3.2A	3.2A	3.2A (764-870 MHz)
Transmit Current (A) at Rated Power	13A (50 W) 8A (15 W)	11A (40 W) 8A (15 W)	12A (35W) 8A (15 W)



#### ENVIRONMENTAL

Operating Temperature	-30°C/+60°C
Storage Temperature	-40°C/+85°C
Humidity	Per MIL-STD
ESD	IEC 61000-4-2
Water and Dust Intrusion	IP56, MIL-STD

#### RADIO MODEL NUMBER

VHF	M22KSS9PW1BN
UHF R1	M22QSS9PW1BN
700/800 MHz	M22URS9PW1BN

#### FCC/IC TYPE ACCEPTANCE ID

FCC/IC ID	Band and Power Level
FCC ID: AZ492FT7130 IC ID: 109U-92FT7130	136-174 MHz (1-50 W)
FCC ID: AZ492FT7129 IC ID: 109U-92FT7129	380-470 MHz (1-40 W)
FCC ID: AZ492FT7124 IC ID: 109U-92FT7124	764-776 MHz (3-30 W)
	794-806 MHz (3-30 W)
	806-824 MHz (3-35 W)
	851-870 MHz (3-35 W)

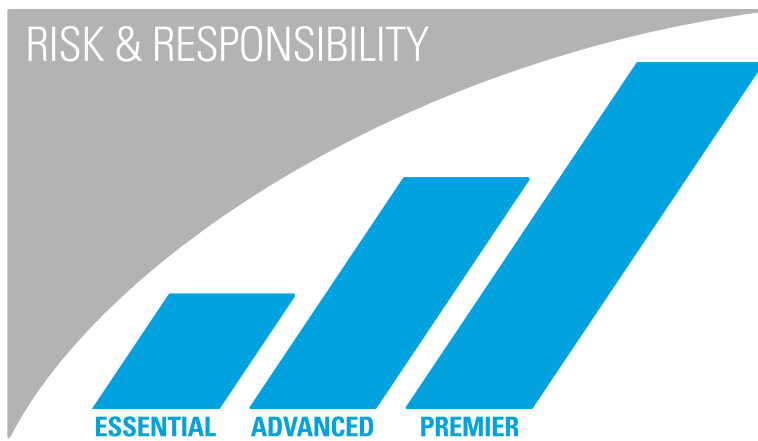
#### MOBILE MILITARY STANDARDS 810, C, D, E, F, G & H

	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F		MIL-STD 810G		MIL-STD 810H	
	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	I/II	500.6	II	500.6	II
High Temperature	501.1	I, II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Hot	501.6	I/A1, II/A1	501.7	I/A1, II/A1
Low Temperature	502.1	I	502.2	I/C3, II/C1	502.3	I/C3, II/C1	502.4	I/C3, II/C1	502.6	I/C3, II/C1	502.7	I/C3, II/C1
Temperature Shock	503.1	I	503.2	1/A1C3	503.3	1/A1C3	503.4	I	503.6	I/C	503.7	I/C
Solar Radiation	505.1	II	505.2	I	505.3	I	505.4	I	505.6	I/A1	505.7	I/A1
Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III	506.6	I, III	506.6	I, III
Humidity	507.1	II	507.2	II	507.3	II	507.4	-	507.6	II/Aggravated	507.6	II/Aggravated
Salt Fog	509.1	I	509.2	I	509.3	I	509.4	-	509.6	-	509.7	-
Blowing Dust	510.1	I	510.2	I	510.3	I	510.4	I	510.6	I	510.7	I
Blowing Sand	-	-	510.2	II	510.3	II		II	510.6	II	510.7	II
Vibration	514.2	VIII, F, W	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24	514.7	I/24	514.8	I/24, II/5
Shock	516.2	I, III, V	516.3	I, V, VI	516.4	I, V, VI	516.5	I, V, VI	516.7	I, V, VI	516.8	I, V, VI





## ACHIEVE MISSION CRITICAL PERFORMANCE WITH MANAGED AND SUPPORT SERVICES



ENSURE CONTINUITY • ENHANCE PRODUCTIVITY • REDUCE RISK

### ESSENTIAL

#### Only Support When You Need It

When the unpredictable happens to your network, Essential Services provide you access to Motorola Solutions Technical Support teams and resources for troubleshooting and maintenance.

### ADVANCED

#### Improve Response and Continuity

Motorola Solutions expert service teams help mitigate downtime and ensure network continuity. Get fast response to network issues by our qualified technicians who analyze and diagnose your network as well as deliver routine maintenance.

### PREMIER

#### Maximize Performance and Reduce Risk

Motorola Solutions Managed Services team helps operate and optimize your mission critical system. With Premier Services, you fully transfer the risk to Motorola Solutions and ensure your system operates at maximum performance levels, allowing your team to keep focus on its primary responsibilities.

For more information, please visit  
[www.motorolasolutions.com/apx](http://www.motorolasolutions.com/apx)



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# APX 1500

SINGLE-BAND P25 MOBILE RADIO



## P25 CONNECTIVITY. EXCEPTIONAL PRICE.

Your city infrastructure represents a large investment and its users depend on that investment every day. Why not protect it by giving your team the tools they need to operate and maintain it efficiently? Equip them with the affordable APX™ 1500 P25 mobile radio so they can get work done.

The APX 1500 mobile is designed to provide reliable P25 radio communication at an affordable price while standing up to the riggers

of every day work. The rugged simplicity of the O2 control head includes an easy to read color display and a built-in 7.5 watt speaker for efficient and confident communication. P25 radio capability enables seamless interoperability with first responders and other P25 radio users.

Communicate with ease and confidence at an affordable price on the APX 1500 mobile radio.





## GREAT VALUE

### DO MORE, DON'T PAY MORE

Just because you have a limited budget doesn't mean you have to limit your communication. The APX 1500 gives you dependable voice and data communication, P25 collaboration and all the features you need to connect your team - all at a great price.



## RUGGED AND RELIABLE

### RESPOND WITH CONFIDENCE

The APX 1500 is purpose-built for those who get things done. Get efficient and confident communication with the rugged simplicity of an oversized knob, easy-to-read color screen and a loud high-density speaker.



## P25 COLLABORATION

### COLLABORATE SEAMLESSLY

Although you are out of the office, you still need to communicate with others to get the job done. As a P25 mobile radio, the APX 1500 allows you to seamlessly collaborate with other P25 radio users in other departments and organizations.



## DEVICE MANAGEMENT SERVICES

### ALL THE SUPPORT YOU NEED

Motorola Solutions offers three levels of service plans – Essential, Advanced and Premier. From simple support for technical troubleshooting to a complete transfer of optimization and maintenance services to Motorola Solutions, you choose the level of support that suits you best.





# APX 1500 CONTROL HEAD

## O2 CONTROL HEAD

### EXTREME USABILITY

The O2 control head provides rugged simplicity for efficient and confident communication. Oversized controls with an easy to read color display and a built-in 7.5 watt speaker provides clear visual and audible user experiences.





# FEATURES

## GENERAL FEATURES

Channel Capacity	512 channels
Wireless Connectivity	GPS/GLONASS
Digital Encryption	256-bit AES SW, ADP, Programmable for 8 Common Key Reference

## OPERATING MODES

Digital Trunking: 9600 Baud APCO P25 Phase 1 FDMA and Phase 2 TDMA
Digital Conventional: APCO 25

## DATA CONNECTIVITY

ASTRO 25 Integrated Voice and Data
Enhanced Data <sup>1</sup>
Integrated GPS/GLONASS for Outdoor Location Tracking
Mission Critical Geofence <sup>1</sup>

## MANAGEMENT

Customer Programming Software (CPS)
Radio Management
Over-the-air Programming (OTAP) <sup>1</sup>

## SECURITY

P25 Authentication
Software Key
Single-key ADP Encryption <sup>1</sup>
Multikey for 8 keys

## GPS/GNSS SPECIFICATIONS

Channels	12
Tracking Sensitivity	-164 dBm
Accuracy <sup>2</sup>	<5 meters (95%)
Cold Start <sup>2</sup>	<60 seconds (95%)
Hot Start <sup>2</sup>	<5 seconds (95%)
Mode of Operation	Autonomous (Non-Assisted) GNSS or SBAS

<sup>1</sup> Optional    <sup>2</sup> Measured conductively with >6 satellites visible at a nominal -130 dBm signal strength





#### OTHER FEATURES

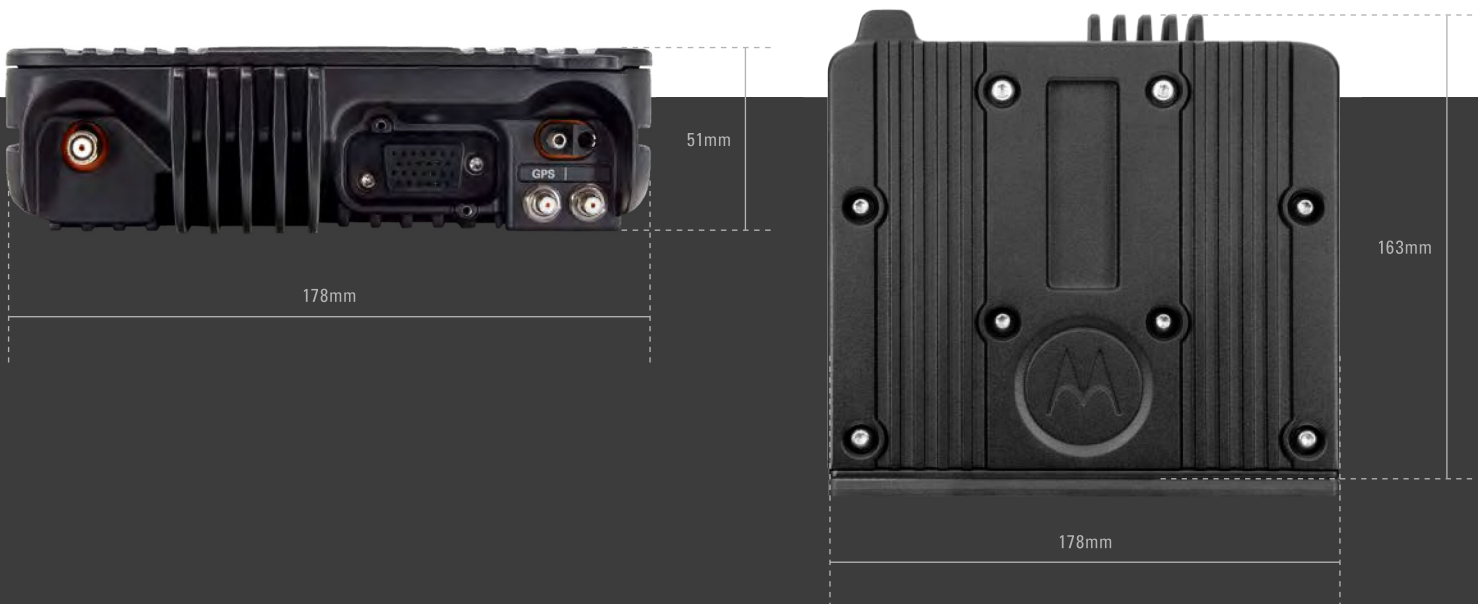
Text Messaging <sup>1</sup>
Radio Profiles
Dynamic Zone
Intelligent Priority Scan
Unified Call List
Instant Recall
12 Character RFID Asset Tracking <sup>1</sup>
Digital Tone Signaling <sup>1</sup>

#### SIGNALING (ASTRO 25 MODE)

Signalling Rate	9.6 kbps
Digital ID Capacity	10,000,000 Conventional / 48,000 Trunking
Digital Network Access Codes	4,096 network site addresses
ASTRO Digital User Group Addresses	4,096 network site addresses
Project 25 – CAI Digital User Group Addresses	65,000 Conventional / 4,094 Trunking
Error Correction Techniques	Golay, BCH, Reed-Solomon codes
Data Access Control	Slotted CSMA: Utilizes infrastructure-sourced data status bits embedded in both voice and data transmissions

#### DIMENSIONS AND WEIGHT

Radio Transceiver	51 x 178 x 163 mm (2.0 x 7.0 x 6.4 in)	2.18 kg (4.80 lbs)
Radio Transceiver and O2 Control Head - Dash Mount	69 x 207 x 223 mm (2.7 x 8.1 x 8.8 in)	2.43 kg (5.36 lbs)



<sup>1</sup> Optional



# PERFORMANCE AND REGULATORY

## TRANSMITTER

	VHF		UHF R1		700 MHz		800 MHz	
Frequency Range/Bandsplits	136-174 MHz		380-470 MHz		764-776, 794-806 MHz		806-825, 851-870 MHz	
Rated RF Output Power (Adjustable)	1-50 W		1-40 W		3-30 W		3-35 W	
Frequency Stability (-30°C to +60°C; +25°C Ref.)	±0.8 PPM		±0.8 PPM		±0.8 PPM		±0.8 PPM	
Emissions	Conducted -85 dBc	Radiated -20 dBm	Conducted -85 dBc	Radiated -20 dBm	Conducted -75/-85 dBc	Radiated -20/-40 dBm	Conducted -75 dBc	Radiated -20 dBm
Modulation Limiting (12.5 kHz / 20 kHz / 25 kHz)	±5/±2.5 kHz		±5/±2.5kHz		±5/±2.5 kHz		±5/±2.5 kHz	
Modulation Fidelity (C4FM) 12.5 kHz Digital Channel	2.5%		1.50%		1.50%		1.50%	
Audio Response	+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)	
FM Hum & Noise (12.5 kHz / 25 kHz)	-52 dB / -53 dB		-50 dB/ -53 dB		-48 dB / -50 dB		-48 dB / -50 dB	
Audio Distortion (12.5 kHz / 25 kHz)	0.50%		0.50%		0.50% / 0.50%		0.50% / 0.50%	

## RECEIVER

	VHF		UHF R1		700 MHz		800 MHz	
Frequency Range/Bandsplits	136-174 MHz		380-470 MHz		764-776 MHz		851-870 MHz	
Channel Spacing	12.5/25 kHz		12.5/25 kHz		12.5/25 kHz		12.5/25 kHz	
Maximum Frequency Separation	Full Bandsplit		Full Bandsplit		Full Bandsplit		Full Bandsplit	
Audio Output Power at Rated/Max	7.5/15 W		7.5/15 W		7.5/15 W		7.5/15 W	
Frequency Stability (-30°C to +60°C; +25°C Ref.)	±0.8ppm		±0.8ppm		±0.8 ppm		±0.8 ppm	
Analog Sensitivity (12 dB SINAD)	Pre-Amp -123 dBm (0.158 µV)	Standard -119 dBm (0.251 µV)	Pre-Amp -123 dBm (0.158 µV)	Standard -119 dBm (0.251 µV)	-121 dB (0.211 µV)		-121 dB (0.199 µV)	
5% BER	Pre-Amp -123 dBm (0.158 µV)	Standard -119 dBm (0.251 µV)	Pre-Amp -123 dBm (0.158 µV)	Standard -119 dBm (0.251 µV)	-121.5 dB (0.188 µV)		-121.5 dB (0.188 µV)	
Selectivity (12.5 kHz / 25 kHz / 30 kHz)	77 dB / 89 dB / 90 dB		72 dB / 83 dB / -		75 dB / 85 dB / -		75 dB / 85 dB / -	
Intermodulation Rejection (12.5 kHz / 25 kHz)	Pre-Amp 84 dB / 84 dB	Standard 86 dB / 86 dB	Pre-Amp 82 dB / 82 dB	Standard 86 dB / 86 dB	82 dB / 82 dB		82 dB / 82 dB	
Spurious Rejection	95 dB		93 dB		91 dB		91 dB	
FM Hum & Noise (12.5 kHz / 25 kHz)	-50 dB / -59 dB		-50 dB / -55 dB		-50 dB / -59 dB		-50 dB / -59 dB	
Audio Distortion (12.5 kHz / 25 kHz)	1.20%		1.50%		1.20%		1.20%	

## POWER AND BATTERY DRAIN

	VHF	UHF R1	700/800 MHz
Model Type	136-174 MHz	380-470 MHz	764-870 MHz
Minimum RF Power Output	1-50 W	1-40 W	3-30 W (764-776 MHz) 3-30 W (794-806 MHz) 3-35 W (806-824 MHz) 3-35 W (851-870 MHz)
Operation	13.8V DC ±20% Negative Ground	13.8V DC ±20% Negative Ground	13.9V DC ±20% Negative Ground
Standby at 13.8 V	0.85A	0.85A	0.85A (764-870 MHz)
Receive Current at Rated Audio at 13.8 V	3.2A	3.2A	3.2A (764-870 MHz)
Transmit Current (A) at Rated Power	13A (50 W) 8A (15 W)	11A (40 W) 8A (15 W)	12A (35W) 8A (15 W)



#### ENVIRONMENTAL

Operating Temperature	-30°C/+60°C
Storage Temperature	-40°C/+85°C
Humidity	Per MIL-STD
ESD	IEC 61000-4-2
Water and Dust Intrusion	IP56, MIL-STD

#### RADIO MODEL NUMBER

VHF	M36KSS9PW1BN
UHF R1	M36QSS9PW1BN
700/800 MHz	M36URS9PW1BN

#### FCC/IC TYPE ACCEPTANCE ID

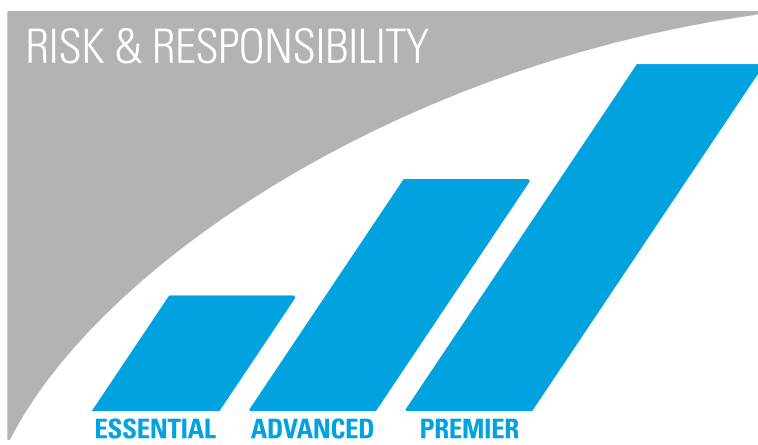
FCC/IC ID	Band and Power Level
FCC ID: AZ492FT7130 IC ID: 109U-92FT7130	136-174 MHz (1-50 W)
FCC ID: AZ492FT7129 IC ID: 109U-92FT7129	380-470 MHz (1-40 W)
FCC ID: AZ492FT7124 IC ID: 109U-92FT7124	764-776 MHz (3-30 W)
	794-806 MHz (3-30 W)
	806-824 MHz (3-35 W)
	851-870 MHz (3-35 W)

#### MOBILE MILITARY STANDARDS 810, C, D, E, F, G & H

	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F		MIL-STD 810G		MIL-STD 810H	
	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	I/II	500.6	II	500.6	II
High Temperature	501.1	I, II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Hot	501.6	I/A1, II/A1	501.7	I/A1, II/A1
Low Temperature	502.1	I	502.2	I/C3, II/C1	502.3	I/C3, II/C1	502.4	I/C3, II/C1	502.6	I/C3, II/C1	502.7	I/C3, II/C1
Temperature Shock	503.1	I	503.2	1/A1C3	503.3	1/A1C3	503.4	I	503.6	I/C	503.7	I/C
Solar Radiation	505.1	II	505.2	I	505.3	I	505.4	I	505.6	I/A1	505.7	I/A1
Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III	506.6	I, III	506.6	I, III
Humidity	507.1	II	507.2	II	507.3	II	507.4	-	507.6	II/Aggravated	507.6	II/Aggravated
Salt Fog	509.1	I	509.2	I	509.3	I	509.4	-	509.6	-	509.7	-
Blowing Dust	510.1	I	510.2	I	510.3	I	510.4	I	510.6	I	510.7	I
Blowing Sand	-	-	510.2	II	510.3	II		II	510.6	II	510.7	II
Vibration	514.2	VIII, F, W	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24	514.7	I/24	514.8	I/24, II/5
Shock	516.2	I, III, V	516.3	I, V, VI	516.4	I, V, VI	516.5	I, V, VI	516.7	I, V, VI	516.8	I, V, VI



## ACHIEVE MISSION CRITICAL PERFORMANCE WITH MANAGED AND SUPPORT SERVICES



ENSURE CONTINUITY • ENHANCE PRODUCTIVITY • REDUCE RISK

### ESSENTIAL

#### Only Support When You Need It

When the unpredictable happens to your network, Essential Services provide you access to Motorola Solutions Technical Support teams and resources for troubleshooting and maintenance.

### ADVANCED

#### Improve Response and Continuity

Motorola Solutions expert service teams help mitigate downtime and ensure network continuity. Get fast response to network issues by our qualified technicians who analyze and diagnose your network as well as deliver routine maintenance.

### PREMIER

#### Maximize Performance and Reduce Risk

Motorola Solutions Managed Services team helps operate and optimize your mission critical system. With Premier Services, you fully transfer the risk to Motorola Solutions and ensure your system operates at maximum performance levels, allowing your team to keep focus on its primary responsibilities.

