



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
- 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
- Siren and Light Interface Module

* Per the FCC Narrowbanding rules, new products (APX7500 UHF R1 with UHF R2 Mid Power combination AND UHF R1 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



02 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 (up to 4)
- Motorcycle configuration available
- Multifunction volume/channel knob
- Night/day mode button



03 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



05 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 (up to 4)
- Motorcycle configuration available
- Display contrast selector



07 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 (up to 4)
- Configuration available
- Multifunction volume/channel knob
- Night/day mode button



09 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

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 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 ¹ | 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 ² (-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 ³ | ±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 | 1.10% | | 1.10% | | 1.10% | | 1.10% | | 1.10% | |
| Emissions ⁴ | 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 ⁵ | +1, -3 dB (EIA) | | +1, -3 dB (EIA) | | +1, -3 dB (EIA) | | +1, -3 dB (EIA) | | +1, -3 dB (EIA) | |
| FM Hum & Noise ⁶ | 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 ⁷ | 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% | |

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 | 25/12.5 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 | |
| Analog Sensitivity* 12 dB SINAD | -121 dBm | -121 dBm | Pre-Amp -123 dBm | Standard -119 dBm | Pre-Amp -123 dBm | Standard -119 dBm | Pre-Amp -123 dBm |
| Digital Sensitivity 5% BER | -121.5 dBm | -121.5 dBm | -123 dBm | -119 dBm | -123 dBm | -119 dBm | -123 dBm |
| Intermodulation | 25 kHz | 82 dB | 84 dB | 86 dB | 82 dB | 86 dB | 82 dB |
| | 12.5 kHz | 82 dB | 82 dB | 85 dB | 83 dB | 85 dB | 83 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 | 57 dB |
| | 12.5 kHz | 50 dB | 50 dB | 50 dB | 50 dB | 50 dB | 50 dB |
| Selectivity* | 25 kHz | 85 dB | 85 dB | 85 dB | 85 dB | 85 dB | 85 dB |
| | 12.5 kHz | 75 dB | 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 |

PRODUCT SPEC SHEET
APX 7500 MOBILE

| 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, III, V | 516.3 | I, V, VI | 516.4 | I, V, VI | 516.5 | I, V, VI | 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 | 25-110 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

