



INTEROPERATE WITHOUT BOUNDARIES

APX™ 7500 MULTIBAND MOBILE RADIO

You want communication to be continuous – especially during a high-speed chase or lifesaving helicopter rescue. You depend upon every word being heard and every message being understood, with sirens blasting, engines blaring and weather howling in the background. You count on controls that are easy to locate and operate when situations get stressful. And you expect a mobile so interoperable, your personnel can communicate seamlessly – no matter how many agencies or how vast the area.

Working with public safety personnel around the world, we designed the APX™ 7500 multiband mobile radio with these must-haves in mind. Whether you want instant interoperability, easy ergonomics or loud, clear audio, the APX 7500 delivers it all, everywhere you go.

TALK TOGETHER INSTANTLY

Launching a covert operation or military response, you don't want to operate two radios in order to communicate. And you don't have to. The APX 7500 provides interoperability on demand performing across multiple digital and analog networks and operating in any two frequency bands (700 MHz, 800 MHz, VHF, UHF R1 and UHF R2). Now your agency can rely on one cost-effective multiband mobile instead of installing and operating multiple radios.

INSTALL IT EASILY

Since vehicle space is limited and access can be difficult, we designed the APX 7500 mobile to fit into the existing install space of our XTL radios so you can use, install and remove it easily. You can reuse existing mounting holes and cables on the mid and high-power models. And a new high-power trunion design secures the mobile and makes installing easy— simply remove the radio without removing the cables.

PLAN TO EXPAND NOW

Every APX 7500 radio is P25 Phase 2 Capable for twice the voice capacity. That means you can add more users to your system without adding frequencies or infrastructure. Not only does the APX 7500 meet current P25 standards, it's backwards and forwards compatible and future-ready to support new technology and data applications. So you can upgrade your existing system or design a new one at your own pace.

APX 7500

PROJECT 25 MULTI-BAND PORTABLE RADIO

FEATURES AND BENEFITS:

Available in 700/800 MHz, VHF, UHF R1, and UHF R2 bands
Up to 1250 Channels
Optional multiband operation
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/25 kHz)
Embedded digital signaling (ASTRO and ASTRO 25)
Integrated GPS capable
Integrated Encryption Hardware
Seamless wideband scan
Intelligent lighting

Radio profiles
Unified Call List
Expansion Slot Standard
Meets applicable MIL-specs 810C, D, E, F and G
Ships standard IP54
Utilizes Windows XP and Vista Customer Programming Software (CPS)

- Supports USB Communications
- Built in FLASHport™ support

Re-use of most XTL™ accessories

OPTIONAL FEATURES:

Enhanced Encryption Software Options
Programming over Project 25 (POP25)
Text Messaging
Over the Air Re-Key (OTAR)
12 character RF ID asset tracking



03 HANDHELD CONTROL HEAD FEATURES

- 4 lines: 2 lines text (14 characters), 1 line icons, 1 line soft menu keys
- 3 x 6 keypad with up to 24 programmable soft keys
- Cellular style user interface and color display



05 CONTROL HEAD FEATURES

- Tri-color LCD display
- 4 lines: 2 lines text (14 characters), 1 line icons, 1 line soft menu keys
 - 3 x 6 keypad microphone accessory with 3 programmable soft keys
 - 5 programmable soft key buttons and 5 scroll-through menus with up to 24 programmable soft keys
 - Multiple control head configuration to fully control a single radio with up to 4 different wired locations
 - Motorcycle configuration available



09 INTEGRATED CONTROL HEAD

- Extra large full color display with Intelligent Lighting
- 12 button DTMF style keypad
- Dedicated siren controls
- Large programmable one touch buttons
- Night/day mode button

PRODUCT SPEC SHEET
APX 7500 MOBILE

SIGNALLING (ASTRO 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.