For more information, please visit  
[www.motorolasolutions.com/apx](http://www.motorolasolutions.com/apx)



Motorola Solutions, Inc. 500 West Monroe Street, Chicago, IL 60661 U.S.A. 800-367-2346 [motorolasolutions.com](http://motorolasolutions.com)

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# MANAGED AND SUPPORT SERVICES FOR APX TWO-WAY RADIOS

For public safety agencies tasked with mission-critical communications, assuring peak radio performance is critical. Efficient and cost-effective management of an ever-evolving radio technology ecosystem is complex, requiring the right set of expertise and tool sets.

## YOUR NEEDS

Maintaining and supporting a large inventory of two-way radios can be complex, expensive and time-consuming. Today radio managers need the right set of people expertise, processes and tools to manage increasing programming complexities, fleet performance issues, budget and IT skill constraints.

As technology evolves, hardware repair and technical support capabilities are some of the critical service capabilities that are needed for your mission-critical communication systems to work optimally. Maintaining and programming radios is vital to keep your radio fleet current and secure. Without streamlined processes and tools you can spend countless hours managing radio configuration files, making firmware updates and going through distributed radio fleet databases.

Having a well-defined approach to tracking, managing and updating all the connected radios, together with applying the latest functionality and security features can help optimize fleet performance.

## INCREASING COMPLEXITY

**59%**

Of radio managers cite increased programming complexities as a major challenge.<sup>1</sup>

## PERFORMANCE ISSUES

**70%**

Of radio managers wait until something breaks to perform maintenance.<sup>2</sup>

## CHALLENGED RESOURCES

**55%**

Of public-safety organizations cite maintaining in-house talent as a challenge for radio management.<sup>3</sup>



# THE SOLUTION: SERVICE CAPABILITIES

You can rely on us to help you maximize the value of your radio investments with the right level of services designed specifically for your needs. We bring a range of service capabilities that you can choose through our Essential, Advanced and Premier service packages.

## KEY SERVICE FEATURES

### TECHNICAL SUPPORT

Our experienced technologists are available to help isolate and resolve any issues you may have with your radios. With an extensive knowledge base, trained and certified technical engineers and leading standards for escalation procedures, this team can troubleshoot and provide prompt resolution to your technical device issues. Motorola Solutions understands the importance of maintaining the radio fleet to its optimal performance. That's why we apply leading industry standards to record, monitor, escalate and report technical service calls from our customers.

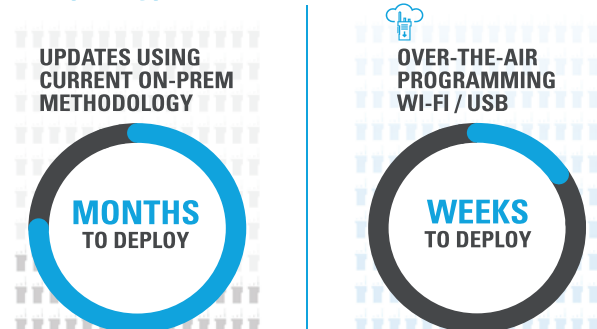
### HARDWARE REPAIR

With state-of-the-art diagnostic equipment, repair tools and replacement parts, your radio fleet components are protected in the event of an unexpected failure and are back in operation as soon as possible. When serviced, all device components are returned to you with original factory specifications and updated with the latest firmware. Plus, our service centers are certified to comply with ISO 9001, ensuring the highest quality repairs.

### BATCH PROGRAMMING WITH DATABASE HOSTING

Radio management allows you to manage and program multiple radios at a time. Database hosting enables radio codeplugs to be stored in a central database server allowing for remote configuration of data and remote programming of radios. Centralized database allows efficient organization of codeplugs and makes it a one-stop shop for edits or changes to specific devices. A single codeplug can be used as a template, which can then be shared across multiple radios. Template edits may then be easily applied to all affected radios. Changes to a template or to an individual radio's parameters can be scheduled as a programming job. With batch programming, programming jobs may be scheduled through an Over-The-Air-Programming (OTAP) connection, or USB or via Wi-Fi connection. Batch programming allows for simultaneous programming and software upgrading of up to 16 radios.

### TIME SAVINGS



### FULL SERVICE PROGRAMMING

With end-to-end device programming and provisioning services, we ensure all your two-way radio communication needs are met. These services include programming and provisioning, on-site set up and training, database hosting and access to a management portal that helps you maintain visibility into your devices. Device programming allows us to push specific information and features from the customer codeplug template to the radio itself. Provisioning is a way to add unique device identifiers to the devices, so the network is aware of the device and its feature set. This service is designed to reduce risks, optimize costs and provide end users a better experience with up-to-date and fully operational devices.

### ACCIDENTAL DAMAGE

While our two-way radios are built for superior performance, accidents happen. If required, we offer extended accidental damage coverage and support that includes repair and restoration of the device back to original factory specifications and a quick turnaround of the device back to you.

### PREVENTIVE MAINTENANCE

With preventive maintenance on your radio components we can help extend the life of your devices. From physical inspection and cleaning of radios to component alignment, we ensure that the device components remain in top condition with the latest firmware and updates. Our certified technicians conduct annual maintenance checks to help extend the useful life of your radios, reducing repair and replacement costs.

### ON-SITE SETUP AND DEVICE MANAGEMENT TRAINING

With on-site setup and device management training, our technical teams can help your organization set-up provisioning and programming processes to make you more effective in managing your fleet of devices. We will train your staff on the radio management and radio commissioning in the management database, enabling your team to configure radio channels, set up talkgroups, provide site access and establish user IDs.

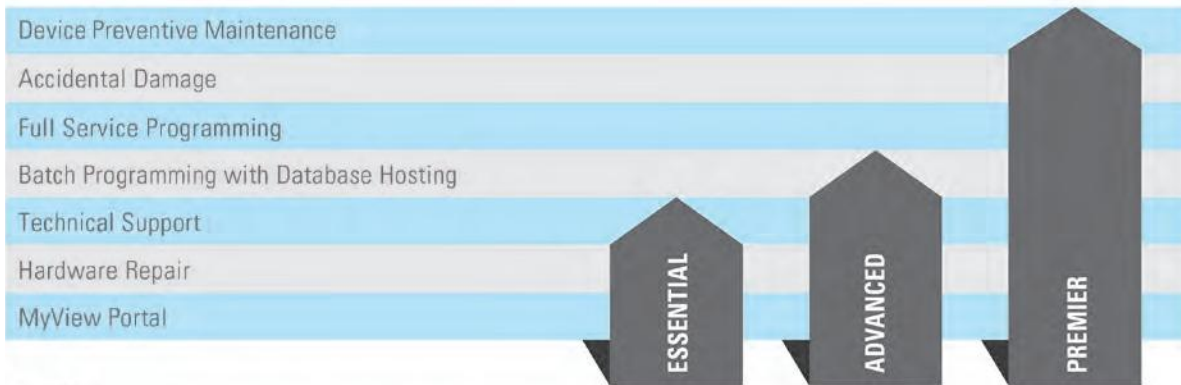
### MYVIEW PORTAL

MyView is a web-based platform that gives you a transparent, single source view of fleet status and service delivery information to help make smarter, faster and more proactive decisions. With MyView portal you can view your radio data, service case history, firmware and software status information to ensure smooth running of your radios.

## CHOOSE THE RIGHT LEVEL OF MANAGED AND SUPPORT SERVICES

With Essential services, we offer the tools and the expert support needed to efficiently manage your radio fleet. With Advanced services, batch programming enables you to manage and program your radio fleet efficiently, saving you precious time for efficient radio fleet management. With Premier services, you transfer your APX two-way radio operations, including full service programming, to our managed services professionals, allowing your team to focus on its primary responsibilities.

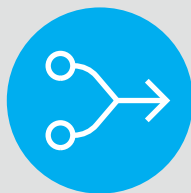
### SERVICES AT - A - GLANCE



Note:

- Device management training and on-site setup can be offered as add-on services with Advanced package.
- Accidental damage can be offered as an add-on service with Essential and Advanced packages.

## WE DELIVER ON RESULTS THAT MATTER



### Reduced Management Complexity

Drive efficiency of maintaining your device fleet while addressing technology evolution, time and cost savings.



### Optimized Fleet Performance

Superior first responder experience with ongoing software and security updates for fully operational radios.



### Optimized Costs

Subscription service that helps with a more predictable opex model, help save staff hours for cost optimization.

## MOTOROLA SOLUTIONS YOUR TRUSTED PARTNER

We believe that our set of highly knowledgeable people with industry certifications and mission-critical expertise, industry-leading ITIL process for centralized service delivery and governance, and state-of-the-art tools allow us to provide superior Device Services that address your needs today and in the future.





For more information, please visit  
[www.motorolasolutions.com/apx](https://www.motorolasolutions.com/apx)

**Resources**

1, 2, 3 <https://www.motorolasolutions.com/content/static/flipbook/mobile/index.html#p=1>



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## AirLink® RV55 Rugged LTE-A Pro Router

### BENEFITS

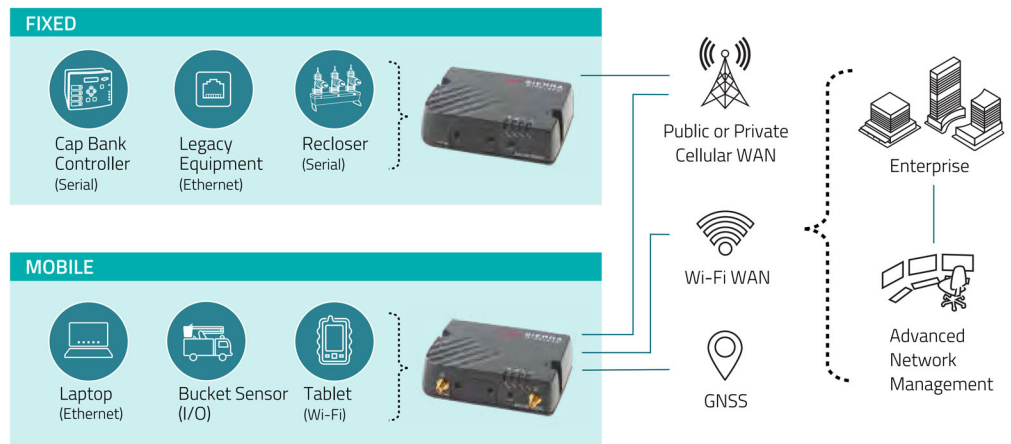
- Centrally managed, secure LTE broadband connectivity for both remote fixed or vehicle applications in harsh environments
- Ultra-Low Power consumption, ideal for solar or battery powered installations.
- Connect your field workers and devices with flexible dual Wi-Fi, and ethernet
- Reduces complexity in connecting legacy equipment with dual-serial, ethernet, and multi-protocol support
- Powerful remote cloud-based or on-premises management solutions
- Proven reliability and over 3 million AirLink routers and gateways deployed
- Peace of mind - included 3-year warranty, direct 24/7 support, and device management access<sup>1</sup>

### Compact, Industrial Grade, Low Power LTE-Advanced Connectivity

The AirLink® RV55 is the industry's most rugged, compact, LTE-Advanced Pro router. Simple to install, and easy to manage, the RV55 router is designed for connecting critical remote assets, infrastructure, and vehicle fleets. The RV55 is especially well suited for applications in energy, utilities, smart city and public safety. The RV55 provides real-time remote connectivity for SCADA, distribution management systems and metering.

The RV55 high-performance LTE-Advanced Pro connectivity, Wi-Fi and GNSS and location-based applications and dual connectivity for vehicle fleets and mobile workforce. An LTE-M/NB-IoT variant is perfectly suited for hard to reach conditions.

The RV55 supports an extensive range of LTE bands worldwide, and its LTE-Advanced Pro capabilities deliver up to 600 Mbps downlink speeds. The RV55 also supports new unlicensed LTE bands (eg. CBRS) to support dedicated Private LTE service.



<sup>1</sup> 1st year of 24/7 Direct Technical Support and device management access included in purchase at no additional charge.

RV55

	North America	Global	Global
	LTE-A Pro		LTE-M/ NB-IoT
LTE CATEGORY	Cat 12		Cat M1/NB1
Peak D/L	(Up to 600 Mbps DL)		Cat-M1: 300kbps Cat-NB1: 27kbps
Peak U/L	(Up to 150 Mbps UL)		Cat-M1: 375kbps Cat-NB1: 65kbps
4G LTE Frequency Bands	2100(B1), 1900(B2), 1800(B3), AWS(B4), 850(B5), 2600(B7), 900(B8), 1800(B9), 700(B12), 700(B13), 700(B14), 850(B18), 850(B19), 800(B20), 850(B26), 700(B29), 2300(B30), 1500(B32), TDD B41, TDD B42, TDD B43, TDD B46, CBRS B48, 1700(B66)	2100(B1), 1900(B2), 1800(B3), AWS(B4), 850(B5), 2600(B7), 900(B8), 1800(B9), 700(B12), 700(B13), 850(B18), 850(B19), 800(B20), 850(B26), 700(B28), 700(B29), 2300(B30), 1500(B32), TDD B41, TDD B42, TDD B43, TDD B46, CBRS B48, 1700(B66)	2100(B1), 1900(B2), 1800(B3), AWS(B4), 850(B5), 900(B8), 700(B12), 700(B13), 700(B17), 850(B18), 850(B19), 800(B20), 850(B26), 700(B28)
3G HSPA/HSPA+ Frequency Bands*	2100(B1), 1900(B2), AWS(B4), 850(B5), 800(B6), 900(B8), 1700(B9), 850(B19)	2100(B1), 1900(B2), AWS(B4), 850(B5), 800(B6), 900(B8), 1700(B9), 850(B19)	
2G EDGE/GSM/GPRS Frequency Bands			850, 900, 1800, 1900
APPROVALS			
Regulatory	FCC, IC, PTCRB	GCF, CE, RCM	FCC, IC, PTCRB, GCF, CE, RCM
Carrier	Verizon, AT&T	Planned: Telstra	Planned: Verizon, AT&T
PART NUMBER	1104303	1104332	1104333
Regulatory	1104302 (Wi-Fi)	1104331 (Wi-Fi)	

	Specification
HOST INTERFACES	10/100/1000 Ethernet (RJ45) RS-232 serial port (DB-9) USB 2.0 Micro-B Connector 3 SMA antenna (cellular, diversity, Active GNSS) 2 RP-SMA antenna (1x1 Wi-Fi, Optional) LTE-M/NB-IoT: 1 SMA (cellular) only, no GNSS or Wi-Fi Active GPS antenna support
WI-FI (Optional)	Dual Band 2.4/5GHz Wi-Fi Dual Radio, 802.11 b/g/n/ac (Wave2 Client Mode) Support for 10 clients, WPA2 Enterprise per radio Output power 16dBm Configurable as Dual Band Access Point (AP) or AP+Client Mode Single SSID Support per radio Captive Portal
INPUT/OUTPUT	Configurable I/O pin on power connector <ul style="list-style-type: none"> <li>Digital Input ON Voltage: 2.7 to 36 VDC</li> <li>Configurable Pull-up for dry contact input</li> <li>Digital Open Collector Output &gt; sinking 500 mA</li> <li>Analog Input: 0.5-36 VDC</li> </ul>
LAN (ETHERNET/USB)	DHCP Server IP Passthrough VLAN Host Interface Watchdog PPPoE
SERIAL	TCP/UDP PAD Mode Modbus (ASCII, RTU, Variable) PPP DNP3 Interoperability Dual Serial option (with an accessory)
NETWORK AND ROUTING	Network Address Translation (NAT) Port Forwarding Policy Routing NEMO/DMNR VRRP Reliable Static Route Dynamic DNS Verizon PNTM IPv6 Gateway

	Specification
SATELLITE NAVIGATION (GNSS)	30 Channel GPS and GLONASS Receiver Acquisition Time: 1 s Hot Start Accuracy: <2 m (50%), <5 m (90%), <0.2 m/s Tracking Sensitivity: -160 dBm Reports: NMEA 0183 V3.0, TAIP, RAP, XORA Multiple Redundant Servers Reliable Store and Forward
SECURITY	Remote Authentication (LDAP, RADIUS, TACACS+, DMZ) Inbound and Outbound Port filtering Inbound and Outbound Trusted IP MAC Address Filtering PCI compatible Secure Firmware Update
NETWORK MANAGEMENT	Secure mobile network & asset management application available in the cloud or licensed platform in the enterprise data center Fleet wide firmware upgrade delivery Router configuration and template management Router staging over the air and local Ethernet connection Over-the-air software and radio module firmware updates Device Configuration Templates Configurable monitoring and alerting Remote provisioning and airtime activation (where applicable)
ROUTER MANAGEMENT	ALMS Local web user interface AT Command Line Interface (Telnet/SSH/Serial) SMS Commands SNMP
EVENTS ENGINE	Custom event triggers and reports Configurable interface, no programming Event Types: Digital Input, Network Parameters, Data Usage, Timer, Power, Device Temperature and Voltage Report Types: RAP, SMS, Email, SNMP Trap, TCP (Binary, XML, CSV) Event Actions: Drive Relay Output



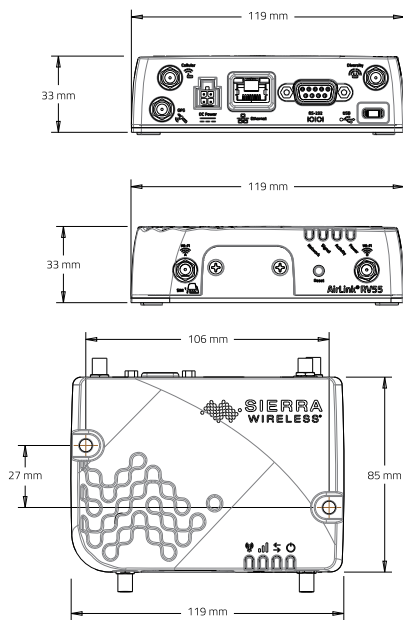
# AirLink® RV55 Rugged LTE-A Pro Router

<b>VPN</b>	IPsec, GRE, and OpenVPN Client Up to 5 concurrent tunnels Split Tunnel Dead Peer Detection (DPD) FIPS 140-2 compatible
<b>APPLICATION FRAMEWORK</b>	ALEOS Application Framework (AAF) Lua Scripting Language
<b>POWER</b>	Input Voltage: 7 to 36 VDC LTE Idle Power: 900mW (75 mA @ 12VDC) Standby Mode Power: 53 mW (4.4 mA @ 12 VDC) triggered on low voltage, I/O or periodic timer Low voltage disconnect to prevent battery drain Built-in protection against voltage transients including 5 VDC engine cranking and +200 VDC load dump Ignition Sense with time delay shutdown Configurable features and ports to optimize power consumption
<b>DIMENSIONS</b>	119 mm x 33 mm x 85 mm (102 mm including wi-fi connectors) 4.69 in x 1.34 in x 3.35 in (3.70 in including connectors) Weight: 320 g

<b>ENVIRONMENTAL</b>	Operating Temperature: -40°C to +70°C / -40°F to +158°F Operating Temperature (Wi-Fi variant): -30°C to +70°C / -22°F to +158°F Storage Temperature: -40°C to +85°C / -40°F to +185°F Humidity: 95% RH @ 60°C Military Spec MIL-STD-810G conformance to shock, vibration, thermal shock, and humidity IP64 rated ingress protection
<b>INDUSTRY CERTIFICATIONS</b>	Safety: IECCE Certification Bodies Scheme (CB Scheme), UL 60950 Vehicle Usage: E-Mark (UN ECE Regulation 10.04), ISO7637-2, SAE J1455 (Shock & Vibration) Hazardous Environments: Class 1 Div 2 Environmental: RoHS, REACH, WEEE
<b>SUPPORT AND WARRANTY</b>	Includes 1st Year AirLink Complete: <ul style="list-style-type: none"> <li>AirLink Management Service (ALMS)</li> <li>Direct 24/7 Technical Support</li> <li>3-year standard warranty; optional 2-year warranty extension</li> </ul> 1-day Accelerated Hardware Replacement available through participating resellers
<b>ACCESSORIES</b>	In the Box: DC Power Cable, and Quick Start Guide 2000579 AC Adapter, 12VDC 6000659 DIN Rail Mounting Brackets 6001110 Cellular Paddle Antenna 6001111 Wi-Fi 2.4/5GHz Paddle Antenna See website for more antenna options.

\*For carrier specific band support please refer to the hardware user guide.

## DIMENSIONS



## AirLink Networking Solution - Related Products

### AIRLINK NETWORK MANAGEMENT SOLUTIONS

#### AIRLINK MANAGEMENT SERVICE (ALMS)



- Secure, Cloud-based network and asset management
- Remotely deploy, configure, monitor and manage AirLink devices
- Carrier-grade, high availability, secure, global infrastructure

#### AIRLINK MANAGER / MOBILITY MANAGER (AM/AMM)



- Deployable in the enterprise data center (on-premises) or in the cloud
- Advanced, end-to-end network and asset management for both fixed and mobile networks.
- Remote, real-time configuration, control and troubleshooting of AirLink devices

### AIRLINK VPN APPLIANCE

#### AIRLINK CONNECTION MANAGER



- VPN appliance built from the ground up for Airlink routers & gateways
- Simplify deployment and management of your VPN solution, extending the enterprise to the network edge for fixed and mobile endpoints
- Carrier agnostic – ACM doesn't require fixed and/or public IP
- Compatible with FIPS 140-2, and always-onVPN capability

#### About Sierra Wireless

Sierra Wireless (NASDAQ: SWIR) (TSX: SW) is an IoT pioneer, empowering businesses and industries to transform and thrive in the connected economy. Customers Start with Sierra because we offer a device-to-cloud solution, comprised of embedded and networking solutions seamlessly integrated with our IoT services. OEMs and enterprises worldwide rely on our expertise in delivering fully integrated solutions to reduce complexity, turn data into intelligence and get their connected products and services to market faster. Sierra Wireless has more than 1,400 employees globally and operates R&D centers in North America, Europe and Asia. For more information, visit [www.sierrawireless.com](http://www.sierrawireless.com).

