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(700/800 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 MOBILE RADIO

FEATURES AND BENEFITS:

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

Up to 2000 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

Utlizes 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

* Per the FCC Narrowbanding rules, new products (APX7500 UHFR1 with UHFR2 Mid Power combination AND UHFR1 High Power with 700/800 MHz combination) submitted for FCC certification after January 1, 2011 are restricted from being granted certification at 25KHz for United States – State & Local Markets only.

APX 7500 CONTROL HEAD PORTFOLIO

O2 RUGGED CONTROL HEAD

- Large color display with intelligent lighting
- 3 lines of text 14 characters max / 1 line of icons / 1 line of menus
- Built in 7.5 watt speaker
- Multiple control head configuration with O2 and O7
- Motorcycle configuration available
- Multifunction volume/ channel knob
- Night/day mode button

O3 HAND HELD CONTROL HEAD

- Large color display with intelligent lighting
- 2 lines of text 14 characters max / 1 line of icons / 1 line of menus
- Integrated full size DTMF keypad
- Hand-held control head with intuitive user interface
- Two quick-access side buttons
- Display contrast selector

O5 STANDARD CONTROL HEAD

- Tri-color display with intelligent lighting
- 2 lines of text 14 characters max / 1 line of icons / 1 line of menus
- Available with Keypad Microphone
- Multiple control head configuration, with up to four O5 heads
- Motorcycle configuration available
- Display contrast selector

O7 ENHANCED CONTROL HEAD

- Large color display with intelligent lighting
- 3 lines of text 14 characters max / 1 line of icons / 1 line of menus
- Available with Lighting & Siren Controls or DTMF Keypad
- Multiple control head configuration with O2 and O7
- Motorcycle configuration available
- Multifunction volume/ channel knob
- Night/day mode button

O9 INTEGRATED CONTROL HEAD

- Extra-large full color display with intelligent lighting
- 2 lines of text 14 characters max / 1 line of icons / 1 line of menus
- Integrated full size DTMF keypad
- Large programmable one-touch buttons
- Dedicated siren controls
- Integrated Response Selector
- Night/day mode button

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 APX 7500

		Inches	Millimeters
Mid Power Radio Transceiver		2 x 7 x 8.6	50.8 x 177.8 x 218.4
O5 Control Head		2 x 7 x 2.5	50.8 x 180.3 x 63.5
O2 Control Head		2.7 x 8 x 2.1	68.4 x 206 x 52.83
O7 Control Head		2 x 7 x 1.5	50.8 x 178 x 40
Mid Power Radio Transceiver and O5 Control Head—Dash Mount		2 x 7 x 9.6	50.8 x 180.3 x 243.8
Mid Power Radio Transceiver and O2 Control Head - Dash Mount		2.7 x 8 x 10.5	68.4 x 206 x 268
Mid Power Radio Transceiver and O7 Control Head - Dash Mount		2 x 7 x 10.3	50.8 x 178 x 262
Mid Power Radio Transceiver and Remote Mount		2.0 x 7 x 9.6	50.8 x 180.3 x 243.8
High Power Radio Transceiver		2.9 x 11.5 x 8.8	74 x 293 x 223
High Power Radio Transceiver with Handle		3.4 x 11.5 x 8.8	87 x 293 x 223
Mid Power Radio Transceiver and O5 Control Head Weight		6.6 lbs	3.0 kg
Mid Power Radio Transceiver and O2 Control Head Weight		7.12 lbs	3.23 kg
Mid Power Radio Transceiver and O7 Control Head Weight		6.74 lbs	3.06 kg
High Power Radio Transceiver Weight	With Trunnion Without Trunnion	14.2 lbs 12 lbs	6.4 kg 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		25/12.5 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 25-110 Watts		10-40 Watts or 25-110 Watts		10-45 Watts (450-485 MHz) 10-40 Watts (485-512 MHz) 10-25 Watts (512-520 MHz)	
Frequency Stability[*] (−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 kHz / ±2.5 kHz		±5 kHz/±4 kHz (NPSPAC) /±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	1.10%		1.10%		1.10%		1.10%		1.10%	
Emissions[*]	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[*]	+1, −3 dB (EIA)		+1, −3 dB (EIA)		+1, −3 dB (EIA)		+1, −3 dB (EIA)		+1, −3 dB (EIA)	
FM Hum & Noise[*] 25 kHz 12.5 kHz	50 dB 48 dB		50 dB 48 dB		53 dB 52 dB		53 dB 50 dB		53 dB 50 dB	
Audio Distortion[*] 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

		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	25/12.5 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.)		+/-0.8 PPM	+/-0.8 PPM	+/-0.8 PPM		+/-0.8 PPM		+/-0.8 PPM	
				Pre-Amp	Standard	Pre-Amp	Standard	Pre-Amp	Standard
Analog Sensitivity*	12 dB SINAD	-121 dBm	-121 dBm	-123 dBm	-119 dBm	-123 dBm	-119 dBm	-123 dBm	-119 dBm
Digital Sensitivity	5% BER	-121.5 dBm	-121.5 dBm	-123 dBm	-119 dBm	-123 dBm	-119 dBm	-123 dBm	-119 dBm
Intermodulation	25 kHz	82 dB	82 dB	84 dB	86 dB	82 dB	86 dB	82 dB	86 dB
	12.5 kHz	82 dB	82 dB	85 dB	86 dB	83 dB	85 dB	83 dB	85 dB
Spurious Rejection		91 dB	91 dB	95 dB		93 dB		93 dB	
Audio Distortion at rated*		1.20%	1.20%	1.20%		1.20%		1.20%	
FM Hum & Noise	25 kHz	59 dB	59 dB	59 dB		55 dB		57 dB	
	12.5 kHz	50 dB	50 dB	50 dB		50 dB		50 dB	
Selectivity*	25 kHz	85 dB	85 dB	85 dB		85 dB		85 dB	
	12.5 kHz	75 dB	75 dB	75 dB		75 dB		75 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 25-110 Watts (136-174 MHz), 10-40W or 25-110 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 (110W) 450-520 MHz (10-45 Watt) 11A (45W) 8A (15W) 380-470 MHz (25-110 Watt) 24A (110W)

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

MOTOROLA

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	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	1 Proc	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	1 Proc	509.2	1 Proc	509.3	1 Proc	509.4	1 Proc	509.5	1 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, 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	-30ºC / +60ºC
Storage Temperature	-40ºC / +85ºC
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	25-110 Watts (136-174 MHz)
AZ492FT4898	25-110 Watts (136-174 MHz) and 25-110 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	25-110 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	25-110 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 single-tone method 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

MOTOROLA *SOLUTIONS*

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