MOBILE APX7500

Dimensions	Mid Power Radio Transceiver
	2" x 7" x 8.6" (50.8 x 177.8 x 218.4 mm) O5 Control Head 2" x 7" x 2.5" (50.8 x 180.3 x 63.5 mm) Mid Power Radio Transceiver and O5 Control Head–Dash Mount 2" x 7" x 9.6" (50.8 x 180.3 x 243.8 mm) Mid Power Radio Transceiver and Remote Mount 2.0" x 7" x 9.6" (50.8 x 180.3 x 243.8 mm) High Power Radio Transceiver 2.9" x 11.5" x 8.8" (74 x 293 x 223 mm) High Power Radio Transceiver with Handle 3.4" x 11.5" x 8.8" (87 x 293 x 223 mm)
Weight	Mid Power Radio Transceiver and Control Head 7.0 lbs (3.17 kg) High Power Radio Transceiver 14.2 lbs with trunnion (6.4 kg) 12 lbs without trunnion (5.4 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		806-824 MHz 851-870 MHz		136-174 MHz		380-470 MHz		450-520 MHz	
Channel Spacing	25/12.5 kHz		25/20/12.5 kHz		30/25/12.5 kHz		25/12.5 kHz		25/12.5 kHz	
Maximum Frequency Separation	Full Bandsplit		Full Bandsplit		Full Bandsplit		Full Bandsplit		Full Bandsplit	
Rated RF Output Power Adj*	10-30 Watts		10-35 Watts		10-50 Watts or 25-100 Watts		10-40 Watts or 25-100 Watts		10-45 Watts (450-485 MHz) 10-40 Watts (485-512 MHz) 10-25 Watts (512-520 MHz)	
Frequency Stability* (-30°C to +60°C; +25°C Ref.)	±0.00015 %		±0.00015 %		±0.0002 %		±0.0002 %		±0.0002 %	
Modulation Limiting*	±5 kHz / ±2.5 kHz		±5 kHz/±4 kHz (NPSPEC) /±2.5 kHz		±5 kHz / ±2.5 kHz		±5 kHz / ±2.5 kHz		±5 kHz / ±2.5 kHz	
Modulation Fidelity (C4FM) 12.5kHz Digital Channel	±2.8 kHz		±2.8 kHz		±2.8 kHz		±2.8 kHz		±2.8 kHz	
Emissions*	Conducted+ -70/-85 dBc	Radiated+ -20/-40 dBm	Conducted -70 dBc	Radiated -20 dBm	Conducted -85 dBc	Radiated -20 dBm	Conducted -85 dBc	Radiated -20 dBm	Conducted -85 dBc	Radiated -20 dBm
Audio Response*	+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)	
FM Hum & Noise	25 & 20 kHz 12.5 kHz	-40 dB -34 dB	-40 dB -34 dB	-40 dB -34 dB	-50 dB -40 dB	-45 dB -40 dB	-45 dB -40 dB	-45 dB -40 dB	-45 dB -40 dB	-45 dB -40 dB
Audio Distortion*	2 %		2 %		2 %		2 %		2 %	

PRODUCT SPEC SHEET
APX 7500 MOBILE

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	25/12.5 kHz	25/20/12.5 kHz	30/25/12.5 kHz	25/12.5 kHz	25/12.5 kHz
Maximum Frequency Separation	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
Audio Output Power at 3% distortion*	7.5 W or 15 W ++	7.5 W or 15 W ++	7.5 W or 15 W ++	7.5 W or 15 W ++	7.5 W or 15 W ++
Frequency Stability* (-30°C to +60°C; +25°C Ref.)	±0.00015 %	±0.00015 %	±0.0002 %	±0.0002 %	±0.0002 %
Analog Sensitivity* 12 dB SINAD	0.25 µV	0.25 µV	Pre-Amp 0.2 µV Standard 0.3 µV	Pre-Amp 0.2 µV Standard 0.3 µV	Pre-Amp 0.2 µV Standard 0.3 µV
Digital Sensitivity 1% BER	0.3 µV	0.3 µV	0.25 µV	0.25 µV	0.25 µV
5% BER	0.25 µV	0.25 µV	0.2 µV	0.2 µV	0.2 µV
Intermodulation	80 dB	80 dB	80 dB	85 dB	80 dB
Spurious Rejection	90 dB	90 dB	90 dB	90 dB	90 dB
Audio Distortion at rated*	3.00 %	3.00 %	3.00 %	3.00 %	3.00 %
Selectivity* 25 kHz	80 dB	80 dB	—	82 dB	82 dB
12.5 kHz	65 dB	65 dB	70 dB	70 dB	70 dB
30 kHz	—	—	90 dB	—	—