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# MCD 5000 DESKSET SYSTEM

**VoIP TECHNOLOGY FOR OUR CONVENTIONAL  
AND TRUNKED COMMUNICATIONS**







## EXPAND COMMUNICATIONS WITH VoIP TECHNOLOGY

The MCD 5000 Deskset brings you VoIP technology for your conventional and trunked communications. Ideal for dispatch environments, back-up sites, alternate locations, special events and call monitoring, the MCD 5000 Deskset is a powerful and easy-to-deploy VoIP solution for your radio system. With IP technology, you have the flexibility to quickly install desksets where you need them using your IP network infrastructure. And you can easily expand communication capabilities throughout your organization for increased safety, awareness and coordination.

### ADVANCE TECHNOLOGY TO POWER YOUR DISPATCH COMMUNICATIONS

Take full advantage of VoIP technology and enable communication across your network when and where you need it most. The MCD 5000 Deskset connects over your IP network to MCD 5000 Radio Gateway Units (RGUs), each of which supports up to four radios. The MCD 5000 Deskset emulates the buttons and display of the connected radio and performs all the functions of the radio control head. The inherent flexibility of this solution allows you to tailor configurations from a single deskset and a single radio to multiple desksets and multiple radios. Further increasing your capabilities, the MCD 5000 Deskset allows deskset users to dynamically switch between MCD 5000 RGUs, giving you access to additional radios for expanded communications. Each MCD 5000 Deskset can connect and monitor up to four radios (channels) at a time.

### DESIGNED FOR THE WAY YOU AND YOUR TEAMS WORK

With maximum usability in mind, the MCD 5000 Deskset is ergonomically designed with a highly intuitive layout and an adjustable viewing angle for both occasional and constant everyday use. The large and easy-to-read color LCD screen gives at-a-glance access to all of the critical information you need, including messages, channel status, and names along with emergency and user IDs. You can further customize the programmable softkeys to meet the needs of your personnel.

### INCREASE THE SAFETY OF YOUR PERSONNEL

Emergencies can take many shapes and can happen anytime, anywhere, the MCD 5000 Deskset includes the orange emergency activation button familiar on so many radios from Motorola Solution. Your staff will have peace of mind knowing that in an emergency, help can be summoned immediately with the simple push of a button.

### EMERGENCY NOTIFICATIONS

The MCD 5000 Deskset allows you to manage all of your inbound field unit emergency activations across many system types, including ASTRO® 25 systems. Additionally, the ASTRO 25 radio emergency function allows external alarms to be triggered to notify the MCD 5000 Deskset user of an emergency situation, improving response levels.







### **GIVE SUPERVISORS PRIORITY TRAFFIC**

When a supervisor logs into any MCD 5000 Deskset, their communications take first priority over all other MCD 5000 Desksets, allowing their critical voice traffic to get through immediately.

### **FREE UP AIRTIME**

The intercom facilitates conversation and information exchange between MCD 5000 Deskset users with no need to key a radio channel, preserving airtime and keeping conversations off the air.

### **SAVE TIME AND PROVIDE ADDITIONAL SUPPORT WITH ROBUST REPORTING TOOLS**

Provide timely support and save travel time when you remotely access your system to configure and troubleshoot the MCD 5000 Deskset and RGU using the MCD 5000 Deskset System Configuration Tool application. Run reports and perform queries for information you need to make real-time decisions. Supervisor reporting tools allow monitoring of each MCD 5000 Deskset System devices (MCD 5000 Deskset/MCD 5000 RGU) to enhance training and operational efficiencies.

### **SECURITY BUILT IN**

Secure your communications in locations that are not staffed continuously, have public access or access sensitive channels. Select the individual desksets which need this additional level of security and with the MCD 5000 Deskset's security time lock, you configure the duration of time the deskset remains active, after which an authorized user name and PIN are required to reactivate the device. For increased security, user profiles can establish which radio resources are allowed to be seen and accessed. An activity log on each MCD 5000 Deskset displays the last operations performed by the user as well as received transmissions. Flexible communication options allow the use of the handset, Push-To-Talk (PTT) switch and built-in condenser microphone, or headset, footswitch and desk microphone accessories.

### **ADAPTS TO YOUR EVOLVING NEEDS**

Scalable from small operations to complex control centers and geographically dispersed operations, you can depend on the modular MCD 5000 Deskset system to handle your communications and grow with you as your operational needs evolve and change.

### **OPTIONAL OPERATIONS MANAGEMENT CENTER SERVER**

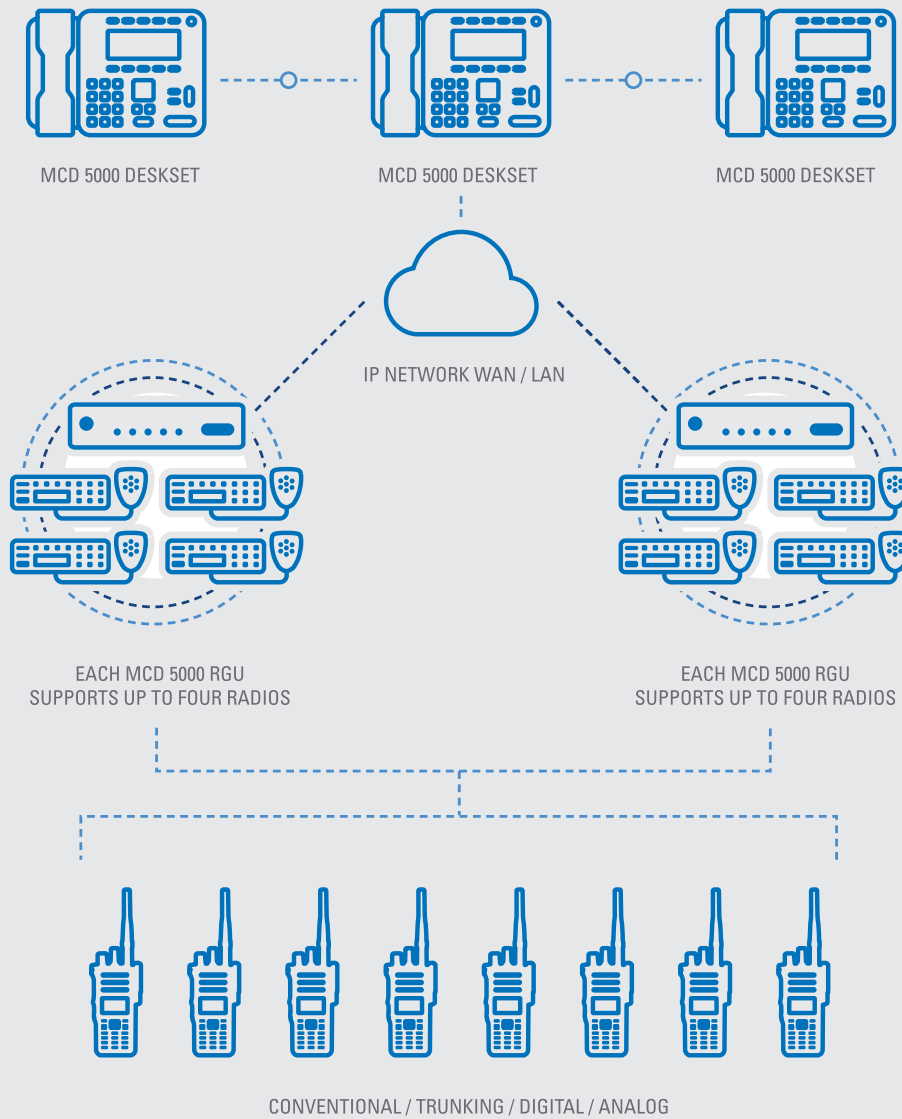
The Operations Management Center (OMC) is an optional main management server for the MCD 5000 Deskset system, enabling system operation, maintenance, provisioning, and control for larger installations as well as for customers with information assurance (IA) needs. This central repository is where all system users, MCD 5000 Desksets and radio resources are registered and where system-wide information including alarms, logs and audits is stored. The OMC server runs on the Red Hat® LINUX® operating system.

### **TWO-WAY RADIO SUPPORT**

- XPR5550e
- APX All-Band Consolette-05 CH
- APX All-Band Consolette-E5 CH
- APX 7500 Multiband Consolette
- ASTRO CONSOLETTE (W9)
- ASTRO Spectra
- ASTRO Spectra Plus
- MTM5400
- MTM800E
- TRC Radios / Base-Stations / Adaptors
- 4-Wire E&M Radios

## MCD 5000 DESKSET SHOWING 3 OPERATOR POSITIONS CONTROLLING UP TO 8 RADIOS

The MCD 5000 allows multiple desksets to dynamically switch to different MCD 5000 RGUs, giving you access to additional radios for expanded communications. Each MCD 5000 Deskset can connect and monitor up to four radios (channels) at one time.



To learn more about how the MCD 5000 Deskset solution can help you implement a flexible VoIP communications on your network, contact your Motorola Solutions representative or visit [www.motorolasolutions.com/dispatch](http://www.motorolasolutions.com/dispatch)



Motorola Solutions, Inc. 500 West Monroe Street, Chicago, IL 60661 U.S.A. [motorolasolutions.com](http://motorolasolutions.com)

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# MCD 5000 DESKSET SYSTEM

## POWERFUL AND FLEXIBLE VoIP COMMUNICATIONS

Expand your communications with VoIP technology. Scalable from small operations to complex control centers and geographically dispersed operations, you can depend on the new modular MCD 5000 Deskset System with VoIP technology for your conventional and trunked communications. Whether used in dispatch environments, back-up sites, special events or call monitoring, you can easily expand communication capabilities throughout your organization using your IP network. This easy-to-deploy solution enables communications across your network when and where you need it most, increasing safety, awareness and coordination.

### MCD 5000 DESKSET

A flexible desktop console, the MCD 5000 Deskset provides digital control for a variety of Motorola two-way radios, and can connect directly to a radio or over an IP network using the MCD 5000 Radio Gateway Unit (RGU).

The MCD 5000 Deskset digital control link emulates the buttons and display of the connected radio and performs all the functions of the radio control head.

And with a large and easy-to-read color LCD screen, intuitive layout and an adjustable viewing angle, the MCD 5000 Deskset is ergonomically designed for both occasional and constant everyday use.





## MCD 5000 RADIO GATEWAY UNIT

Connect the MCD 5000 Deskset to radios over your IP network using the MCD 5000 RGU. The MCD 5000 Deskset allows users to dynamically switch between MCD 5000 RGUs, giving access to additional radios across the network and expanding communications. Each MCD 5000 RGU can connect up to four radios and each MCD 5000 Deskset can connect and monitor up to four radios (channels) at a time.

## DESKSET AUDIO ACCESSORIES

With flexible communication options, you can use the handset, Push-To-Talk (PTT) switch and built-in condenser microphone, or add the optional headset, footswitch and desk microphone accessories for user convenience.

## IP NETWORK

Take full advantage of VoIP technology and deploy the MCD 5000 Deskset when and where you need it on your IP network.

## CONFIGURATION AND REPORTING TOOLS

Our configuration tool offers the convenience of remote use from anywhere on the network or local use with an Ethernet connection. And you can provide timely support and save travel time when you remotely access your system to configure the MCD 5000 Deskset and MCD 5000 RGU. You can also remotely run reports and perform queries for information you need to make real-time decisions. Additional supervisor reporting tools allow monitoring of each MCD 5000 Deskset System devices (MCD 5000 Deskset/MCD 5000 RGU) to enhance training and operational efficiencies.



The MCD 5000 RGU connects radios to the MCD 5000 Deskset over your IP network

## OPERATIONS MANAGEMENT CENTER (OMC) SERVER

An optional main management server for the MCD 5000 Deskset System, the Operations Management Center (OMC) enables system operation, maintenance, provisioning, and control for larger installations, as well as for customers with information assurance (IA) needs.

This central repository stores registration for all system users, MCD 5000 Desksets and radio resources, along with system-wide information including alarms, logs and audits. The OMC server runs on the Red Hat® LINUX® operating system.

Providing user-level interface to the OMC, the Administrator Control Panel Client (ACP) PC allows local and remote administration access for system management activities. The ACP Client PC runs on Microsoft Windows® 7 (64-bit) OR Windows 10 Professional (64 Bit) OR Windows IoT Enterprise LTSB 2015/2016 (64 Bit) Operating System. The ACP is required for systems with an OMC.

## TWO-WAY RADIO DEVICES

The MCD 5000 Deskset lets you control a wide variety of digital radios:

### APX All-Band Console-05 CH

### APX All-Band Console-E5 CH

### APX™ 7500 Multiband Console

### ASTRO® Console (W9):

ASTRO® Spectra™

ASTRO® Spectra Plus™

### Dimetra TETRA Mobile Radios:

MTM5400

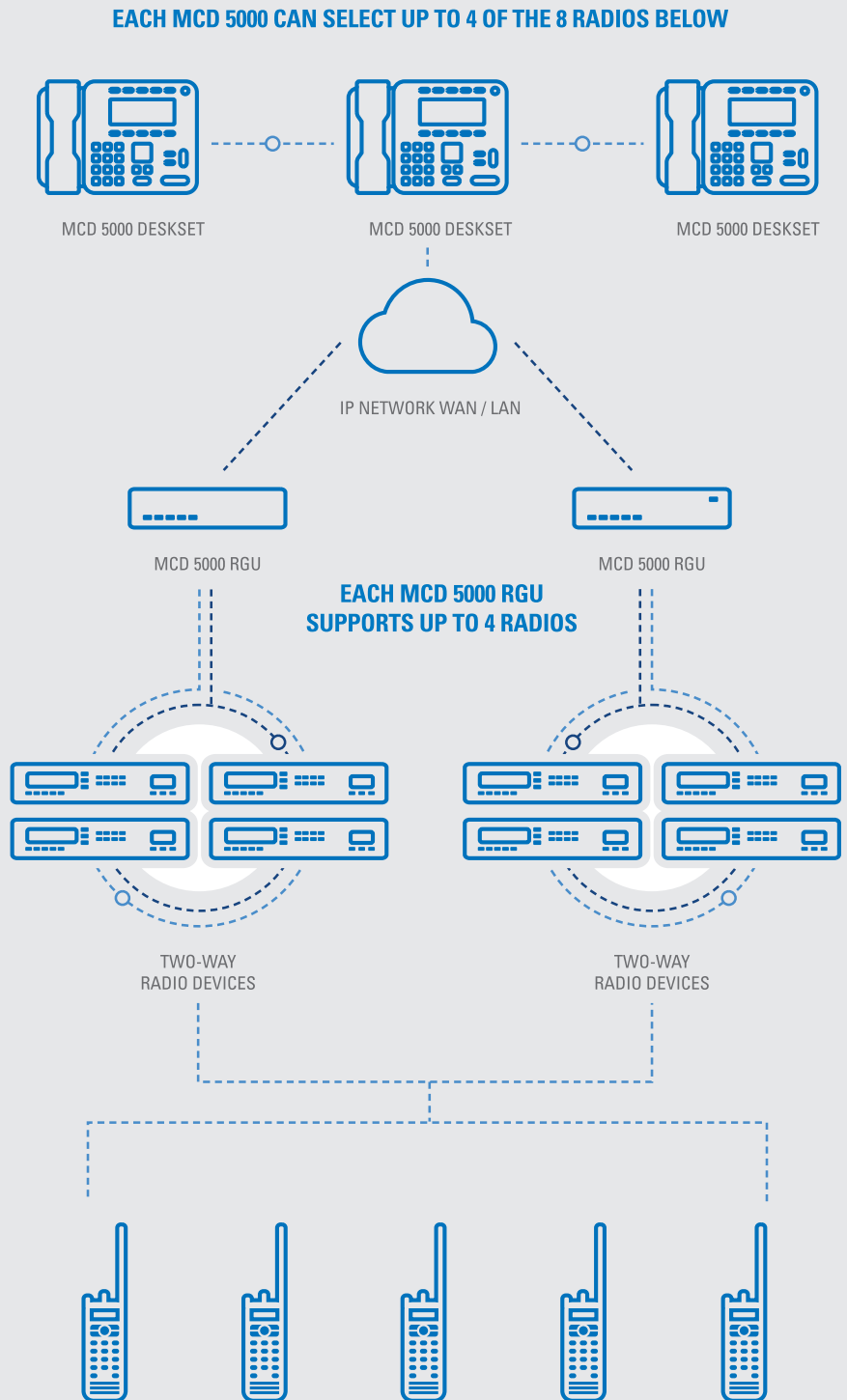
MTM800E

### TRC Radios/Base-Stations/Adaptors

### 4-Wire E&M Radios

## EXAMPLE MCD 5000 DESKSET SYSTEM SHOWING 3 OPERATOR POSITIONS CONTROLLING UP TO 8 RADIOS

The MCD 5000 Deskset system allows multiple desksets to dynamically switch to different MCD 5000 RGUs, giving you access to additional radios for expanded communications. Each MCD 5000 Deskset can connect and monitor up to four radios (channels) at one time.



## SPECIFICATIONS

MCD 5000 DESKSET	
Dimensions	Height: 1.65 in (42 mm) Width: 8.58 in (218 mm) Depth: 10.39 in (264 mm) Weight: 5.73 lbs (2.6 kg)
Environmental	Operating temperature: -30 °C to 60 °C (-22 °F to 140 °F) Storage temperature: -40 °C to 80 °C (-40 °F to 176 °F) Humidity: 5% to 95% @ +50° C (122° F), Non-Condensing
Power	Input power:+10.8 to +14VDC, (+12 V nominal) Dissipation: 9W Max. 37VDC to 57VDC. Powered via POE-PD; meeting 802.3af Standard for Powered Desksets class 0
Audio	The end-to-end distortion is no more than 3% THD The generated audio is no more than -50 dBm of Hum and Noise below the rate audio output The crosstalk between any audio signals is no more than -65 dBm at 0 dBm transmit audio power
Supported Radio Protocols	RS-232 TTL, SB9600, IP, 4W-E&M, TRC
Regulatory-EMC	FCC part 15 class A
Safety	EN60950-1
Green Product	RoHS, WEEE Mark
Certified Standard Compliance Requirements	CE Mark, FCC part 15 A Mark, UL Mark (for P.S. only) US federal government Environmentally Preferable Specification (EPP) Program
Non-certified Standard Compliance Requirements	CSA, UL, MOTOROLA W18 certification, CMM
Vocoders	G.711 and G.729

MCD 5000 RADIO GATEWAY UNIT	
Dimensions	Height: 1.65 in (42 mm) Width: 8.58 in (218 mm) Depth: 10.39 in (264 mm) Weight: 5.73 lbs (2.6 kg)
Environmental	Operating temperature: -30 °C to 60 °C (-22 °F to 140 °F) Storage temperature: -40 °C to 80 °C (-40 °F to 176 °F) Humidity: 5% to 95% @ +50° C (122° F), Non-Condensing
Power	Input power:+10.8 to +14VDC, (+12 V nominal) Dissipation: 9W Max. 37VDC to 57VDC. Powered via POE-PD; meeting 802.3af Standard for Powered Desksets class 0
Audio	The end-to-end distortion is no more than 3% THD The generated audio is no more than -50 dBm of Hum and Noise below the rate audio output The crosstalk between any audio signals is no more than -65 dBm at 0 dBm transmit audio power
Supported Radio Protocols	RS-232 TTL, SB9600, IP, 4W-E&M, TRC
Regulatory-EMC	FCC part 15 class A
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Green Product	RoHS, WEEE Mark
Certified Standard Compliance Requirements	CE Mark, FCC part 15 A Mark, UL Mark (for P.S. only) US federal government Environmentally Preferable Specification (EPP) Program
Non-certified Standard Compliance Requirements	CSA, UL, MOTOROLA W18 certification, CMM
Vocoders	G.711 and G.729

MCD 5000 DESKSET SYSTEM CAPACITIES	
Maximum Number of Radio Resources	512
Maximum Number of MCD 5000 Radio Gateway Units (RGUs)	128
Maximum Number of Radios per MCD 5000 Radio Gateway Unit (RGU)	4
Maximum Number of MCD 5000 Desksets	100
Maximum Number of Groups per MCD 5000 Deskset	20
Maximum Number of Users per MCD 5000 Deskset	8 (Non-OMC System) 1,000 (OMC System)

To learn more about how the MCD 5000 Deskset System can help you implement powerful and flexible VoIP communications on your network, contact your Motorola representative or visit [www.motorolasolutions.com/dispatch](http://www.motorolasolutions.com/dispatch)



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# IMPROVE REAL-TIME SITUATIONAL INTELLIGENCE

COMMANDCENTRAL AWARE  
REAL-TIME INTELLIGENCE OPERATIONS



## REAL-TIME SITUATIONAL INTELLIGENCE

CommandCentral Aware provides a complete operating picture, integrating real-time intelligence in the command center to remotely assist officers in the field. Simplify your operational view by consolidating your resources into one single pane of glass. Support officer safety by monitoring real-time alerts and accessing nearby video feeds when incidents occur.



