MOTOROLA SOLUTIONS

APX™ 6500

PROJECT 25 MOBILE RADIO

We've put exceptional flexibility into an advanced mission critical mobile radio that's easy to operate and intuitive to use. The APX 6500 P25 mobile allows users to choose from 4 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 that best support your operational needs - O2, O3, O5, O7 and O9
- Two transceiver options - high-power and mid-power
- Dual control head support offered on the O2, O5, O7 and O9 control heads

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 RF ID 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

APX™ 6500 SPECIFICATIONS

FEATURES AND BENEFITS:

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

Channels: 1000*

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/20kHz/25kHz)

Embedded digital signaling (ASTRO and ASTRO 25)

Integrated Encryption Hardware

Software Key

ASTRO 25 Integrated Voice & Data

Intelligent lighting

Integrated GPS/GLONASS for outdoor location tracking

Radio profiles

Unified Call List

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

Ships standard IP54

Utlizes Windows XP, Vista and Windows 7and 8 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 Rekeying (OTAR)

12 character RF ID asset tracking

Tactical OTAR

Siren and Light Interface Module

* Optional enhancement package increases capacity to 3000 channels

** CPS version R12.00.00 and greater ordered after June 2014 will only support Windows 7 and 8

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	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 W	10-35 W	10-50 W or 25-110 W	10-40 W or 25-110 W	10-45 W (450-485 MHz) 10-40 W (485-512 MHz) 10-25 W (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+ –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*	2 %	2 %	2 %	2 %	2 %

DIMENSIONS

	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

APX 6500 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

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

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	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	Standard -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		—		—	

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.

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

POWER AND BATTERY DRAIN

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

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/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	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	514.1	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, 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 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

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
764-870 MHz	10-35 W	AZ492FT5858
136-174 MHz	25-110 W	AZ492FT3821
136-174 MHz	10-50 W	AZ492FT3824
380-470 MHz	10-40 W	AZ492FT4894
380-470 MHz	25-110 W	AZ492FT4897
450-520 MHz	10-45 W	AZ492FT4896

* 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.

MOTOROLA SOLUTIONS

Motorola Solutions, Inc. 500 West Monroe Street, Chicago, Il 60661 U.S.A. **motorolasolutions.com**

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