

SPECIFICATION SHEET



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 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 (O3 and O5) and transceivers (mid power and high power). Dual control head support offered on the O5
- O3 hand held control head – this unique, palm-sized device is easy to read and operate, with its large color display and keypad
- O5 control head – gives you a rugged display, easy-to-use controls and five programmable soft buttons for even more radio flexibility

EASY TO INSTALL AND EFFORTLESS TO USE

- Mid-power model fits into any existing XTLL 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
 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		25/20/12.5 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 (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+ -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	-40 dB	-45 dB -40 dB	-40 dB	-45 dB -40 dB	-40 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
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 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 Control Head Weight			7.0 lbs	3.17 kg
High Power Radio Transceiver Weight	With Trunnion		14.2 lbs	6.4 kg
	Without Trunnion		12 lbs	5.4 kg



03 Hand Held 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
- Dual control head configuration to fully control a single radio from 2 different wired locations

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
Digital Sensitivity 1% BER	0.3 µV	0.3 µV	0.25 µV	0.4 µV	0.25 µV	0.4 µV	0.25 µV
5% BER	0.25 µV	0.25 µV	0.2 µV	0.3 µV	0.2 µV	0.3 µV	0.2 µV
Intermodulation	80 dB	80 dB	80 dB	85 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	—	82 dB	82 dB	82 dB	82 dB
12.5 kHz	65 dB	65 dB	70 dB	70 dB	70 dB	70 dB	70 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 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) 380-470 MHz (10-40 Watt) 380-470 MHz (10-40 Watt)	13A (50W) 11A (40W) 11A (45W)	8A (15W) 8A (15W) 8A (15W)	764-870 MHz (10-35 Watt) 136-174 MHz (25-110 Watt) 380-470 MHz (25-110 Watt)	12A (50W) 20A (100W) 24A (100W)	8A (15W)

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	Only 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	Only 1 Proc	507.5	II-Aggravated
Salt Fog	509.1	Only 1 Proc	509.2	Only 1 Proc	509.3	Only 1 Proc	509.4	Only 1 Proc	509.5	Only 1 Proc
Blowing Dust	510.1	I	510.2	I, II	510.3	I, II	510.4	I, II	510.5	I, II
Vibration	514.1w	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	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 Watts	AZ492FT5858
136-174 MHz	25-100 Watts	AZ492FT3821
136-174 MHz	10-50 Watts	AZ492FT3824
380-470 MHz	10-40 Watts	AZ492FT4894
380-470 MHz	25-100 Watts	AZ492FT4897
450-520 MHz	10-45 Watts	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.



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R3-1-2047A