# LOCATION & MAPPING

SIMPLIFY INFORMATION. MAKE BETTER DECISIONS.



## MONITOR ACTIVITY FROM ANYWHERE

View all of your location-based data together, in real-time, on a single map display. This common operating picture can be accessed anywhere, from any internet-connected device.



## ACT WITH THE NECESSARY CONTEXT

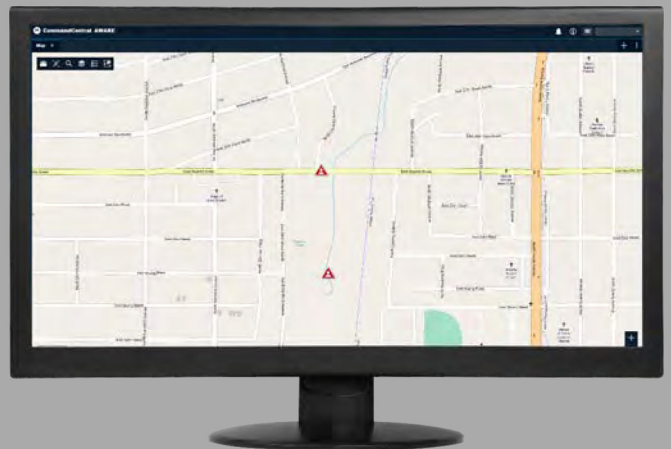
Communicate a more informed response to a critical incident and enhance responder safety for those in the field by accessing a common operating picture through CommandCentral Aware — directly from your agency's map.



## COLLABORATE WITHOUT DISTRACTION

Control specific viewing permissions based on groups of users to ensure a focused response from every team member during a critical event. Filter your view to only the datasets you need in the moment.

ACCESS DATA FROM  
CAD THROUGH  
COMMAND**CENTRAL** AWARE,  
ENHANCING THE COMMON  
OPERATING PICTURE.





## FEATURES:

**Unified Mapping:** Utilizing a common Esri base map, geographically locate real-time events such as CAD incidents, device and unit location, alert and alarms, tactical decision data and camera locations. Incorporate other Esri-based map layers from your agency for enriched spatial orientation such as property boundaries, landmarks, buildings and asset locations. In addition, streaming and stationary weather layers are provided to enhance visual situational awareness. Organize your devices through group management to further refine ownership to adhere to logical inter agency and intra agency configurations. Manage the content seen by these agencies via groups of users provisioned and authorized to see specific mapping layers.

### **Desktop & Mobile Accessibility:**

Work seamlessly from desktop to mobile. CommandCentral Aware is accessible via web browser on any computer as well as from any tablet or smartphone with an internet connection.

**Data Layer Filtering:** Show or hide data layers, such as CAD incidents, by selecting or deselecting them in the data layer panel, ensuring your teams are seeing only what they need in that moment. Data layers can also be prioritized to ensure certain information takes visual precedence on the map.

**Critical Information Display:** Associate critical information with each event or resource on the map display.

**Team-Based Permissions:** Restrict what personnel see based on what their team needs to be most effective, while still ensuring that consistent and relevant information is being referenced from a shared common operating picture.

**“View-Only” Information Access:** Ensure workflows are unhindered by access to information in the simplest form possible.







# LOCATION, MAPPING & ALERTS

KEEP OFFICERS AND CITIZENS SAFE ON THE STREETS



## RESPOND QUICKLY TO ESCALATING INCIDENTS

Responder alerts automatically show the command center what's happening to officers during an incident, whether that be an emergency, vest pierce, man down alerts and more. Alerts showing the location and type of incident on the consolidated map help personnel enhance situational awareness and improve officer and citizen safety.







## FEATURES:

CommandCentral Aware automatically informs the command center that a situation has escalated without further action by the officer. Alerts indicating weapon fired, vest pierce or other emergency display the location and type of incident in real time on the consolidated map, helping dispatchers provide immediate support and improving officer and citizen safety.

**Weapon Fired Alert (Handguns Only):** This sensor can be retrofitted to certain handguns to send an alert that the weapon has been discharged. The sensor is located in the grip of the handgun.

**Vehicle Impact Alert:** When a responder vehicle, equipped with APX radios, experiences significant impact, an emergency alert will notify the command center of the situation and location.

**Man Down Alert:** A man down emergency alert generated by all enabled APX portable radios appears as a notification when the radio is at an angle and there is no movement based on user parameters.

**Vest Pierce Alert:** When a piercing event is detected, such as a shot or stab, an emergency alert is transmitted to notify command staff that a responder may be incapacitated and needs help. Insert sensors into existing body armor.

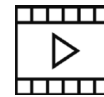
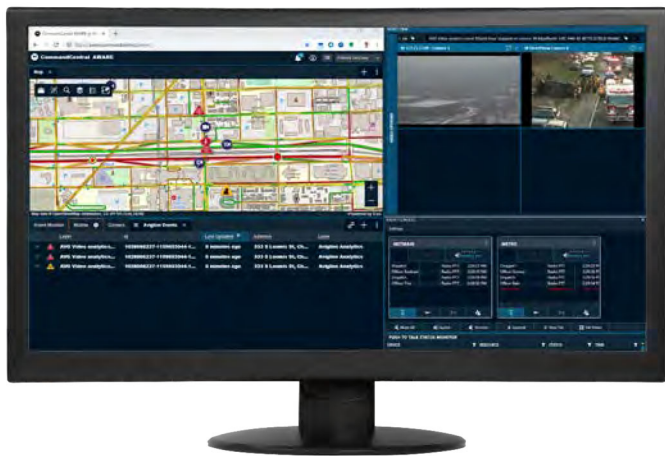
**Emergency Button Press:** When the emergency button is pressed on an APX radio, an alert will appear on the consolidated map that an emergency needs to be addressed.





# VIDEO INTELLIGENCE

## HAVE EYES ON A SCENE WITHIN SECONDS



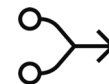
### ENHANCE RESPONSE THROUGH REAL-TIME VIDEO

Shape your response more appropriately with CommandCentral Aware's real-time video access and notifications, which allow PSAP fusion operators or intelligence analysts to access nearby video feeds from within the consolidated map for greater visibility into an escalating situation. CommandCentral Aware brings users' attention to key video content, enhancing officer safety and boosting productivity.



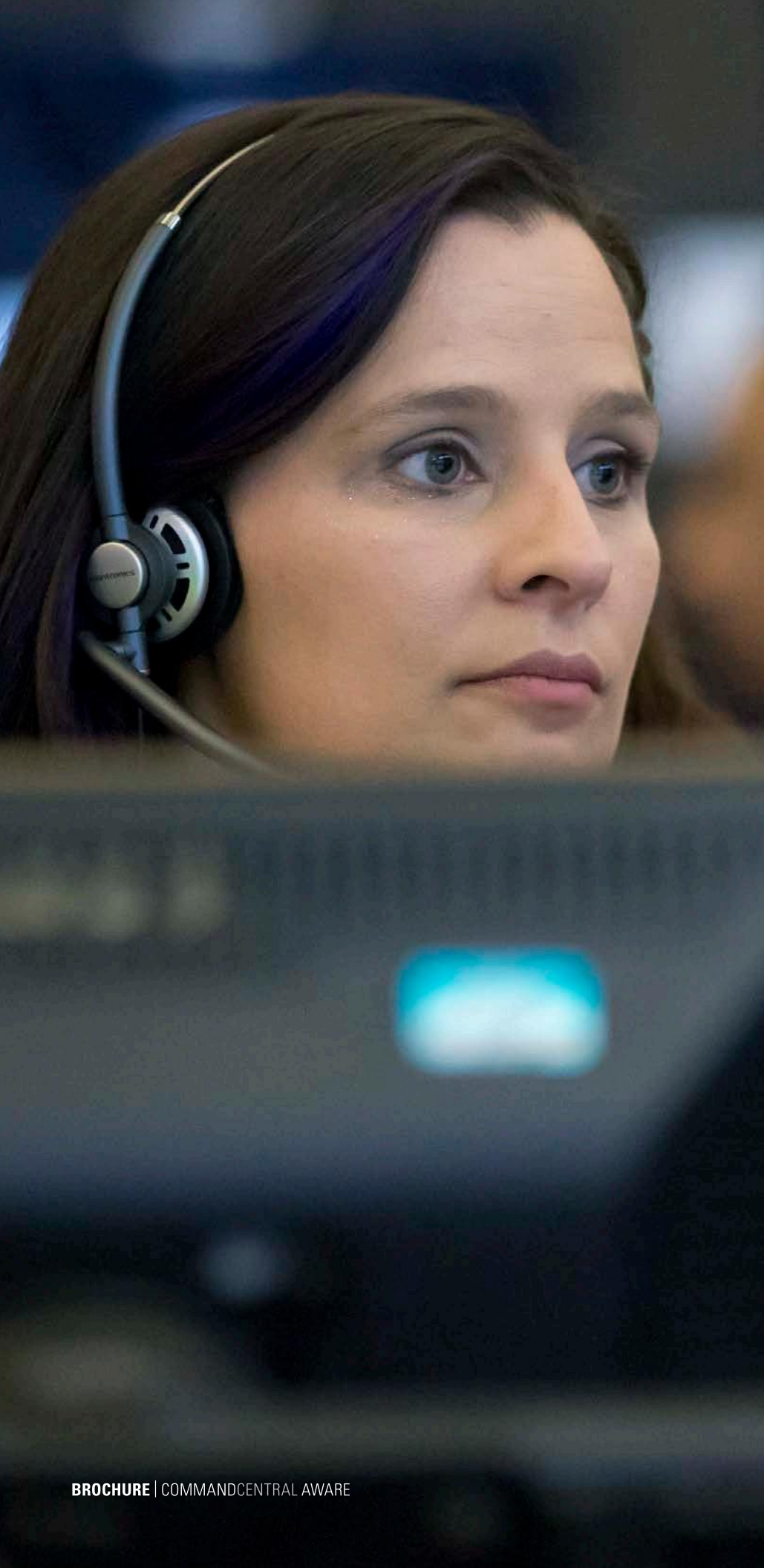
### STREAMLINE AGENCY WORKFLOWS

Improve productivity and easily manage evidentiary files by only storing and tagging incident-related video through CommandCentral Vault.



### SIMPLIFY VIDEO MANAGEMENT

Simplify your operational view by bringing all disparate video solutions into one single, consolidated screen.



## FEATURES:

**Geospatial Event Mapping:** Include camera locations, CAD incidents, personnel status and location, open-source data alerts, sensors and more on a single map that can be customized with any of your agency's other data layers.

**Activity Monitor:** View a real-time feed of alerts and incident occurrences as they populate on the map. Each event can be viewed in detail with information drawn from additional data sources pertaining to that specific event.

**Workflow Configuration:** Automate workflows by associating related data together from disparate systems to get a comprehensive picture of the incident or threat occurrence. This can include video sources, related open-source data alerts, a CAD incident, sensor alarms and more.

**Real-Time Video Streaming:** Virtually patrol your community and quickly get eyes on the scene of an event by viewing cameras simultaneously from fixed or mobile video feeds via any video management system. Easily reference the video source, date, time and location as well as customize camera groups for quicker access to particular locations.

**Security Compliance:** Rely on applications secured and compliant to CJIS security standards.

Improve situational awareness by accessing video feeds to nearby alerts on CommandCentral Aware's consolidated map. Save seconds in your response and improve responder safety.

# NEXT-GENERATION EVOLUTION WITH A DEDICATED TECHNOLOGY LEADER

We build software for mission-critical environments where every second matters. CommandCentral Aware and other applications in our CommandCentral software suite unify data and streamline workflows from call to case closure in order to put your information to better use, improve safety for critical personnel and restore your focus on the communities you serve. Backed by a trusted, 90-year industry expert with proven public safety leadership, our suite is transforming the public safety experience with a focus on evolution, not revolution, in order to help you digitally transform your operation.

## COMMANDCENTRAL

The industry's most integrated public safety software suite from call to case closure.

### Incident Awareness

COMMUNITY  
ENGAGEMENT



Citizen

EMERGENCY CALL  
MANAGEMENT



911 Call Taker

VOICE &  
COMPUTER  
AIDED DISPATCH



Dispatcher

### Incident Management

REAL-TIME  
INTELLIGENCE  
OPERATIONS



Intelligence  
Analyst

FIELD RESPONSE  
& REPORTING



Frontline  
Responder

### Post-Incident Resolution

RECORDS  
& EVIDENCE  
MANAGEMENT



Records  
Specialist

ANALYSIS &  
INVESTIGATION



Crime  
Analyst

JAIL & INMATE  
MANAGEMENT



Corrections  
Officer

For more information about CommandCentral Aware, visit [www.motorolasolutions.com/aware](http://www.motorolasolutions.com/aware)



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# APX RADIO ACCESSORIES

RESILIENCE WITHOUT COMPROMISE





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## APX PORTABLE RADIO ACCE

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- Remote Speaker Microphones (RSM)
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- All RSM Accessories and Replacement Parts
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- CommPort™
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- Carry Solutions
- Antennas
- Programming Cables





# APX PORTABLE

## MISSION CRITICAL PERFORMANCE FOCUSED ON DURABILITY AND FLEXIBILITY TO KEEP YOU SAFER

Motorola P25 APX radios deliver what first responders need to increase their safety and improve their situational awareness. Get the most out of your APX radio by extending its power and reliability with resilient APX accessories. They are the only accessories tested and certified for use with APX radios. Our accessories endure rigorous testing to last longer and help keep you safer. There's simply no substitute for Motorola APX accessories.



APX 8000



APX 8000XE

**MOTOROLA'S EXCLUSIVE ENERGY AND AUDIO FEATURES  
ARE MADE FOR MISSION CRITICAL MOMENTS**

IMPRES™ ENERGY. YOUR RADIO IS YOUR LIFELINE. IS YOUR

IMPRES AUDIO. I HEAR YOU. EVEN WHEN YOU



















## DESIGNED FOR THE MISSION. ENGINEERED FOR THE EXTREME.

APX XE500 Remote Speaker Microphones (RSMs) are designed by firefighters for firefighters. Ergonomic, rugged and reliable, the XE500 RSM is built with the user's extreme environment in mind. Designed to withstand heat exposure of 500°F for up to five minutes and an IP68 submersibility rating, it will perform in extreme conditions. Your lifeline needs to be as tough as your radio. That's why the XE500 RSM is the perfect companion to your APX radio.



## APX PORTABLE RADIO ACCESSORIES

COMPATIBILITY		ACCESSORY										FEATURES
XE500 REMOTE SPEAKER MICROPHONES (RSM)												
PORTABLE RADIOS	DESCRIPTION	PART NUMBER	IMPRES AUDIO	MICROPHONE NOISE SUPPRESSION	VOLUME CONTROL	ORANGE PROGRAMMABLE BUTTON	CHANNEL CONTROL	PROGRAMMABLE BUTTON	IP RATING	HAZLOC-CAPABLE†	SIZE (WITHOUT CLIP)	
APX 8000	 XE500 High Impact Green, Channel Knob, Xtreme Temperature Cable	PMMN4106	●	Multi-Mic Noise Suppression	Step 			1	IP68	UL	75 x 98 x	
APX 8000XE	 XE500 Black Housing, Channel Knob, Xtreme Temperature Cable	PMMN4106_BLK	●	Multi-Mic Noise Suppression	Step 			1	IP68	UL	75 x 98 x	
APX 7000	 XE500 High Impact Green, No Channel Knob, Xtreme Temperature Cable	PMMN4107	●	Multi-Mic Noise Suppression	Step 			1	IP68	UL	75 x 98 x	
APX 6000	 XE500 Black Housing, No Channel Knob, Xtreme Temperature Cable	PMMN4107_BLK	●	Multi-Mic Noise Suppression	Step 			1	IP68	UL	75 x 98 x	

† HazLoc Details: For more information on which accessories are approved by Factory Mutual (FM) or Underwriters' Laboratory (UL) with certain APX models, please consult the manual provided with each FM- or UL-approved APX portable.

## APX™ XP REMOTE SPEAKER MICROPHONE








**DUAL MIC NOISE SUPPRESSION**  
This Remote Speaker Microphone with its thin design and optimized ergonomics is ideal for police officers and other public safety users. With Dual Mic Noise Suppression, you will be heard despite traffic noise and sirens in the background. When it gets dirty, just wash the microphone head to ensure your communication is not compromised.



## WIRELESS REMOTE SP

Secure pairing is easier than ever. Navigating menus or enter codes. Removing the cord from the RSM ever. No more worrying about getting buttons to ensure that users have worry about accidental activation an audio jack, 360 degree rotatable to read in the dark.

# APX PORTABLE RADIO ACCESSORIES

COMPATIBILITY	ACCESSORY	FEATURES									
PORTABLE RADIOS	DESCRIPTION	PART NUMBER	IMPRES AUDIO	MICROPHONE NOISE SUPPRESSION	VOLUME CONTROL	ORANGE PROGRAMMABLE BUTTON	DISPLAY	CHANNEL CONTROL	PROGRAMMABLE BUTTON	AUDIO JACK	IP RATING
APX 8000 APX 8000XE APX 7000 APX 7000XE APX 6000 APX 6000XE APX 4000 APX 3000 SRX 2200	 <p>IMPRES XP RSM with Dual Mic Noise Suppression, Volume Control, 1-Programmable Button and Orange Button. Rugged, Submersible (IP68)</p>	NMNG271	●	Dual-Mic Noise Suppression	 Step				1	3.5 mm	IP68
	 <p>IMPRES XP RSM with Dual Mic Noise Suppression, 3.5mm threaded jack, Volume Control, 1-Programmable Button and Orange Button (IP55)</p>	NMNG274	●	Dual-Mic Noise Suppression	 Step				1		
	XP RSM Replacement Cable with Audio Jack	PMKN4222									
	XP RSM Replacement Cable without Audio Jack	NKN6611									

All remote speaker microphones are built w

Our robust portfolio includes Remote Speaker Microphones and secondary audio accessories engineered to give you clearer communications even in loud environments.

# APX PORTABLE RADIO ACCESSORIES

COMPATIBILITY		ACCESSORY							FEATURES						
PORTABLE RADIOS		DESCRIPTION	PART NUMBER	IMPRES	MICROPHONE NOISE SUPPRESSION	VOLUME CONTROL	ORANGE PROGRAMMABLE BUTTON	DISPLAY	CHANNEL CONTROL	PROGRAMMABLE BUTTON	All remote speaker microphones are built w				
											clearer communications even in loud environments.				
APX 8000 APX 8000XE APX 7000 APX 7000XE APX 6000 APX 6000XE APX 4000 APX 3000 APX 900 SRX 2200		IMPRES Display RSM with Audio Jack, Channel Selector, Volume Control, 2-Programmable Buttons and Orange Button. Windporting, Rugged, Submersible (IP68)	HMN4104	●	Windporting	Step		●		2	8-H				
		IMPRES Display RSM with Audio Jack, Volume Control, 2-Programmable Buttons and Orange Button. Windporting, Rugged, Submersible (IP68)	HMN4103	●	Windporting	Step		●		2	8-H				
		IMPRES RSM with Audio Jack, Volume Control, 2-Programmable Buttons and Orange Button. Windporting, Rugged, Submersible (IP68)	HMN4101	●	Windporting	Step		●		2	8-H				
APX 8000 APX 8000XE APX 7000 APX 7000XE APX 6000 APX 6000XE APX 4000 APX 3000 SRX 2200		IMPRES RSM Windporting, Rugged (IP68)	PMMN4083	●	Windporting										
		IMPRES RSM with 3.5mm Threaded and NON-Threaded Audio Jack and Orange Button. Noise-Cancelling (IP54) NOT INTENDED FOR FIRE MARKETS	PMMN4084	●	Noise-Cancelling							3.5			
		IMPRES Windporting RSM with Volume Toggle Switch, Orange Button, 3.5mm NON-Threaded Jack (IP68)	PMMN4099	●	Windporting	High/Low					1	3.5			
SRX 2200		Windporting RSM, Coyote Brown, (IP57)	NNTN8235		Windporting										
		Windporting RSM with NON-Threaded 3.5mm Audio Jack, Coyote Brown, (IP54)	NNTN8236		Windporting							3.5			
APX 7000 APX 7000XE APX 6000		IMPRES RSM with NON-Threaded Audio Jack, Orange Button, Noise-Cancelling (IP54) NOT INTENDED FOR FIRE MARKETS	PMMN4062	●	Noise-Cancelling						3.5				



# APX PORTABLE RADIO ACCESSORIES

COMPATIBILITY		ACCESSORY
REMOTE SPEAKER MICROPHONE ACCESSORIES AND REPLACEMENT PARTS		
PORTABLE RADIOS	DESCRIPTION	PART NUMBER
<b>XE RSM REPLACEMENT PARTS</b>		
APX 8000	 Xtreme Temperature Replacement Cable for XE RSM (NNTN8203 and NNTN8575 series)	30009402002
APX 8000XE	 Xtreme Temperature Replacement Cable for XE500 RSM	30009402007
APX 7000	 XE RSM Clip Assembly with brass insert designed to work with the Boston Leather Straps (AY000223A01, AY000229A01) requires Clip Button NNTN8749	NNTN8271
APX 7000XE	 XE500 RSM Clip Assembly with brass insert designed to work with the Boston Leather Straps (AY000223A01, AY000229A01) requires Clip Button NNTN8749	PMLN7633
APX 6000	 Clip Button	NNTN8749
APX 6000XE	 Clip Button	NNTN8749
<b>WIRELESS RSM ACCESSORIES AND REPLACEMENT PARTS</b>		
	 Dual Unit Charger, rapid rate charger, 120V (US Plug)	PMLN7120
APX 8000	 Vehicular Charger	PMLN6716
APX 8000XE		
APX 7000		
APX 7000XE		
APX 6000	 Wireless RSM with Battery and Clip, No Charger	RLN6544
APX 6000XE		
APX 4000		

## FIRE MARKET SOLUTION
























The XE and XE500 RSM clip paired with a clip button allows easy and secure access to your RSM when used with a Boston Radio Strap with Button Back Holder.

