



PROJECT 25 MOBILE RADIO

APX™ 5500

We've put exceptional flexibility into an advanced mission critical mobile radio that's easy to operate and intuitive to use. The APX 5500 P25 mobile allows users to choose from 2 control heads, mid and high power models and multiple installation configurations in an easy to install design. Innovative safety features such as GPS location tracking, intelligent lighting and one-touch controls help to keep first responders safer than ever before.

Focus on the task not the technology, with the hardworking mission critical mobile that turns mission critical into mission complete.

FLEXIBLE PLATFORM

Interchangeable control heads (O2, O3, O5 and O7) and transceivers (mid power and high power). Dual control head support offered on the O2, O5 and O7 control heads

O3 hand held control head – this unique, palm-sized device is easy to read and operate, with its large color display and keypad

The O2, O5, and O7 control head – give you a rugged display, easy-to-use controls and programmable soft buttons for even more radio flexibility

EASY TO INSTALL AND EFFORTLESS TO USE

Mid-power model fits into any existing XTL footprint, so you can reuse mounting holes and cables

High-power model trunnion design lets you remove the radio without removing the cables

12 character RFID label helps you track information without uninstalling your radio

CUTTING-EDGE TECHNOLOGY AND ADVANCED FEATURES

Project 25 Phase 2 technology provides twice the voice capacity

Integrated GPS lets you locate and track an individual or vehicle

Advanced features like intelligent lighting, radio profiles and text messaging improve communication and coordination

O3 Hand Held Control Head features

- 4 lines: 2 lines (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

O5 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
- Dual control head configuration to fully control a single radio from 2 different wired locations

PRODUCT SPEC SHEET

APX 5500

FEATURES AND BENEFITS:

Available in 700/800MHz, VHF, UHF R1, and UHF R2
Up to 870 Channels

Trunking standards supported:

- Clear or digital encrypted Trunked Operation
- Capable of SmartZone®, SmartZone Omnilink, SmartNet®

Analog MDC-1200 and Digital APCO P25 Conventional System Configurations

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

Embedded digital signaling (ASTRO and ASTRO 25)

Integrated GPS capable

Integrated Encryption Hardware

Intelligent lighting

Radio profiles

Unified Call List

Meets applicable MIL-STD 810C, D, E, F and G

Ships standard IP54

Utilizes Windows XP, Vista and Windows 7 Customer Programming Software (CPS)

- Supports USB Communications
- Built in FLASHport™ support

Re-use of most XTL™ accessories, plus new IMPRES 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
- Tactical OTAR

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 25-100 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 (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	±2.8 kHz	±2.8 kHz	±2.8 kHz	±2.8 kHz	±2.8 kHz
Emissions*	Conducted+ Radiated+ -75/-85 dBc -20/-40 dBm	Conducted+ Radiated+ -75 dBc -20 dBm	Conducted+ Radiated+ -85 dBc -20 dBm	Conducted+ Radiated+ -85 dBc -20 dBm	Conducted+ Radiated+ -85 dBc -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	-50 dB -48 dB	-50 dB -48 dB	-53 dB -52 dB	-53 dB -50 dB
Audio Distortion*	2%	2%	2%	2%	2%

DIMENSIONS

	Millimeters	Inches
Mid Power Radio Transceiver	50.8 x 177.8 x 218.4	2 x 7 x 8.6
O5 Control Head	50.8 x 180.3 x 63.5	2 x 7 x 2.5
O2 Control Head	68.4 x 206 x 52.83	2.7 x 8 x 2.1
O7 Control Head	50.8 x 178 x 40	2 x 7 x 1.5
Mid Power Radio Transceiver and O5 Control Head—Dash Mount	50.8 x 180.3 x 243.8	2 x 7 x 9.6
Mid Power Radio Transceiver and O2 Control Head—Dash Mount	68.4 x 206 x 268	2.7 x 8 x 10.5
Mid Power Radio Transceiver and O7 Control Head—Dash Mount	50.8 x 178 x 262	2 x 7 x 10.3
Mid Power Radio Transceiver and Remote Mount	50.8 x 180.3 x 243.8	2.0 x 7 x 9.6
High Power Radio Transceiver	74 x 293 x 223	2.9 x 11.5 x 8.8
High Power Radio Transceiver with Handle	87 x 293 x 223	3.4 x 11.5 x 8.8
Mid Power Radio Transceiver and O5 Control Head Weight	3.0 kg	6.6 lbs
Mid Power Radio Transceiver and O2 Control Head Weight	3.23 kg	7.12 lbs
Mid Power Radio Transceiver and O7 Control Head Weight	3.06 kg	6.74 lbs
High Power Radio Transceiver Weight	With Trunnion Without Trunnion	6.4kg 5.4 kg
		14.2 lbs 12 lbs

APX 5500 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 2)
- 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 2)
- 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 2)
- Multifunction volume/channel knob
- Night/day mode button

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 Standard	Pre-Amp Standard	Pre-Amp Standard	Pre-Amp Standard	Pre-Amp Standard
Digital Sensitivity 5% BER	-121.5 dBm	-121.5 dBm	-123 dBm -119 dBm	-123 dBm -119 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	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	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	—		—	

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.

POWER AND BATTERY DRAIN

Model Type	136-174MHz, 380-470MHz, 450-520MHz, 764-870MHz
Minimum RF Power Output	10-35 Watt (764-870MHz), 10-50 Watts or 25-100 Watts (136-174MHz), 10-40W or 25-100 Watts (380-470MHz), 10-45 Watts (450-485MHz), 10-40 Watts (485-512MHz), 10-25 Watts (512-520MHz)
Operation	13.8V DC ±20% Negative Ground
Standby at 13.8V	0.85A
Receive at Rate Audio at 13.8V	3.2A
Transmit Current (A) at Rated Power (W)	136-174MHz (10-50 Watt) 13A (50W) 8A (15W) 380-470MHz (10-40 Watt) 11A (40W) 8A (15W) 450-485MHz (10-45 Watt) 11A (45W) 8A (15W) 764-870MHz (10-35 Watt) 12A (50W) 8A (15W) 136-174MHz (25-110 Watt) 20A (100W) 380-470MHz (25-110 Watt) 24A (100W)

GPS SPECIFICATIONS

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

PRODUCT SPEC SHEET

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	—	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	514.1w	VIII/F, Curve-W	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24	514.6	I-cat.24
Shock	516.2	I, III	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	1
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, 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

	Band	Output Power	Transmitter Number
Key Storage	136-174MHz	10-50 Watts	AZ492FT3824
Key Erasure	136-174MHz	25-100 Watts	AZ492FT3821
Standards	380-470MHz	10-40 Watts	AZ492FT4894
	380-470MHz	25-100 Watts	AZ492FT4987
	450-520MHz	10-45 Watts	AZ492FT4896
	764-870 MHz	10-35 Watt	AZ492FT5858

* 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, visit www.motorolasolutions.com/caribbean/astro

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