POWER AND BATTERY DRAIN

Model Type	136-174 MHz, 380-470 MHz, 450-520 MHz, 764-870 MHz				
Minimum RF Power Output	10-35 Watt (764-870 MHz), 10-50 Watts or 25-100 Watts (136-174 MHz), 10-40W or 25-100 Watts (380-470 MHz), 10-45Watts (450-485 MHz), 10-40Watts (485-512 MHz), 10-25Watts (512-520 MHz)				
Operation	13.8V DC ±20% Negative Ground				
Standby at 13.8V	0.85A (764-870 MHz), 0.85A (136-174 MHz), 0.85A (380-470 MHz), 0.85A (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 (10-50 Watt)	13A (50W)	8A (15W)	764-870 MHz (10-35 Watt)	12A (50W) 8A (15W)
	380-470 MHz (10-40 Watt)	11A (40W)	8A (15W)	136-174 MHz (25-110 Watt)	20A (100W)
	380-470 MHz (10-40 Watt)	11A (45W)	8A (15W)	380-470 MHz (25-110 Watt)	24A (100W)

GPS SPECIFICATIONS

Channels	12
Tracking Sensitivity	-153 dBm
Accuracy ⁵	<10 meters (95%)
Cold Start	<60 seconds (95%)
Hot Start	<10 seconds (95%)
Mode of Operation	Autonomous (Non-Assisted) GPS

PRODUCT SPEC SHEET
APX 7500 MOBILE

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
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
Temperature Shock	503.1	-	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	-	507.5	II/Aggravated
Salt Fog	509.1	-	509.2	-	509.3	-	509.4	-	509.5	-
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, II	516.3	I, IV	516.4	I, IV	516.5	I, IV	516.6	I, V, VI

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	Per MIL-STD
ESD	IEC 801-2 KV
Water and Dust Intrusion	IP54 MIL-STD

FCC TYPE ACCEPTANCE ID	
FCC ID	BAND AND POWER LEVEL
AZ492FT3821	25-100 Watts (136-174 MHz)
AZ492FT4898	25-100 Watts (136-174 MHz) and 25-100 Watts (380-470 MHz)
AZ492FT4895	10-50 Watts (136-174 MHz) and 10-40Watts (380-470 MHz)
AZ492FT5858	10-35 Watt (764-870 MHz)
AZ492FT7037	10-50 Watts (136-174 MHz) and 10-35 Watt (764-870 MHz)
AZ492FT7035	25-100 Watts (136-174 MHz) and 10-35 Watt (764-870 MHz)
AZ492FT3824	10-50 Watts (136-174 MHz)
AZ492FT4894	10-40 Watts (380-470 MHz)
AZ492FT4897	25-100 Watts (380-470 MHz)
AZ492FT4896	10-45 Watts (450-520 MHz)
AZ492FT7043	10-40 WATTS (380-470 MHz) and 10-35 Watt (764-870 MHz)
AZ492FT7044	10-45 Watts (450-520 MHz) and 10-35 Watt (764-870 MHz)

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

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

+ Specs includes performance for the non-GNSS/GNSS bands

++ Output power in to 8 and 3.2 Ohm external speakers respectively

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

Radio meets applicable regulatory requirements.

For more information about how to interoperate without boundaries, visit motorolasolutions.com/apx