## APX WIRELESS RSM

Every feature on this RSM has been designed to access and designed to prevent








# APX PORTABLE RADIO ACCESSORIES

COMPATIBILITY		ACCESSORY		FEATURES		
REMOTE SPEAKER MICROPHONE ACCESSORIES AND REPLACEMENT PARTS						
PORTABLE RADIOS		DESCRIPTION	PART NUMBER	EARPIECE TYPE	CONNECTOR TYPE	HAZLOC-CAPABLE
APX 8000		 Receive-Only Earpiece with Comfort Earpiece, FM and UL approved	RLN4941	Clear Rubber Earpiece	3.5mm	FM UL
APX 8000XE		 Receive-Only Earpiece with Comfort Earpiece, Extra loud audio output	RLN4941_XL	Clear Rubber Earpiece	3.5mm	
APX 7000		 Receive-Only Earpiece with Comfort Earpiece	PMLN7560	Clear Rubber Earpiece	3.5mm	
APX 7000XE		 Receive-Only Earbud, FM and UL approved	AARLN4885	Foam Earbud	3.5mm	FM UL
APX 6000		 Receive-Only Earpiece, Loud Version. Required BDN6783 or NMM6274	RLN5313_XL	Clear Rubber Earpiece	3.5mm	
APX 6000XE		 EP7 Sonic Defender, use with RLN4941	RLN6511 RLN6512 RLN6513			
APX 4000		 Adjustable D-Style Earpiece	PMLN7396	Over-the-Ear	3.5mm	
APX 3000		 D-Shell Rx-Only Earpiece	PMLN4620	Over-the-Ear	3.5mm	FM UL
APX 1000		 Receive-Only Flexible Earpiece	WADN4190	Over-the-Ear	3.5mm	FM UL
		 Receive and Transmit Boomless Temple Transducer (for HMN4104, HMN4103 and HMN4101 only)	RMN5116	Over-the-Head	8-Pin	FM UL
		 Receive-Only Extra Loud Earpiece with Translucent Tube and Rubber Eartip (for HMN4104, HMN4103 and HMN4101 only)	RLN6424_XL	Clear Rubber Earpiece	8-Pin	FM UL
		 Replacement Foam Plugs for RLN5987				

**WHICH MICROPHONES?**

APX Remote Speaker Microphones and up to 50% louder. That's because

# APX PORTABLE RADIO ACCESSORIES





COMPATIBILITY	ACCESSORY	FEATURES
REMOTE SPEAKER MICROPHONE ACCESSORIES AND REPLACEMENT PARTS		
PORTABLE RADIOS	DESCRIPTION	PART NUMBER
APX 8000XE	 Interface Cable, 5-Pin Nexus Female Receptacle for HMN4104, HMN4103 and HMN4101	PMKN4107 5-Pin Nexus Female
APX 7000	 Interface Cable 4-Pin Nexus Male Plug for HMN4104, HMN4103 and HMN4101	PMKN4112 4-Pin Nexus Male
APX 7000XE	 Interface Cable, 12-Pin Hirose Male Connector for HMN4104, HMN4103 and HMN4101	PMKN4113 12-Pin Hirose Male
APX 6000		
APX 6000XE		
APX 4000		
APX 3000	 Replacement Coil Cord Kit for HMN4104, 4103 and 4101	3075336B17
APX 1000		
APX 900	 Replacement Coil Cord Kit for PMVMN4062, PMVMN4065, PMVMN4069, PMVMN4083 and PMVMN4099.	RLN6075
SRX 2200		

## WHICH MICROPHONE

### WINDPORTING AUDIO: I HEAR YOU, NOT THE WIND

If you work outdoors in demanding weather, a Windporting microphone is right for you. It reduces the effects of wind and other sounds whenever you use the microphone. It also prevents wattage from clogging the microphone for clear transmissions.

COMPATIBILITY	ACCESSORY	FEATURES
PUBLIC SAFETY MICROPHONES		
PORTABLE RADIOS	DESCRIPTION	PART NUMBER
APX 7000 700/800 MHz only	 Public Safety Microphone (30 inch cable) PSM Antenna required. VHF not supported.	PMMN4061
APX 6000 700/800 MHz	 Public Safety Microphone (24 inch cable) PSM Antenna required. VHF not supported. Recommended for use with UHF radios.	PMMN4060

IMPRES AUDIO	MICROPHONE NOISE SUPPRESSION	VOLUME CONTROL	ORANGE PROGRAMMABLE BUTTON	PROGRAMMABLE BUTTON	AUDIO JACK	IP RATING	HAZARD CAPABILITY
●	Windporting	 High/Low		1	3.5 mm	IP55	FM UI
●	Windporting	 High/Low		1	3.5 mm	IP55	FM UI


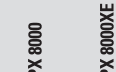




## HOW DOES COMMPORT™ WORK?

The miniature microphone and receiver connect to your APX radio and fasten securely and comfortably to your ear. Unlike bone conduction or boom mic technology, the CommPort System picks up sound waves as they cross the face so you hear and can be heard virtually in any environment.

## APX PORTABLE RADIO ACCESSORIES

COMPATIBILITY	ACCESSORY	PART NUMBER
APX 8000	 Replacement Palm PTT for RLNG480	NKN6510
APX 8000XE		
APX 7000	 Replacement Cable for RLNG481	NKN6508
APX 7000XE		
APX 6000		
APX 6000XE		
APX 4000		
APX 3000		

COMPATIBILITY	ACCESSORY
COMMPORT™	
PORTABLE RADIOS	DESCRIPTION
APX 8000	
APX 8000XE	
APX 7000	
APX 7000XE	
APX 6000	
APX 6000XE	
APX 4000	
APX 3000	
SRX 2200	

# APX PORTABLE RADIO ACCESSORIES

COMPATIBILITY		ACCESSORY				FEATURES			
EAR MICROPHONE SYSTEM									
PORTABLE RADIOS	DESCRIPTION	PART NUMBER	IMPRES	EARRPIECE TYPE	MICROPHONE	PTT	PROGRAMMABLE BUTTON		
APX 7000 APX 7000XE APX 6000 APX 6000XE APX 4000 APX 3000 APX 1000 APX 900 SRX 2200	 <p>IMPRES Ear Microphone with Bone Conduction and programmable button, black</p>	PMLN5653	●	In-Ear Mic	In-Ear Mic	Large, Ring-guarded, Recessed			
<h2>HOW DOES IMPRES IMPROVE AUDIO PERFORMANCE?</h2> <p>IMPRES enhances the clarity and audio quality of Motorola accessories by reducing ambient noise and improving voice intelligibility. If you speak quietly or normally, but not directly into a microphone, IMPRES Audio detects changes in your voice and automatically adjusts the transmitted volume so your listener won't have to adjust volume up and down.</p>									

COMPATIBILITY		ACCESSORY				FEATURES			
SURVEILLANCE KITS									
PORTABLE RADIOS	DESCRIPTION	PART NUMBER	IMPRES	EARRPIECE TYPE	MICROPHONE	PTT	PROGRAMMABLE BUTTON		
APX 8000 APX 7000 APX 7000XE APX 6000 APX 6000XE APX 4000	 <p>1-Wire Receive-only Earpiece, Black</p>	PMLN6125	●	Ear Hanger					
	 <p>1-Wire Receive-only Earpiece, Beige</p>	PMLN6126	●	Ear Hanger					
<p><b>SURVEILLANCE KITS</b> Transmit and receive discreetly with a variety of surveillance kits that feature a streamlined design and rugged cables that withstand tough conditions. A quick-disconnect, durable and comfortable translucent tube enables easy sharing between shifts.</p>									
<p>Two-wire kits have one wire for receiving transmit Three-wire kits feature separate wires for receive and transmit</p>									

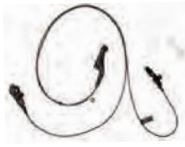



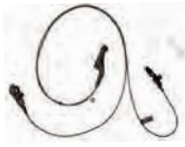












# APX PORTABLE RADIO ACCESSORIES

COMPATIBILITY

ACCESSORY

FEATURES

## SURVEILLANCE KITS

PORTABLE RADIOS	DESCRIPTION	PART NUMBER	IMPRES	EARPIECE TYPE	MICROPHONE	PTT	PROGRAMMABLE BUTTON
APX 8000 APX 7000 APX 7000XE APX 6000 APX 6000XE APX 4000 APX 3000 APX 1000 APX 900 SRX 2200	 <p>IMPRES 2-Wire Surveillance Kit with Translucent Tube, Programmable Button, Black</p>	PVILN6129	●	Clear Rubber Eartip	 <p>Mic and PTT Combined on a Single Wire</p>	 <p>Mic and PTT Combined on a Single Wire</p>	
	 <p>IMPRES 2-Wire Surveillance Kit with Translucent Tube, Programmable Button, Beige</p>	PVILN6130	●	Clear Rubber Eartip	 <p>Mic and PTT Combined on a Single Wire</p>	 <p>Mic and PTT Combined on a Single Wire</p>	
APX 7000 APX 7000XE	 <p>IMPRES 3-Wire Surveillance Kit with Translucent Tube, Programmable Button, Black</p>	PVILN6123	●	Clear Rubber Eartip	 <p>Separate Wire</p>	 <p>Separate Wire</p>	
APX 6000 APX 6000XE	 <p>IMPRES 3-Wire Surveillance Kit with Translucent Tube, Programmable Button, Beige</p>	PVILN6124	●	Clear Rubber Eartip	 <p>Separate Wire</p>	 <p>Separate Wire</p>	
APX 4000 APX 3000 APX 1000	 <p>1-Wire Receive-Only Surveillance Kit with Earpiece, Black, 3.5mm Threaded. Requires BDN6783.</p>	BDN6726		Ear Hanger			



# APX PORTABLE RADIO ACCESSORIES

COMPATIBILITY

ACCESSORY







VERTICAL MARKETS: Recommendations

## SURVEILLANCE KITS

PORTABLE RADIOS	DESCRIPTION	PART NUMBER	EARPIECE TYPE	MICROPHONE	PTT	HAZLOC-CAPABLE*	POLICE	FIRE / EMS	MILITARY
 <p>APX 8000</p>	 <p>1-Wire Receive-Only Surveillance Kit with Translucent Tube, Black, 3.5mm Threaded. Requires BDN6783.</p>	RLN5313	Clear Rubber Eartip			UL	●		●
 <p>APX 6000XE</p>	 <p>1-Wire Receive-Only Surveillance Kit with Translucent Tube, Black, Loud version, 3.5mm Threaded. Requires BDN6783 or NIMN6274.</p>	RLN5313_XL	Clear Rubber Eartip				●		●
 <p>APX 7000</p>	 <p>2-Wire Surveillance Kit with Translucent Tube, Black, 3.5mm Threaded. Requires BDN6783.</p>	RLN5312	Clear Rubber Eartip	Mic and PTT Combined on a Single Wire	Mic and PTT Combined on a Single Wire		●		●
 <p>APX 7000XE</p>	 <p>2-Wire Surveillance Kit with Earpiece, Black, 3.5mm Threaded. Requires BDN6783.</p>	BDN6729	Ear Hanger	Mic and PTT Combined on a Single Wire	Mic and PTT Combined on a Single Wire	UL	●		●
 <p>APX 6000</p>	 <p>2-Wire Surveillance Kit with Extra-Loud Earpiece, Beige, 3.5mm Threaded. Requires BDN6783.</p>	BDN6669	Ear Hanger	Mic and PTT Combined on a Single Wire	Mic and PTT Combined on a Single Wire	FM approved with APX6000/6000XE APX7000/7000XE	●		●
 <p>APX 6000XE</p>	 <p>2-Wire Surveillance Kit with Extra-Loud Earpiece, Black, 3.5mm Threaded. Requires BDN6783.</p>	BDN6731	Ear Hanger	Mic and PTT Combined on a Single Wire	Mic and PTT Combined on a Single Wire	UL	●		●
 <p>APX 4000</p>	 <p>3-Wire Surveillance Kit with Earpiece, Beige, 3.5mm Threaded. Requires BDN6783.</p>	BDN6668	Ear Hanger	Separate Wire	Separate Wire	UL	●		●
 <p>APX 3000</p>	 <p>3-Wire Surveillance Kit with Earpiece, Black, 3.5mm Threaded. Requires BDN6783.</p>	BDN6730	Ear Hanger	Separate Wire	Separate Wire	UL	●		●

# APX PORTABLE RADIO ACCESSORIES









COMPATIBILITY		ACCESSORY		FEATURES	
SURVEILLANCE KIT ACCESSORIES AND REPLACEMENT PARTS					
PORTABLE RADIOS		DESCRIPTION		PART NUMBER	
		EARRPIECE TYPE		COMPATIBLE SURVEILLANCE KITS	
	APX 8000XE		Completely Discreet Earpiece Kit with Neckloop. Beige. Includes GMLN5261, RLN4920 and RNN4005	PMLN7696	
	APX 7000		Phonak Nano Ear Receiver, Beige (Neckloop must be ordered separately)	GMLN5261	
	APX 7000XE		Phonak Nano Ear Receiver, Brown (Neckloop must be ordered separately)	GMLN5262	
	APX 6000		Replacement Earwax Guards. 5 per pack. Compatible with PMLN7696	RLN4919	
	APX 6000XE		Optional Retention Hooks. Pack of 10	NNTN8457	
	APX 4000		Phonak Inductive Neckloop Included in the PMLN7696	RLN4920	
	APX 3000		1.4 Volt Battery – Pack of 6	RNN4005	
	APX 1000		Low Noise Kit with Quick Disconnect Translucent Tube and Clear Rubber Eartip	RLN6242	PMLN6123, PMLN6124, PMLN6129, PMLN6130
	APX 900		Replacement Standard Clear Rubber Eartip, Pack of 50	RLN6282	PMLN6123, PMLN6124, PMLN6125, PMLN6126, PMLN6127, PMLN6128, PMLN6129, PMLN6130
			Replacement Foam Plugs for RLN5887 and RLN6242. Noise reduction = 25dB.* Pack of 50 pairs.	5080384F72	PMLN6123, PMLN6124, PMLN6129, PMLN6130
			Low Noise Kit with 1 Clear Rubber Eartip	RLN5886	RLN5882, RLN5883, PMLN5111, PMLN5112, PMLN6125, PMLN6126
			High Noise Kit* with 2 Foam Earplugs	RLN5887	
			Clear EP7 Small Hearing Protectors		

COMPATIBILITY	ACCESSORY
SURVEILLANCE KIT ACCESSORIES AND REPLACEMENT PARTS	
PORTABLE RADIOS	DESCRIPTION
APX 8000	
APX 8000XE	
APX 7000	
APX 7000XE	
APX 6000	
APX 6000XE	
APX 4000	
APX 3000	
APX 1000	
APX 900	
SRX 2200	













**XBT HEAVY-DUTY WIRELESS**  
 It's the middle of a shift and you need to communicate on your radio. Connect wirelessly to your radio for situational awareness technology in the field with you.

## APX PORTABLE RADIO ACCESSORIES

COMPATIBILITY		ACCESSORY									
HEADSETS		FEATURES									
PORTABLE RADIOS	DESCRIPTION	PART NUMBER	IMPRES	HEADSET TYPE	SPEAKER	NOISE-CANCELLING/ NOISE-REDUCTION	MICROPHONE	PIT	HAZLOC-CAPAB		
APX 8000 APX 8000XE APX 7000 APX 7000XE APX 6000 APX 6000XE APX 4000 APX 3000 APX 1000 APX 900 SRX 2200	 IMPRES Temple Transducer with Boom Microphone and In-line Push-To-Talk Replacement Rubber Temple Cover (1 Pair) 7580384M19	PMLN15101	●	Behind-the-Head	Bone Conduction		Boom	In-line	FM UL		
	 Earsset D-Shell	PMLN5096		Over-the-Ear	Single-Ear		Boom	In-line	UL		
	 Ultra Lite Headset	PMLN15102		Over-the-Head	Single-Ear		Boom	In-line	UL		
	 Heavy-Duty Behind-the-Head Headset with Noise-Cancelling Boom Microphone, Noise Reduction = 24dB	PMLN6852		Behind-the-Head	Dual-Ear	●	Boom	On Ear Cup	UL		
	 Heavy-Duty Behind-the-Head Headset with Noise-Cancelling Boom Microphone, Noise Reduction = 24dB	PMLN6853		Behind-the-Head	Dual-Ear	●	Boom	On Ear Cup	UL		
	 Heavy-Duty Over-the-Head Headset with Noise-Cancelling boom Microphone, Noise Reduction = 24dB	PMLN7466		Over-the-Head	Dual-Ear	●	Boom	On Ear Cup	UL		
	 Heavy-Duty Over-the-Head Headset with Noise-Cancelling Boom Microphone, Noise Reduction = 24dB	PMLN7467		Over-the-Head	Dual-Ear	●	Boom	On Ear Cup	UL		
APX 8000 APX 8000XE APX 6000XE APX 4000	 Lightweight Over-the-Head Headset Single Muff with in-line Push-To-Talk & Boom Mic			Over-					FM		



# APX PORTABLE RADIO ACCESSORIES

COMPATIBILITY		ACCESSORY				FEATURES					
3M PELTOR HEAVY DUTY HEADSETS		DESCRIPTION AND ADAPTER TYPE		PART NUMBER	PELTOR PART NUMBER	HEADSET TYPE	CONNECTOR TYPE	SPEAKER	NOISE REDUCTION RATING (NRR)	NOISE-CANCELLING MICROPHONE	PTT (APX)
<b>DIRECT CONNECT</b>											
APX 8000		MT Series Over-the-Head Headset, Direct Radio Connect		RMN5137	MT7H79A-C5063-34	Over-the-Head	Connects directly to Radio	Dual-Ear	25dB	Boom	On Ear Cup
APX 8000XE		MT Series Neckband Headset, Direct Radio Connect		RMN5138	MT7H79B-C5063-34	Neckband	Connects directly to Radio	Dual-Ear	24dB	Boom	On Ear Cup
APX 7000		MT Series Hard Hat Attached Headset, Direct Radio Connect		RMN5139	MT7H79P3E-C5063-34	Hard Hat Attached	Connects directly to Radio	Dual-Ear	21dB	Boom	On Ear Cup
APX 7000XE											
APX 6000											
APX 6000XE											
APX 4000											
APX 3000											
SRX 2200											
<b>PTT ADAPTER CONFIGURATIONS</b>											
		MT Series Over-the-Head Headset with Nexus Connector		PMLN6088	MT7H79A-34	Over-the-Head	Nexus	Dual-Ear	25dB	Boom	Requires PTT Adapter PMLN6095
		MT Series Neckband Headset with Nexus Connector		RLN6477	MT7H79B-34	Neckband	Nexus	Dual-Ear	24dB	Boom	Requires PTT Adapter PMLN6095
		MT Series Hard Hat Attached with Nexus Connector		RMN4051	MT7H79P3E-34	Hard Hat Attached	Nexus	Dual-Ear	21dB	Boom	Requires PTT Adapter PMLN6095
APX 8000		TacticalPro Series Over-the-Head Headset with Nexus Connector		RMN4052	MT15H7A-34	Over-the-Head	Nexus	Dual-Ear	26dB	Boom	Requires PTT Adapter PMLN6095
APX 8000XE		TacticalPro Series Neckband Headset with Nexus Connector		RMN5135	MT15H7B-07-34	Neckband	Nexus	Dual-Ear	25dB	Boom	Requires PTT Adapter PMLN6095
APX 7000		TacticalPro Series Hard Hat Attached with Nexus Connector		RMN4053	MT15H7P3E-34	Hard Hat Attached	Nexus	Dual-Ear	22dB	Boom	Requires PTT Adapter PMLN6095
APX 7000XE		PTT Nexus Adapter. Requires one of the six headsets listed directly above		PMLN6095	FL5063-34						
APX 6000											
APX 6000XE											
APX 4000											
APX 3000											
SRX 2200											

## RSM CONFIGURATIONS

# APX PORTABLE RADIO ACCESSORIES



COMPATIBILITY		ACCESSORY		FEATURES							VERTICAL MARKETS: Recommendations based on typical use c							
HEARING PROTECTION				PART NUMBER	IMPRES	HEADSET TYPE	SPEAKER	NOISE-CANCELLING/ NOISE-REDUCTION	POLICE	FIRE / EMS	MILITARY							
PORTABLE RADIOS				DESCRIPTION														
APX 8000	APX 8000XE	APX 7000	APX 7000XE	APX 6000	APX 6000XE	APX 4000	APX 3000	APX 1000	APX 900	SRX 2200	Clear EP7-Small Hearing Protectors [Sonic Defenders] Ultra Earplugs, noise reduction = 28dB	RLN6511	Comply™ Foam Ear tip	Noise-Reduction				
											Clear EP7-Medium Hearing Protectors [Sonic Defenders] Ultra Earplugs, noise reduction = 28dB	RLN6512	Comply™ Foam Ear tip	Noise-Reduction				
											Clear EP7-Large Hearing Protectors [Sonic Defenders] Ultra Earplugs, noise reduction = 28dB	RLN6513	Comply™ Foam Ear tip	Noise-Reduction				
<b>TACTICAL SOLUTIONS</b>																		
APX 8000											Tactical PTT/VOX Interface Module	PMLN6765						
APX 8000XE											Tactical PTT Only Interface Module	PMLN6827						
APX 7000											Tactical Boomless Temple Transducer Requires Interface Module PMLN6765 or PMLN6827.	PMLN6766	Over- the-Head	Bone Conduction	Noise-Cancelling			
APX 7000XE											Tactical Throat Microphone Requires Interface Module PMLN6765 or PMLN6827.	PMLN6828	Neckband	Earbud	Noise-Cancelling			
APX 6000											Tactical Ear Microphone Requires Interface Module PMLN6765 or PMLN6827.	PMLN6829	In-Ear	In-Ear	Noise-Cancelling			
APX 6000XE											Tactical Temple Transducer / Boom Mic Requires Interface Module PMLN6765 or PMLN6827.	PMLN6833	Over- the-Head	Bone Conduction	Noise-Cancelling			

## HOW DO MISSION CRITICAL WIRELESS ACCESSORIES HELP ME?

They free you from being physically connected to the radio and are ideal for surveillance operations. They look CONSUMER, but are mission critical in performance and provide exceptional flexibility, high security, superior audio performance and a new dimension of freedom. Carry your radio in a backpack, bag or purse without being constrained by wires. YOUR RADIO, UNLEASHED.




















## APX PORTABLE RADIO ACCESSORIES

COMPATIBILITY		ACCESSORY									
MISSION CRITICAL WIRELESS (MCW) ACCESSORIES		This portfolio is a game changer, giving you the flexibility to remove the radio from your belt and stay connected within 30 feet.									
PORTABLE RADIOS	DESCRIPTION	PART NUMBER	EARPIECE TYPE	MICROPHONE	PTT	TALK TIME (HOURS) 5/5/90 DUTY CYCLE	CHARGE TIME (HOURS)	WEIGHT (GRAMS)	SIZE (MM)	RANGE (FEET LINE OF SIGHT)	
APX 8000 APX 8000XE APX 7000 APX 7000XE APX 6000 APX 6000XE APX 4000 APX 3000 SRX 2200	 <p>Mission Critical Wireless Earpiece with 12" Cable and Push-To-Talk Pod</p>	NTN2570	Over-the-Ear (CommPort™)	Directional, above the Earpiece	●	10	3	43	70 x 41 x 25	30	
	 <p>Mission Critical Wireless Push-To-Talk Pod</p>	NTN2571			●	10	3	43	70 x 41 x 25	30	



# APX PORTABLE RADIO ACCESSORIES

COMPATIBILITY		ACCESSORY		FEATURES			
PORTABLE RADIOS		DESCRIPTION		PART NUMBER	EARPIECE TYPE	MICROPHONE	PTT
<b>MISSION CRITICAL WIRELESS (MCW) ACCESSORIES</b> This portfolio is a game changer, giving you the flexibility to remove the radio from your belt and stay connected within 30 feet.		<b>MISSION CRITICAL WIRELESS (MCW) ACCESSORIES</b> and stay connected within 30 feet.					
APX 8000		Single-wire Surveillance Kit With Quick Disconnect Translucent Tube for Wireless Push-to-Talk Pod		PMLN7052	Clear Rubber EarTip	In-line	On Pod, ordered separately
APX 8000XE		Single-wire Earbud with 11.5" Cable for Wireless Push-to-Talk Pod, Black		NNNTN8294	Earbud	In-line	On Pod, ordered separately
APX 7000		Single-wire Earbud with 45" Cable for Wireless Push-to-Talk Pod, Black		NNNTN8295	Earbud	In-line	On Pod, ordered separately
APX 7000XE		Covert Audio Kit for Mission Critical Wireless PTT Pod		NNNTN8296	1 Earbud and 2 Earbud Headsets	In-line	On Pod, ordered separately
APX 6000		Y-Adapter and Retention Hook for Mission Critical Wireless Push-to-Talk Pod		NNNTN8385	Directional, on Separate Wire	Directional, on Separate Wire	On Pod, ordered separately
APX 6000XE		Neckloop for Discreet Earpiece Kit		RLN4920			
APX 4000		Accessory Kit for Completely Discreet Wireless Surveillance Kit. Includes: Wireless Neckloop, Y-adapter and Retention Hook (NNNTN8385), Completely Discreet Earpiece Kit (PMLN7696) and Mission Critical Wireless Push-To-Talk Pod (NTN2571)		NNNTN8434			
APX 3000		Commercial 3.5mm Earbud Headset Adapter, 10 per pack		NNNTN8737			
		Replacement Wireless Earpiece Cable, 12 inch		NTN2572	Over-the-Ear (CommPort™)	Directional above the Ear CommPort	On Pod, ordered separately

## COMPATIBILITY

## ACCESSORY

## DESCRIPTION

## PORTABLE RADIOS

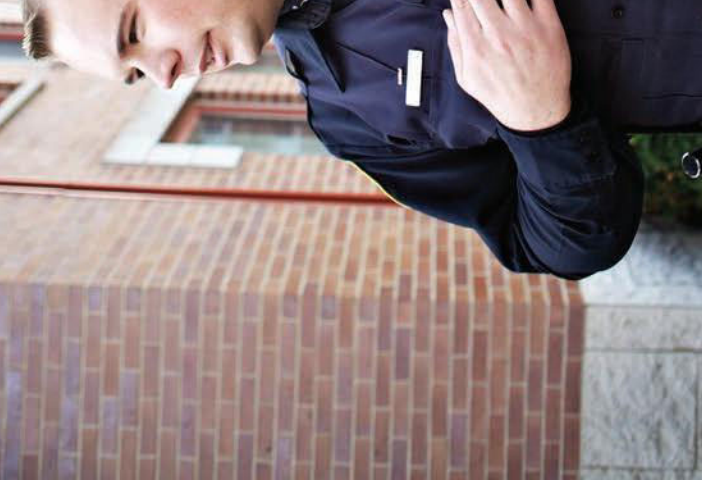
## MISSION CRITICAL WIRELESS (MCW) ACCESSORIES










## DESCRIPTION





APX 8000	
APX 8000XE	
APX 7000	
APX 7000XE	
APX 6000	
APX 6000XE	
APX 4000	
APX 3000	
SRX 2200	

**WHAT MAKES THE CO PACK-AND-GO KIT A M**  
Organize and stow all your AP










# APX PORTABLE RADIO ACCESSORIES



COMPATIBILITY		ACCESSORY		FEATURES			
PORTABLE RADIOS		DESCRIPTION		PART NUMBER	EARPIECE TYPE	MICROPHONE	PTT
 <b>APX 900</b>	<b>OPERATIONS CRITICAL WIRELESS (OCW) ACCESSORIES</b> This portfolio is a game changer, giving you the flexibility to remove the radio from your belt and stay connected within 30 feet.		EP900W Operations Critical Wireless Earpiece with PTT	PMLN7851	Over-the-Ear (Swivel)	In-line	On Pod
			Bluetooth Accessory Kit with Flexible Earpiece, Bluetooth Pod, and Charging Cradle with Power Supply	RLN6500	Over-the-Ear (Swivel)	Boom	On Earpiece
			Flexible Earpiece With Boom Microphone for RLN6500	PMLN7203	Over-the-Ear (Swivel)	Boom	On Pod, ordered separately
			Operations Critical Wireless Earpiece with 12 Inch Cable	NNTN8125	Over-the-Ear (CommPort <sup>™</sup> )	Directional, above the Earpiece	On Pod
			Operations Critical Wireless Push-to-Talk Pod with Charger	NNTN8127			On Pod
			Accessory Kit for Completely Discreet Wireless Surveillance Kit. Includes: Wireless Neckloop, Y-adapter and Retention Hook (NNTN8385), Completely Discreet Earpiece Kit (PMLN7696) and Mission Critical Wireless Push-To-Talk Pod (NTN2571)	NNTN8434			
			Single-wire Surveillance Kit With Quick Disconnect Translucent Tube for Wireless Push-to-Talk Pod for Pod	PMLN7052	Clear Rubber EarTip	In-line	On Pod, NNTN8127 ordered separately
			Single-wire Earbud with 11.5" Cable for Wireless Push-to-Talk Pod, Black	NNTN8294	Earbud	In-line	On Pod, NNTN8127 ordered separately
		<b>APX 8000</b>					
		<b>APX 8000XE</b>					
<b>APX 7000</b>							
<b>APX 7000XE</b>							
<b>APX 6000</b>							
<b>APX 6000XE</b>							
<b>APX 4000</b>							

COMPATIBILITY	ACCESSORY	DESCRIPTION
		
<b>APX 8000</b>		
<b>APX 8000XE</b>		
<b>APX 7000</b>		
<b>APX 7000XE</b>		
<b>APX 6000</b>		
<b>APX 6000XE</b>		
<b>APX 4000</b>		
<b>APX 3000</b>		
<b>APX 900</b>		

# APX PORTABLE RADIO ACCESSORIES

COMPATIBILITY		FEATURES									
ACCESSORY		DESCRIPTION	PART NUMBER	IMPRES	CHEMISTRY	TYPICAL RATED CAPACITY (mAh)	DIMENSIONS (MILLIMETERS) (H x W x D)	WEIGHT (MAX. GRAMS)	HAZLOC-CAPABLE	IP RATING	
PORTABLE RADIOS	MOTOROLA IMPRES 2 BATTERIES										
APX 8000		 IMPRES 2 Li-Ion 3400 mAh Battery, IP68 Rugged	PMINN4486	●	Li-Ion	3400	86 x 59 x 42	185		IP68 Rugged	
APX 7000		 IMPRES 2 Li-Ion 2550 mAh Battery, IP68 Rugged	PMINN4485	●	Li-Ion	2550	86 x 59 x 37	150		IP68 Rugged	
APX 7000XE		 IMPRES 2 Li-Ion 4850 mAh Battery, IP68 Rugged, -30°C Rated	PMINN4487	●	Li-Ion	4850	130 x 59 x 42	320		IP68 Rugged	
APX 6000		 IMPRES 2 Li-Ion 5100 mAh Battery, IP68 Rugged	PMINN4494	●	Li-Ion	5100	130 x 59 x 42	320		IP68 Rugged	
APX 6000XE		 IMPRES 2 Li-Ion 3100 mAh Battery, IP68 Rugged	PMINN4547	●	Li-Ion	3100	86 x 59 x 45	200	UL	IP68 Rugged	
SRX 2200		 IMPRES 2 Li-Ion 4600 mAh Battery, IP68 Rugged	PMINN4573	●	Li-Ion	4600	130 x 59 x 42	320	UL	IP68 Rugged	
APX 8000XE		 IMPRES 2 Li-Ion 3400 mAh Battery, IP68 Rugged	PMINN4504	●	Li-Ion	3400	86 x 59 x 42	185	UL	IP68 Rugged	
		 IMPRES 2 Li-Ion 4850 mAh Battery, IP68 Rugged, -30°C Rated	PMINN4505	●	Li-Ion	4850	130 x 59 x 42	320	UL	IP68 Rugged	
APX 7000		 IMPRES 2 Li-Ion 2350 mAh Battery								IP68	

**MOTOROLA IMPRES BATTERIES** The only batteries developed, tested and certified for optimal performance with your APX radio. APX batteries are Proven Tough, in lab test after lab test, to withstand shocks, knocks, drops and shakes and outperform the other brands.














# APX PORTABLE RADIO ACCESSORIES

## COMPATIBILITY

## ACCESSORY

## FEATURES

**MOTOROLA IMPRES BATTERIES** The only batteries developed, tested and certified for optimal performance with your APX radio. APX batteries are Proven Tough, in lab test after lab test, to withstand shocks, knocks, drops and snakes and outperform the other brands.

PORTABLE RADIOS	DESCRIPTION	PART NUMBER	IMPRES	CHEMISTRY	TYPICAL RATED CAPACITY (mAh)	DIMENSIONS (MILLIMETERS) (H x W x D)	WEIGHT (MAX. GRAMS)	HAZLOC-CAPABLE <sup>1</sup>	IP RATING
APX 7000 APX 7000XE APX 6000	 IMPRES NIMH 2200 mAh Battery IP68 Rugged	NNTN7035	●	NIMH	2200	136 x 59 x 40	335	FM	● IP68 Rugged
	 APX Clamshell Battery Pack, IP57 Requires 12 AA Alkaline batteries (not included).	PMNNA4439			AA Alkaline/ Li-Ion	Alkaline: 2700 Li-Ion: 6100	165 x 60 x 60	Alkaline: 476 Li-Ion: 380	
SRX 2200	 Military, Li-Ion 3100 mAh, Battery IP68 Rugged, Coyote Brown	NNTN8182		Li-Ion	3100	86 x 59 x 42	185		● IP68 Rugged
	 IMPRES Li-Ion 2000 mAh Slim Battery, IP67	NNTN8128	●	Li-Ion	2000	115 x 52 x 18	160		● IP67
APX 4000 APX 3000 APX 1000 APX 900	 IMPRES Li-Ion 2350 mAh Battery, IP67	PMNNA4424	●	Li-Ion	2350	115 x 52 x 23	170		● IP67
	 IMPRES Li-Ion 2800 mAh Battery, IP67	PMNNA4448	●	Li-Ion	2800	115 x 52 x 23	170		● IP67
 APX 900	 IMPRES Li-Ion 2900 mAh Battery, IP68	PMNNA4489	●	Li-Ion	2900	115 x 52 x 23	170	UL	● IP68
	 IMPRES Li-Ion 2100 mAh Battery, IP68	PMNNA4491	●	Li-Ion	2100	115 x 52 x 18	160		● IP68
APX 4000	 IMPRES Li-Ion 3000 mAh Battery, IP68	PMNNA4493	●	Li-Ion	3000	115 x 52 x 23	170		● IP68
	 IMPRES Hi-Cap Li-Ion 2500 mAh Battery, IP57	NNTN8560	●	Li-Ion	2500	113 x 52 x 23	195	UL	● IP57







# APX PORTABLE RADIO ACCESSORIES

COMPATIBILITY		ACCESSORY		FEATURES							
PORTABLE RADIOS		DESCRIPTION		PART NUMBER	IMPRES	CHEMISTRY	POWER SOURCE	DIMENSIONS (MILLIMETERS) (H x W x D)	NUMBER OF POCKETS	CHARGING CURRENT (MAX.)	
<b>CHARGER SOLUTIONS</b> Choose from a variety of solutions including single-unit, unique dual-unit, multi-unit, travel and vehicular chargers and be confident your radio is charged and ready to go the moment you need it.											
<b>VEHICULAR, TRAVEL CHARGERS AND VEHICULAR ADAPTER</b>											
APX 8000 APX 8000XE APX 7000 APX 7000XE APX 6000 APX 6000XE SRX 2200	 <p>IMPRES Single-Unit Rapid Rate Vehicular Charger</p>		NNTN7624	●	Li-Ion, NiMH	12VDC Hardwire	82 x 97 x 200	1		Rapid Rate	
APX 4000 APX 3000 APX 1000 APX 900	 <p>IMPRES Single-Unit Rapid Rate Vehicular Charger</p>		NNTN7616	●	Li-Ion, NiMH	12VDC Hardwire	82 x 97 x 200	1		Rapid Rate	
APX 8000 APX 8000XE APX 7000 APX 7000XE APX 6000 APX 6000XE SRX 2200	 <p>Travel Charger with Voltage Regulated Vehicular Charger Adapter, Custom Charger Base, Mounting Bracket, and Coil Cord</p>		RLN6434		Li-Ion, NiMH	12VDC Cigarette Lighter Adapter	67 x 67 x 70	1			
APX 4000 APX 3000 APX 1000 APX 900	 <p>Travel Charger with Voltage Regulated Vehicular Charger Adapter, Custom Charger Base, Mounting Bracket, and Coil Cord</p>		NNTN8525		Li-Ion, NiMH	12VDC Cigarette Lighter Adapter	64 x 67 x 57	1			
APX 8000 APX 8000XE APX 6000 APX 6000XE	 <p>APX Vehicular Adapter includes Fused Power Cable, 2 Keys for the Lock, Screws for Attaching Vehicular Adapter to the Trunion Mounting Bracket &amp; Quick Start Guide. Trunion mounting bracket NNTN8940 ordered separately.</p>		NNTN8527		Li-Ion	12VDC Hardwire	254 x 137 x 84	1		Rapid Rate	



# APX PORTABLE RADIO ACCESSORIES

COMPATIBILITY		ACCESSORY
CHARGER SOLUTIONS		
PORTABLE RADIOS	DESCRIPTION	PART NUMBER
<b>IMPRES BATTERY MANAGEMENT TOOLS</b>		
APX 8000 APX 8000XE APX 7000 APX 7000XE APX 6000 APX 6000XE APX 4000 APX 3000 APX 1000 APX 900 SRX 2200	 <p>IMPRES Battery Fleet Management Software</p> <p><a href="https://www.motorolasolutions.com/en_us/products/two-way-radio-accessories/batteries/impres.html">https://www.motorolasolutions.com/en_us/products/two-way-radio-accessories/batteries/impres.html</a></p>	
	 <p>IMPRES Battery Fleet Management License Key</p>	HKVN4036
	IMPRES 2 single unit charger (NNTN8860, NNTN8860_TAA, NNTN8863) reprogramming and Battery Fleet Management interface cable	NNTN8870
<b>KEYLOAD CABLES</b>		
APX 8000  APX 8000XE	 <p>Keyload RS-232 Cable</p>	WPLN6905
APX 7000 APX 7000XE APX 6000 APX 6000XE APX 4000 APX 3000 SRX 2200	 <p>Keyloader Cable, KVL3000 and KVL4000</p>	WPLN6904



**HOW DO I KNOW MY E**

With the unique IMPRES Battery batteries with real-time data not

## CARRY SOLUTIONS







Motorola Carry Solutions were developed to meet the demands of public safety and other users who operate in the most rigorous of environments. A variety of carrying accessories are available for comfort and convenience.



## LEATHER CARRY CASE















Motorola Leather Carry Cases are constructed of top-grain leather and are designed to withstand the harsh conditions of public safety users.

## APX PORTABLE RADIO ACCESSORIES

COMPATIBILITY	ACCESSORY	FEATURES					
<b>CARRY SOLUTIONS</b> Our carry accessories keep your hands-free, so you can concentrate on the task at hand.							
PORTABLE RADIOS	DESCRIPTION	PART NUMBER	MATERIAL	BELT LOOP/CLIP DIMENSION (INCHES)	SWIVEL/FIXED	D-RINGS	COMPATIBLE BATTERIES
APX 7000	 Carry Holder for 1.5, 2.5 and 3.5 Model Radios	PMLN5331	Plastic	3	Fixed		
APX 7000XE	 Carry Holder for 1.5, 2.5 and 3.5 Model Radios	PMLN6102	Plastic	3	Fixed		
APX 8000 APX 6000	 Carry Holder for 1.5, 2.5 and 3.5 Model Radios	PMLN7901	Plastic	2.5	Fixed		
APX 8000XE APX 6000XE	 Carry Holder for 1.5, 2.5 and 3.5 Model Radios	PMLN7902	Plastic	2.5	Fixed		
APX 3000	 Covert Carry Holster	PMLN6327	Plastic	3	Fixed		
	 Leather Carry Case with 3" Fixed Belt Loop	PMLN5323	Hard Leather	3	Fixed	●	NNTN7038 NNTN8092 NNTN8930 PMMN4403 PMMN4485

COMPATIBILITY	ACCESSORY
<b>CARRY SOLUTIONS</b>	
PORTABLE RADIOS	DESCRIPTION
APX 7000	 Carry Holder for 1.5, 2.5 and 3.5 Model Radios
	 Carry Holder for 1.5, 2.5 and 3.5 Model Radios
	 Carry Holder for 1.5, 2.5 and 3.5 Model Radios
	 Covert Carry Holster
APX 8000 APX 8000XE APX 7000 APX 7000XE	 Leather Carry Case with 3" Fixed Belt Loop

# APX PORTABLE RADIO ACCESSORIES

COMPATIBILITY		ACCESSORY		FEATURES					
CARRY SOLUTIONS		CARRY SOLUTIONS		PART NUMBER	MATERIAL	BELT LOOP/CLIP DIMENSION (INCHES)	SWIVEL / FIXED	D-RINGS	COMPATIBLE BATTERIES
PORTABLE RADIOS	DESCRIPTION								
 <b>APX 7000XE</b>		NNTN8111	Hard Leather	2.75	Swivel				NNTN7038 NNTN8092 PMVN4403
		NNTN8113	Hard Leather	2.75	Swivel	●			NNTN7033 NNTN7034 PMVN4487 PMVN4494 NNTN8921
		NNTN8115	Hard Leather	2.75	Swivel	●			NNTN7035 NNTN7036 NNTN7037 NNTN7573
		AY000222A01	Hard Leather				●		
 <b>APX 8000</b>		PMLN7903	Hard Leather	3	Fixed	●			NNTN7038 NNTN8092 PMVN4403 PMVN4485 PMVN4486 PMVN4547 NNTN8930 (for APX 6000)
		PMLN5660	Hard Leather	3	Fixed	●			NNTN7033 NNTN7034 PMVN4487 PMVN4494 NNTN8921 (for APX 6000)
		PMLN7904	Hard Leather	2.75	Swivel	●			NNTN8092 PMVN4485 PMVN4486 PMVN4547 NNTN8930 (for APX 6000)
		PMLN5659	Hard Leather	2.75	Swivel	●			NNTN7033 NNTN7034 PMVN4487 PMVN4494 NNTN8921 (for APX 6000)
 <b>APX 4000</b>									
									
									

COMPATIBILITY

CARRY SOLUTIONS

ACCESSORY

PORTABLE RADIOS

PORTABLE RADIOS

DESCRIPTION

APX 8000XE

APX 6000XE












APX 4000























APX 1000

SRX 2200






# APX PORTABLE RADIO ACCESSORIES

COMPATIBILITY		ACCESSORY		FEATURES					
CARRY SOLUTIONS		DESCRIPTION		PART NUMBER	MATERIAL	BELT LOOP/CLIP DIMENSION (INCHES)	SWIVEL/FIXED	D-RINGS	COMPATIBLE BATTERIES
PORTABLE RADIOS	 APX 900	 Leather Carry Case with 3" Fixed Belt Loop	PMLN5838	Hard Leather	3	Fixed			PMNN4424 PMNN4491 PMNN4493 PMNN4489 PMNN4448 NNTN8128
			 Leather Carry Case with 2.5" Swivel Belt Loop	PMLN5842	Hard Leather	2.5	Swivel		
			 Leather Carry Case with 3" Swivel Belt Loop	PMLN5840	Hard Leather	3	Swivel		
			 Nylon Carry Case with 3" Fixed Belt Loop.	PMLN5844	Nylon	3	Fixed		
			 Carry Case for APX Radio with Clamshell Battery	PMLN6712	Nylon	Up to 5	Fixed	●	
APX 8000 APX 7000	 2.5" Hard Plastic Belt Clip (not compatible with APX 7000 UHF Radios)	 3" Hard Plastic Belt Clip	NITN8266	Plastic	2.5				
			HLN6875	Plastic	3				
APX 8000 APX 8000XE	 Universal Chest Pack with Radio Holder, Pen Holder and Velcro Secured Pouch	 Break-a-Way Chest Pack with Radio Holder Pen Holder and Velcro Secured Pouch	HLN6602	Nylon					
			RLN4570	Nylon					
APX 6000 APX 6000XE	 Replacement Strap for HLN6602 and RLN4570		1505596202	Nylon					

COMPATIBILITY		ACCESSORY	
CARRY SOLUTIONS		DESCRIPTION	
PORTABLE RADIOS	 APX 900	 APX 7000	 APX 7000XE
			 APX 6000
			 APX 6000XE
			 APX 4000
			 APX 1000
APX 7000XE	 APX 7000XE	 APX 8000	 APX 8000XE
			 APX 7000
			 APX 7000XE
			 APX 6000
			 APX 6000XE
APX 8000 APX 8000XE APX 7000 APX 7000XE	 APX 8000	 APX 8000XE	 APX 4000
			 SRX 2200
			 APX 1000
APX 8000 APX 8000XE APX 7000 APX 7000XE	 APX 8000	 APX 8000XE	 APX 7000
			 APX 7000XE
			 APX 6000

# APX PORTABLE RADIO ACCESSORIES

COMPATIBILITY		ACCESSORY		FEATURES						
ANTENNAS		ANTENNAS		UHF / VHF / 700/800 MHz	FREQUENCY BAND (MHz)	INTEGRATED GPS	LENGTH (CM)	TYPE	HAZLOC-CAPABLE <sup>1</sup>	
PORTABLE RADIOS		DESCRIPTION		PART NUMBER						
APX 7000 APX 7000XE APX 6000 APX 6000XE APX 4000 APX 3000 APX 1000 SRX 2200		700/800 MHz, GPS Whip Antenna		NAF5085	700/800	●	20	Whip	UL	
		UHF, GPS Whip Antenna		PMAE4065	UHF	●	14.2	Whip	UL	
		VHF, GPS Whip Antenna		NAR6593	VHF	●	20	Whip	UL	
		900 MHz, GPS Antenna		PMAF4008	800/900	●	6	Whip		
		800/900 MHz, GPS Combination Helical Antenna		PMAE4003	800/900	●	18	Helical	UL	
		1/4 Wave, 700/800 MHz, GPS Stubby Antenna		NAR6595	700/800	●	9.8	Stubby	UL	
		VHF, 700/800, UHF Range 1, UHF Range 2 GPS (radio only)		KT000026A01	VHF 700/800	●		Whip	UL	
		VHF, 700/800 MHz Dual Band, GPS Whip Antenna		NAR6594	VHF 700/800	●	20	Whip	UL	
	APX 4000									
	APX 900									
	APX 8000									
	APX 8000XE									
	APX 7000									
	APX 6000									
	APX 6000XE									
APX 4000										
APX 1000										

COMPATIBILITY

ACCESSORY

FEATURES

ACCESSORY

ANTENNAS

PORTABLE RADIOS

DESCRIPTION

APX 7000

APX 7000XE

APX 6000

APX 6000XE

APX 4000

APX 3000

APX 1000

SRX 2200

APX 6000

APX 6000XE

APX 4000

APX 3000

APX 1000

SRX 2200

APX 4000

APX 900

APX 8000

APX 8000XE

APX 7000

APX 6000

APX 6000XE





APX 4000

APX 1000

APX 8000

<sup>1</sup>UL listed for UL listed radios only.

# APX PORTABLE RADIO ACCESSORIES

COMPATIBILITY	ACCESSORY		FEATURES					
	DESCRIPTION	PART NUMBER	UHF / VHF / 700/800 MHz	FREQUENCY BAND (MHz)	INTEGRATED GPS	LENGTH (CM)	TYPE	HAZLOC-CAPABLE*
<b>PORTABLE RADIOS</b> APX 6000 APX 6000XE APX 4000 APX 1000	UHF Range 1, GPS Stubby Antenna	FAF5259	UHF	380-470	●	9.3	Stubby	UL
								
	UHF Range 2, GPS Stubby Antenna	FAF5260	UHF	470-520	●	9.3	Stubby	UL
								
APX 7000 (700/800 MHz only) APX 6000 (700/800 MHz only)	GPS Antenna (Directly connected to radio when a public safety microphone is used)	NAG4000	700/800		●	7	Stubby	
								
	700/800 Public Safety Microphone Only Stubby Antenna	PMAF4002	700/800	764-870		9	Stubby	
<b>APX 3000</b>	Flexible Antenna with one flexible antenna spacer, 700/800 MHz	PMAF4006	700/800	764-870	●	41	Flexible	
								
	Flexible Antenna with three flexible antenna spacers, UHF	PMAE4080	UHF	308-470	●	77	Flexible	
	Flexible Antenna with two flexible antenna spacers, VHF	PMAD4125	VHF	136-174		44	Flexible	

## PROGRAMMING CABLES

APX 8000XE  
APX 7000



# APX MOBILITY

**COMMUNICATE SAFELY**  
You count on your mobile radio to communicate safely.

Get the most out of your APX radio with a mobile microphone, speaker, alarm and more accessories specifically for your APX mobile radio.



**APX 8500 WITH  
03 CONTROL HEAD**




# APX MOBILE RADIO ACCESSORIES

## COMPATIBILITY ACCESSORY

**LONG RANGE WIRELESS** get ready in seconds without having to worry about the wires getting in the way. No more getting tangled with your seatbelt. Work, safer, smarter and more comfortable in demanding environments.

## PORTABLE RADIOS DESCRIPTION PART NUMBER

<p>APX 8500 SERIES APX 7500 SERIES APX 6500 SERIES APX 4500 SERIES APX 1500 SERIES</p>	 <p>Long Range Wireless Mobile Accessory Kit, includes Wireless Remote Speaker Microphone (RLN6544), Mobile Microphone Bluetooth Gateway (PMMN4097C), Vehicular Charger (PMMN6716)</p>	<p>RLN6551</p>
	<p>Long Range Wireless Mobile Accessory Kit (No Power Charger), includes Wireless Remote Speaker Microphone (RLN6544), Mobile Microphone Bluetooth Gateway (PMMN4097C), Charger must be purchased separately</p>	<p>RLN6552</p>

## ACCESSORIES AND REPLACEMENT PARTS










	<p>Dual Unit Charger, Rapid Rate Charger, 120V</p>	<p>PMLN7120</p>
	<p>Vehicular Charger</p>	<p>PMLN6716</p>
	<p>Wireless RSM with Battery and Clip</p>	<p>RLN6544</p>
	<p>Mobile Microphone with Bluetooth Gateway</p>	<p>PMMN4097</p>
	<p>Wireless RSM Battery, 1750 mA Li-Ion</p>	<p>PMMN4461</p>
	<p>D Ring Swivel Clip (12-pack)</p>	<p>NNTN4990</p>
	<p>Receive-Only Earpiece with Comfort Eartube, FM and UL approved*</p>	<p>RLN4941</p>
	<p>Receive-Only Earpiece with Comfort Eartube</p>	<p>PMLN7560</p>

**LONG RANGE WIRELESS**

The Long Range Wireless Remote Speaker Microphone with Bluetooth Gateway



# APX MOBILE RADIO ACCESSORIES







COMPATIBILITY	ACCESSORY	FEATURES		
MOBILE RADIOS	DESCRIPTION	PART NUMBER	MICROPHONE STYLE	IMPRES
<b>APX 8500 SERIES</b> <b>APX 7500 SERIES</b>	 <p>Water Resistant Palm Microphone for Motorcycle Mounted Mobiles</p>	HMN1079	Standard	
	 <p>Keypad Microphone</p>	HMN4079	Keypad + Navigation	
<b>APX 8500 SERIES</b> <b>APX 7500 SERIES</b>	 <p>Standard Palm Microphone</p>	HMN1090	Standard	
	 <p>Water Resistant Palm Microphone</p>	HMN1089	Standard	
<b>APX 6500 SERIES</b> <b>APX 4500 SERIES</b>	 <p>Telephone Keypad Handset with Hang-Up Cup</p>	HMN4097	Telephone + Keypad	
	 <p>Hang-Up Handset with Armored Cable</p>	HKN1018	Telephone	
<b>APX 4500 SERIES</b> <b>APX 1500 SERIES</b>	 <p>Handset with Hang-Up Cup</p>	HLN1457	Telephone	
	 <p>Desktop Microphone</p>	RMN5070	Desktop	
	 <p>IMPRES Visor Microphone, requires PTT Switch GLN7278 or RLN5926</p>	RMN5054	Visor	●

COMPATIBILITY	ACCESSORY		
MOBILE RADIOS	DESCRIPTION		
<b>APX 8500 SERIES</b> <b>APX 7500 SERIES</b>	 <p>APX 8500 SERIES</p>		
	 <p>APX 7500 SERIES</p>		
<b>APX 6500 SERIES</b> <b>APX 4500 SERIES</b>	 <p>APX 6500 SERIES</p>		
	 <p>APX 4500 SERIES</p>		
<b>APX 4500 SERIES</b> <b>APX 1500 SERIES</b>	 <p>APX 4500 SERIES</p>		
	 <p>APX 1500 SERIES</p>		
		<b>CONTROL STATION ACCESSORIES</b>	
	<b>APX 8500 SERIES</b>		
	<b>APX 7500 SERIES</b> <b>APX 6500 SERIES</b> <b>APX 4500 SERIES</b>		



IMPRES AUDIO ACCESSORIES

# APX MOBILE RADIO ACCESSORIES

COMPATIBILITY	ACCESSORY	DESCRIPTION	PART NUMBER
<b>MOBILE RADIOS</b> <b>APX 8500 SERIES</b> <b>APX 7500 SERIES</b> <b>APX 6500 SERIES</b> <b>APX 4500 SERIES</b> <b>APX 1500 SERIES</b>		High Power Truncheon Kit; Quick Release with Lock-	HLN7003
		Mid Power Truncheon Kit; Standard Installation Bracket APX 6500 Enhanced requires KT000053A01 screws	HLN7002
		Mid Power Truncheon Lock	HLN6372
		Remote Mount Control Head Truncheon Compatible with 02/05 and 07 control heads	HKN6186
		Low Profile Remote Mount Control Head Truncheon Kit	HLN7031
		Dual Truncheon To be used with APX 8500 MP, APX 6500 and APX 6500 Enhanced	HLN7045B
		Motorcycle Enclosure, Black	HLN7022

**COMPATIBILITY**  
**SPEAKERS** Boost audio at your control station  
**MOBILE RADIOS**



**COMPATIBILITY**  
**UNIVERSAL RELAY CONTROLLER**  
**MOBILE RADIOS**



**COMPATIBILITY**  
**UNIVERSAL RELAY CONTROLLER**  
**MOBILE RADIOS**



# APX MOBILE RADIO ACCESSORIES

COMPATIBILITY	ACCESSORY	PART NUMBER
<b>MOBILE SIREN</b>		
MOBILE RADIOS		
APX 7500 SERIES APX 6500 SERIES APX 4500 SERIES APX 1500 SERIES	Siren	DDN1542
	Siren Install Hardware	DDN1543
	Siren to Radio Cable	DDN1883
	03 Siren to DEK Cable	DDN1545

COMPATIBILITY	ACCESSORY	PART NUMBER
<b>SIREN ACCESSORIES</b>		
MOBILE RADIOS		
	Siren Switchbox	HLN6819
	Wire Harness for Siren Switchbox. Needed to connect HLN6819 to DDN1774	DDN1886
	Mode Direct Entry Keypad, 8-Buttons	H1835
	Siren Cable, 03 Siren to Switchbox	HKM6146



COMPATIBILITY

ACCESSORY

**SLIM (SIREN LIGHT INTERFACE MOBILE SIREN)**

MOBILE RADIOS

DESCRIPTION



APX 7500 SERIES



APX 6500 SERIES






APX 4500 SERIES


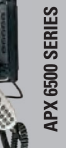

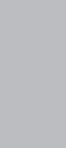


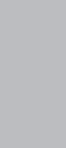




APX 1500 SERIES

# APX MOBILE RADIO ACCESSORIES

COMPATIBILITY	ACCESSORY	PART NUMBER
CABLES	DESCRIPTION	
MOBILE RADIOS		
<b>CONTROL HEAD CABLES</b>		
APX 7500 SERIES APX 6500 SERIES APX 4500 SERIES APX 1500 SERIES		PMLN4958
	03 Handheld Control Head Extension Cable, 17-Feet	
		PMLN4959
	03 Handheld Control Head Accessory Cable	
		HKN6187
	Control Head Cable with Connections for Power, Speaker and Headset Jack	
		HKN6188
	Control Head Cable with Connections for Power and Speaker	
<b>REMOTE MOUNT CABLES</b>		
APX 7500 SERIES APX 6500 SERIES APX 4500 SERIES APX 1500 SERIES		HKN6164
	Remote Mount Cable, 131-Feet	
		HKN6165
	Remote Mount Cable, 115-Feet	
		HKN6166
	Remote Mount Cable, 75-Feet	
		HKN6167
	Remote Mount Cable, 50-Feet	
		HKN6168
	Remote Mount Cable, 30-Feet	
		HKN6169
	Remote Mount Cable, 17-Feet	
		HKN6170
	Remote Mount Cable, 10-Feet	
		HKN6196
	Cable, Remote Control Head Vehicular Interface Port Connector for 05 Control Head	
		HKN6961
	Cable, Remote Control Head Mobile Accessory Port Connector for 05 Control Head	
APX 7500 SERIES		3075217A02
	Motorcycle Remote Cable for 05 Control Head	
<b>KEYLOAD CABLES</b>		



COMPATIBILITY	ACCESSORY
CABLES	DESCRIPTION
MOBILE RADIOS	
<b>POWER CABLES</b>	
	APX 7500 SERIES
	APX 6500 SERIES
	APX 4500 SERIES
	APX 1500 SERIES
<b>DATA CABLES</b>	
	APX 8500 SERIES
	APX 7500 SERIES
	APX 6500 SERIES
	APX 4500 SERIES
	APX 7500 SERIES
	APX 6500 SERIES
<b>PROGRAMMING CABLES</b>	



## ANTENNAS

For optimum range and quality, it is important to match the mobile radio's frequency with the proper Motorola antenna. These are available as standard 1/4 wave models or can include 3dB, 3.5dB or 5dB signal gain.

## APX MOBILE RADIO ACCESSORIES

COMPATIBILITY	ACCESSORY	FEATURES			
MOBILE RADIOS	DESCRIPTION	PART NUMBER	UHF / VHF / 800/900 MHz	FREQUENCY BAND (MHz)	MOUNTING STYLE
<b>APX 8500 MOTORCYCLE ANTENNAS</b>					

COMPATIBILITY	ACCESSORY
MOBILE RADIOS	DESCRIPTION
<b>APX 8500 MOTORCYCLE ANTENNAS</b>	

	All Band Mobile Antenna	AN000131A01			Through-hole
	Motorcycle Mount, 1/4 Wave Whip Antenna with QMA Connector, 136-144 MHz, No Tuning Required	AN000197A01	VHF	136-144	Motorcycle
	Motorcycle Mount, 1/4 Wave Whip Antenna with QMA Connector, 144-150.8 MHz, No Tuning Required		VHF	144-150.8	Motorcycle




APX 8500 SERIES



APX 8500 SERIES



# APX MOBILE RADIO ACCESSORIES

COMPATIBILITY	ACCESSORY	FEATURES			
ANTENNAS		PART NUMBER	UHF /VHF / 800/900 MHz	FREQUENCY BAND (MHz)	MOUNTING STYLE
MOBILE RADIOS	DESCRIPTION				
<b>APX 8500 MOTORCYCLE ANTENNAS</b>					
 <b>APX 8500 SERIES</b>	Motorcycle Mount, 1/4 Wave Whip Antenna with OMA Connector, 482-520 MHz, No Tuning Required	AN000197A08	UHF	482-520	Motorcycle
	Motorcycle Mount, Low Profile, Unity Gain Antenna with OMA Connector, 450-512 MHz, No Tuning Required	AN000197A09	UHF	450-512	Motorcycle
	Motorcycle Mount Antenna with OMA Connector, 3dB Gain, 762-870 MHz	AN000197A10	800/900	762-870	Motorcycle
	Motorcycle Mount, Low Profile Antenna with OMA Connector, 3dB Gain, 762-870 MHz	AN000197A11	800/900	762-870	Motorcycle

COMPATIBILITY	ACCESSORY	
ANTENNAS		
MOBILE RADIOS	DESCRIPTION	
<b>VHF ANTENNAS (RF ONLY)</b>		
 <b>APX 8500 SERIES*</b>  <b>APX 7500 SERIES</b>  <b>APX 6500 SERIES</b>  <b>APX 4500 SERIES</b>  <b>APX 1500 SERIES</b>	 	
	<b>UHF ANTENNAS (RF ONLY)</b>	

COMPATIBILITY	ACCESSORY
APX 8500 ANTENNA MULTIPLEXERS AND ADAPTERS	
MOBILE RADIOS	DESCRIPTION
	Vehicle Multiplexer (supports HP)
	Part Number: E0000103A02



# APX MOBILE RADIO ACCESSORIES

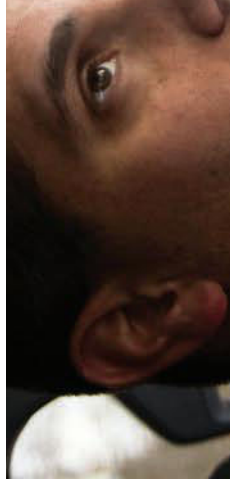
COMPATIBILITY		FEATURES			
ACCESSORY		ANTENNAS			
MOBILE RADIOS		PART NUMBER	UHF /VHF/ 700/800 MHz	FREQUENCY BAND (MHz)	MOUNTING STYLE
<b>UHF ANTENNAS (RF ONLY)</b>					
 APX 8500 SERIES*  APX 7500 SERIES  APX 6500 SERIES  APX 4500 SERIES  APX 1500 SERIES		HAE4013	UHF	494-512	Through-hole
		HAE6010	UHF	380-420	Through-hole
		HAE4011	UHF	470-495	Through-hole
		HAE4012	UHF	450-470	Through-hole
		HAE6011	UHF	380-420	Through-hole
		RAE4014	UHF	455-470	Through-hole
		RAE4015	UHF	470-494	Through-hole
		RAE4016	UHF	494-512	Through-hole
		HAE6013	UHF	380-470	Through-hole
		HAE6015	UHF	450-512	Through-hole
		HAE6031	UHF	380-520	Through-hole

COMPATIBILITY	ACCESSORY
<b>ANTENNAS</b>	
MOBILE RADIOS	DESCRIPTION








## 700/800 MHZ ANTENNAS (RF ONLY)



\*CB000091A03 - Mini-U to QMA adapter required for APX 8500 to a



# APX MOBILE RADIO ACCESSORIES

COMPATIBILITY	ACCESSORY		FEATURES			
	MOBILE RADIOS	DESCRIPTION	PART NUMBER	GPS / WI-FI	FREQUENCY BAND (MHz)	MOUNTING STYLE
<b>GPS / WI-FI ANTENNAS</b>						
<b>APX 7500 SERIES</b> <b>APX 6500 SERIES</b> <b>APX 4500 SERIES</b> <b>APX 1500 SERIES</b>	 <p>GPS Roof Mount Antenna SMA Male connector with RG-174 17ft cable</p>	HAG4000	GPS Only		Roof Mount	
	 <p>GPS Glass Mount Antenna SMA Male connector with RG-174 17ft cable</p>	PMAN4001	GPS Only		Glass Mount	
 <b>APX 8500 SERIES*</b>  <b>APX 7500 SERIES</b>  <b>APX 6500 SERIES</b>  <b>APX 4500 SERIES</b>  <b>APX 1500 SERIES</b>	<p>Convert glass-mount motorcycle antenna with Wi-Fi 5GHz</p>	PMAN5101	Wi-Fi Only		Glass Mount	
	<p>Convert glass-mount motorcycle antenna with GPS GNSS</p>	PMAN4109	GPS Only		Glass Mount	
	<p>Wi-Fi/GPS Combination Vehicle Antenna</p>	AN000163A01	GPS Wi-Fi		Through-hole	
	<p>Wi-Fi/GPS Combination Motorcycle Antenna</p>	AN000163A02	GPS Wi-Fi		Motorcycle	





# GLOSSARY

## HAZLOC-CAPABLE

For more information on which accessories are approved by Factory Mutual (FM) or Underwriters' Laboratory (UL) with certain APX models, please consult the manual provided with each FM- or UL-approved APX portable. Motorola-approved accessories are a critical part of the overall radio system intrinsic safety certification. Non-Motorola approved accessories may not be certified for APX and if used, could result in equipment that is NOT approved and unsafe in a hazardous environment.

## IP RATING

International Protection (IP) is a global standard for rating dust and water protection. The first digit IP5x or IP6x represents increased levels of dust protection. The second digit, IPx7 or IPx8 represents increased levels of water protection.

- **IPx7** represents withstanding submersion in 1 meter of fresh water for 30 minutes.
- **IPx8** represents heating accessory to 27°C higher than the water temperature for 2 hours then immediately immersing it to a depth of 1 meter for another 2 hours.
- **IPx8+Rugged** represents exceeding industry specs by heating accessory to 27°C higher than the water temperature for 2 hours then immediately immersing it to a depth of 2 meters for another 4 hours.

## MICROPHONE NOISE SUPPRESSION

**Multi Mic Noise Suppression:** Five integrated microphones and Adaptive Audio Engine automatically change the level of noise suppression, microphone gain, Windporting and speaker equalization to produce clear and loud audio in any environment.

**Dual Mic Noise Suppression:** Dual-microphone design tracks your voice so that you can keep your eye on what's in front of you while speaking. A digital signal processor (DSP) algorithm helps suppress background noise so you can be heard clearly regardless of the noise around you.

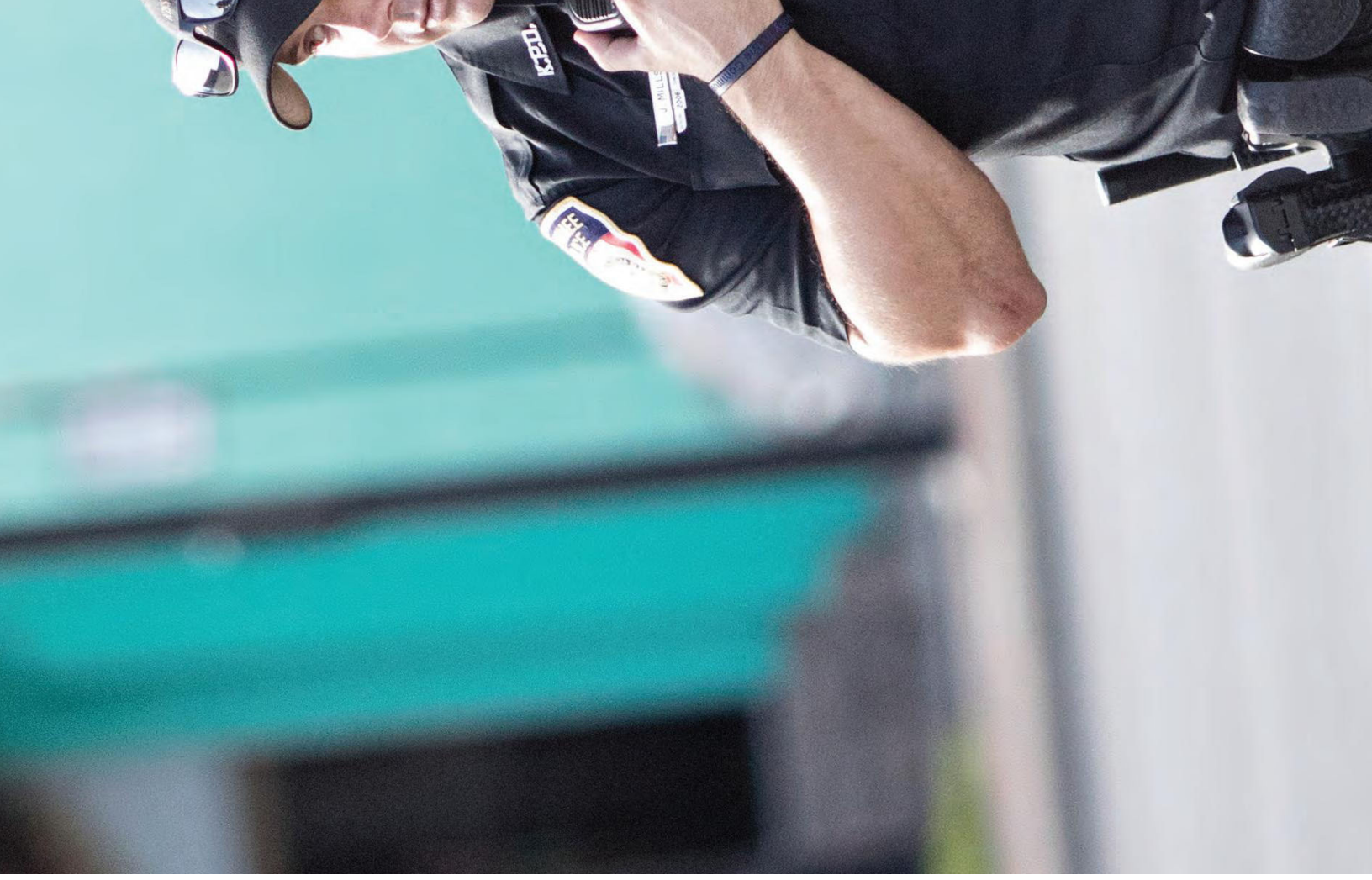
## Windporting (Motorola Exclusive):

Windporting reduces the effect of wind and other outdoor noises on your microphone performance and prevents water from clogging the microphone and distorting your transmission.

**Noise-cancelling** microphones negate crowd or machinery noise so your voice comes through loud and clear anytime you speak directly into the microphone.

## SWIVEL OR FIXED LOOP

Secure to a belt loop and the case swings freely from side to side. The swivel latch system also allows the radio and case to be removed from the belt loop by simply inverting, lifting it up and out of the belt loop. Fixed loops provide a sturdy attachment to your belt.





For more information on Motorola mission critical accessories, visit [motorolasolutions.com/apx](https://motorolasolutions.com/apx).



Motorola Solutions, Inc. 500 West Monroe Street, Chicago, IL 60661 U.S.A. [motorolasolutions.com](https://motorolasolutions.com)

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## RELIABILITY MEETS P25 PORTABILITY

# APX™ 1000 PROJECT 25 PORTABLE RADIO

If you are racing to respond to an electrical outage or monitor a highway construction build, you need a radio that keeps you connected, instantly and continuously no matter the situation, background noise, weather, or duration. You expect a reliable radio where every word is heard and every message understood when it counts most.

Public safety, utilities, and government service users require a P25 radio that can stand up to the toughest tasks while keeping them connected to surrounding agencies and first responders. The APX 1000 is engineered to give you the capabilities you need at the budget you can afford. It combines uncompromising durability, simplified controls and excellent audio quality in a compact P25 TDMA capable portable radio.

### EVERYTHING YOU WANT IN A RADIO, FOR LESS

With the APX 1000, you pay for only the functionality you need at the level you can afford without giving up the exceptional quality and reliability you expect from APX. The APX 1000 provides you with a radio that meets and fits your budget needs.

### MISSION READY VOICE TECHNOLOGY

The APX 1000 is P25 TDMA capable for twice the voice capacity so you can add more users without adding more frequencies or infrastructure. And it's backwards and forwards compatible with all Motorola mission critical radio systems, so you can interoperate with surrounding agencies and first responders with confidence.

### POWER UP WITH APX 1000 ACCESSORIES

- Designed, tested and certified for optimum performance with your radio
- Complete portfolio of remote speaker microphones, headsets
- High-powered IMPRES™ batteries that have a slim design to fit the compact radio size



## APX 1000 PROJECT 25 PORTABLE RADIO

### FEATURES AND BENEFITS

- Available in 700/800 MHz, 900 MHz, VHF, UHF R1 and UHF R2 bands
- Trunking standards supported:
  - Clear or digital ASTRO® 25 Trunked Operation
  - Analog MDC-1200 and Digital APCO P25 Conventional System Configurations
- Narrow and wide bandwidth digital receiver (6.25 kHz equivalent / 12.5 kHz / 20 kHz / 25 kHz)<sup>1</sup>
- Embedded digital signaling (ASTRO and ASTRO 25)
- Available in models 1.5, 2 and 3
- Lightbar with Intelligent Lighting
- Radio Profiles
- Unified Call List
- User programmable Voice Announcement
- Meets Applicable MIL-STD-810C, D, E, F and G

- Meets IP54 Environmental Specifications
- Superior Audio Features:
  - 0.5 W high audio speaker
  - 2-mic noise canceling technology
- Utilizes Windows 7 Customer Programming Software (CPS)
  - Supports USB communications
  - Built in FLASHport™ support
- Full portfolio of accessories including IMPRES batteries, chargers and audio devices<sup>2</sup>

### OPTIONAL FEATURES

- ASTRO 25 Integrated Voice & Data
- Programming Over Project 25
- P25 Link Layer Authentication



### TRANSMITTER - TYPICAL PERFORMANCE SPECIFICATIONS

	VHF	UHF Range 1	UHF Range 2	700/800 MHz	900 MHz
Frequency Range/Bandsplits	136-174 MHz	380-470 MHz	450-520 MHz	764-776 MHz 794-806 MHz 806-824 MHz 851-870 MHz	896-901 MHz 935-940 MHz
Channel Spacing	25/12.5 kHz	25/12.5 kHz	25/12.5 kHz	25/12.5 kHz	12.5 kHz
Maximum Frequency Separation	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
Rated RF Output Power Adj <sup>3</sup>	1-5 Watts Max	1-5 Watts	1-5 Watts Max	1-2.5 Watts 1-3 Watts	1-2.5 Watts
Frequency Stability <sup>3</sup> (-30°C to +60°C; +25°C Ref.)	±0.00010 %	±0.00010 %	±0.00010 %	±0.00010 %	±0.00010 %
Modulation Limiting <sup>3</sup>	±5 kHz / ±4 kHz / ±2.5 kHz	±5 kHz / ±4 kHz / ±2.5 kHz	±5 kHz / ±4 kHz / ±2.5 kHz	±5 kHz / ±4 kHz / ±2.5 kHz	±2.5 kHz
Emissions (Conducted and Radiated) <sup>3</sup>	-75 dB	-75 dB	-75 dB	-75 dB	-75 dB
Audio Response <sup>3</sup>	+1, -3 dB	+1, -3 dB	+1, -3 dB	+1, -3 dB	+1, -3 dB
FM Hum and Noise	25 kHz 12.5 kHz	-47 dB -45 dB	-47 dB -45 dB	-47 dB -45 dB	-45dB
Audio Distortion <sup>3</sup>	1.00%	1.00%	1.00%	1.00%	1.00%

### BATTERIES FOR APX 1000

BATTERY CAPACITY / TYPE	DIMENSIONS (H X W X D)	WEIGHT	BATTERY PART NUMBER	BATTERY CAPACITY
Li-Ion IMPRES 1900 mAh IP54	114.5 x 55.04 x 17.85	150 grams	NNTN8128B	1900 mAh
Li-Ion IMPRES 2300 mAh IP54	114.5 x 55.04 x 23.15	160 grams	PMNN4424AR	2300 mAh
Li-Ion IMPRES 2700 mAh IP54	114.5 x 55.04 x 23.15	160 grams	PMNN4448AR	2700 mAh

<sup>1</sup> Per the FCC Narrowbanding rules, new products (APX 1000 UHF R1) submitted for FCC certification after January 1, 2011 are restricted from being granted certification at 25 KHz for United States - State and Local Markets only.

<sup>2</sup> Chargers and batteries for the APX 1000 radios will interoperate with APX 4000 radios.

<sup>3</sup> Measured in the analog mode per TIA / EIA 603 under nominal conditions.

**PRODUCT SPEC SHEET**  
APX™ 1000 PROJECT 25 PORTABLE RADIO



**RADIO MODEL**

	<b>MODEL 1.5</b>	<b>MODEL 2</b>	<b>MODEL 3</b>
Display	Full bitmap color LCD display, 3 lines of text x 14 characters, 1 line of icons, 1 menu line x 3 menus, White backlight		
Keypad	Backlight keypad 3 soft keys	Backlight keypad, 3 soft keys, 4 direction navigation key, Home and Data buttons	Backlight keypad, 3 soft keys, 4 direction navigation key, 4x3 keypad, Home and Data buttons
Channel Capacity	512		
FLASHport Memory	64 MB		
VHF (136-174 MHz)	H84KDD9PW5AN	H84KDF9PW6AN	H84KDH9PW7AN
UHF Range 1 (380-470 MHz)	H84QDD9PW5AN	H84QDF9PW6AN	H84QDH9PW7AN
UHF Range 2 (450-520 MHz)	H84SDD9PW5AN	H84SDF9PW6AN	H84SDH9PW7AN
700/800 MHz (763-870 MHz)	H84UCD9PW5AN	H84UCF9PW6AN	H84UCH9PW7AN
900 MHz (896-940 MHz)		H84WCF9PW6AN	
Buttons and Switches	Large PTT button • Multi-function knob • Orange emergency button • 3 programmable side buttons		

**TRANSMITTER CERTIFICATION**

VHF (136-174 MHz)	AZ489FT3834
UHF Range 1 (380-470 MHz)	AZ489FT4917
UHF Range 2 (450-520 MHz)	AZ489FT4920
700/800 MHz (764-869 MHz)	AZ489FT7057
900 MHz (896- 901, 935-940 MHz)	AZ489FT5861

**FCC EMISSION DESIGNATORS**

FCC Emissions Designators	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W
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**POWER SUPPLY**

Power Supply	One rechargeable Li-Ion 1900 mAh battery standard, or 2300 and 2700 mAh high cap Li-Ion.
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**RECEIVER - TYPICAL PERFORMANCE SPECIFICATIONS**

		<b>VHF</b>	<b>UHF Range 1</b>	<b>UHF Range 2</b>	<b>700/800 MHz</b>	<b>900 MHz</b>
Frequency Range/Bandsplits		136-174 MHz	380-470 MHz	450-520 MHz	763-776 MHz 851-870 MHz	935-940 MHz
Channel Spacing		25/12.5 kHz	25/12.5 kHz	25/12.5 kHz	25/12.5 kHz	12.5 kHz
Maximum Frequency Separation		Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
Audio Output Power at Rated <sup>3</sup>		500mW	500mW	500mW	500mW	500mW
Frequency Stability <sup>3</sup> (-30°C to +60°C; +25°C Ref.)		±0.00010 %	±0.00010 %	±0.00010 %	±0.00010 %	±0.00010 %
Analog Sensitivity <sup>4</sup>	12 dB SINAD	0.216µV	0.234µV	0.234µV	0.250µV	0.236µV
Digital Sensitivity <sup>5</sup>	1% BER (800 MHz) 5% BER	0.277µV 0.188µV	0.307µV 0.207µV	0.307µV 0.207µV	0.400µV 0.250µV	0.33µV 0.222µV
Selectivity <sup>3</sup>	25 kHz channel 12.5 kHz channel	-76 dB -70 dB	-76 dB -67 dB	-76 dB -67 dB	-76 dB -67 dB	-67 dB
Intermodulation		-79.5 dB	-77 dB	-77 dB	-75 dB	-75 dB
Spurious Rejection		-79.3 dB	-80.3 dB	-80.3 dB	-76.6 dB	-80 dB
FM Hum and Noise	25 kHz 12.5 kHz	-51 dB -45 dB	-50 dB -45 dB	-50 dB -45 dB	-53 dB -47 dB	-47 dB
Audio Distortion <sup>3</sup>		1.00%	1.00%	1.00%	1.00%	1.00%

<sup>4</sup> Measured conductively in analog mode per TIA / EIA 603 under nominal conditions.

<sup>5</sup> Measured conductively in digital mode per TIA / EIA IS 102.CAAA under nominal conditions.

**PRODUCT SPEC SHEET**  
**APX™ 1000 PROJECT 25 PORTABLE RADIO**

**PORTABLE MILITARY STANDARDS 810 C, D, E, F AND G**

	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F		MIL-STD 810G	
	Method	Proc./Cat	Method	Proc./Cat	Method	Proc./Cat	Method	Proc./Cat	Method	Proc./Cat
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	II	500.5	II
High Temperature	501.1	I, II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Basic Hot	501.5	I/A1, II/A2
Low Temperature	502.1	I	502.2	I/C3, II/C1	502.3	I/C3, II/C1	502.4	I/C3, II/C1	502.5	I/C3, II/C1
Temperature Shock	503.1	I	503.2	I/A1C3	503.3	I/A1C3	503.4	I	503.5	I/C
Solar Radiation	505.1	II	505.2	I	505.3	I	505.4	I	505.5	I/A1
Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III	506.5	I, III
Humidity	507.1	II	507.2	II	507.3	II	507.4	1 Proc	507.5	II/Aggravated
Salt Fog	509.1	I	509.2	I	509.3	I	509.4	1 Proc	509.5	1 Proc
Blowing Dust	510.1	I	510.2	I	510.3	I	510.4	I	510.5	I
Blowing Sand	1 Proc	1 Proc	510.2	II	510.3	II	510.4	II	510.5	II
Vibration	514.2	VIII/F, Curve-W	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24	514.6	I/24
Shock	516.2	I, III	516.3	I, VI	516.4	I, VI	516.5	I, VI	516.6	I, VI
Shock (Drop)	516.2	II	516.2	IV	516.4	IV	516.5	IV	516.6	IV

**DIMENSIONS OF THE RADIOS WITHOUT BATTERY**

	INCHES	MILLIMETERS
Length	5.26	133
Width Push-To-Talk button	2.37	60.2
Depth Push-To-Talk button	1.72	43.6
Width Top	2.56	65
Depth Top	2.13	43
Weight of the Radios Without Battery	8.47 oz	240 g

**ENVIRONMENTAL SPECIFICATIONS**

Operating Temperature <sup>5</sup>	-30°C / +60°C
Storage Temperature <sup>6</sup>	-40°C / +85°C
Humidity	Per MIL-STD
ESD	IEC 801-2 KV
Water and Dust Intrusion	IP54
Housing Availability	Black only

**ENCRYPTION**

Supported Encryption Algorithms	ADP SW
Key Storage	Tamper protected volatile or non-volatile memory
Key Erasure	Keyboard command

<sup>5</sup> Accuracy specs are for long-term tracking (95th percentile values >5 satellites visible at a nominal -130 dBm signal strength)

<sup>6</sup> Temperatures listed are for radio specifications. Battery storage is recommended at 25°C, ±5°C to ensure best performance.

Specifications subject to change without notice. All specifications shown are typical.

Radio meets applicable regulatory requirements.

To learn more about the APX 1000 P25 portable radio contact your Motorola representative or visit [motorolasolutions.com/apx1000](http://motorolasolutions.com/apx1000).

Motorola Solutions, Inc. 1301 E. Algonquin Road, Schaumburg, Illinois 60196 U.S.A. [motorolasolutions.com](http://motorolasolutions.com)

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