

## SPECIFICATION SHEET



# APX™ 6000

## PROJECT 25 PORTABLE RADIO

Delivering outstanding performance in a compact form factor without sacrificing the features you need most. The APX™ 6000 is the next generation of ruggedly-reliable performers that gives you the advanced features such as Mission Critical Wireless and GPS location tracking in the smallest, P25 Phase 2 capable radio available. Whether you're on patrol or racing to a fire, the APX 6000 puts you in greater control of your safety, response time and technology investment.

Focus on the task not the technology, with the real-world ready radio that turns mission critical into mission complete.



- Channel Capacity:
  - 870 standard
  - 1250 max
- Universal Push-to-Talk
- T-Grip
- Dual Battery Latch
- Orange emergency button
- 16 position rotary knob
- 2 position concentric switch
- 3 position toggle switch
- 3 programmable side buttons
- Transmit LED indicator
- Backlit Keypad:
  - Home and Data buttons
  - 3 soft keys
  - 4 direction navigation key
  - 4 x 3 keypad
- Full Bitmap Display:
  - 2 lines of icons
  - 4 lines x 14 characters of text
  - Status icons

### CUTTING-EDGE FEATURES IN A COMPACT SIZE

- Innovative T-grip design gives you a secure grip and better control
- High-contrast color display is easy to read in different lighting conditions
- Top display is quick to read while looking down, at a glance or from an angle
- Universal push-to-talk button with enhanced grooves is easy to find by "touch"

### EXCELLENT AUDIO YOU CAN HEAR LOUD AND CLEAR

- Excellent audio ensures voice communications are intelligible, even in high noise environments
- Dual sided 2 microphone noise canceling technology
- Equipped with the latest AMBE digital voice vocoder

### FUTURE-READY TECHNOLOGY TO RELY ON TODAY

- Smallest P25 Phase 2 capable radio available that provides twice the voice capacity
- Backwards and forwards compatible with all Motorola mission critical radio systems
- Supports applications like Mission Critical Wireless and GPS location tracking for greater safety



# APX™ 6000 SPECIFICATIONS

## FEATURES AND BENEFITS:

- Available in 700/800 MHz, VHF, and UHF Range 1 bands
- 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 / 12.5 kHz / 25 kHz)
- Embedded digital signaling (ASTRO & ASTRO 25)
- Intelligent Lighting
- Radio Profiles
- Unified Call List (Models 2 and 3 only)
- User programmable voice announcement
- Meets Applicable Mil Specs 810C, D, E, F and G
- Immersible IP67 standard (submersible 1 meter, 30 minutes)\*
- Yellow and green colored housing options
- Custom recessed label areas

## Superior Audio Features:

- 0.5 W high audio speaker
  - Dual microphones
  - 2-mic noise canceling technology
- Utilizes Windows XP, Vista and Windows 7 Customer Programming Software (CPS)
- Supports USB communications
  - Built in FLASHport™ support
- Full portfolio of accessories including IMPRES batteries, chargers and audio devices

## OPTIONAL FEATURES:

- GPS Location Tracking
- Mission Critical Wireless
- Enhanced Encryption capability
- Programming Over Project 25
- Over the Air Rekey
- Text Messaging

\* Immersible radios meet industry standards (IPx7) for immersion.

## TRANSMITTER – TYPICAL PERFORMANCE SPECIFICATIONS

		700/800	VHF	UHF Range 1
Frequency Range/Bandsplits	700 MHz 800 MHz	763-775, 793-805 MHz 806-824, 851-869 MHz	136-174 MHz	380-470 MHz
Channel Spacing		25/20/12.5 kHz	25/20/12.5 kHz	25/20/12.5 kHz
Maximum Frequency Separation		Full Bandsplit	Full Bandsplit	Full Bandsplit
Rated RF Output Power Adj <sup>1</sup>	700 MHz 800 MHz	1-2.5 Watts 1-3 Watts	1-6 Watts	1-5 Watts
Frequency Stability <sup>1</sup> (-30°C to +60°C; +25°C Ref.)		±0.00010 %	±0.00010 %	±0.00010 %
Modulation Limiting <sup>1</sup>		±5 kHz / ±4 kHz / ±2.5 kHz	±5 kHz / ±4 kHz / ±2.5 kHz	±5 kHz / ±4 kHz / ±2.5 kHz
Emissions (Conducted and Radiated) <sup>1</sup>		-75 dB	-75 dB	-75 dB
Audio Response <sup>1</sup>		+1, -3 dB	+1, -3 dB	+1, -3 dB
FM Hum & Noise		-47 dB	-47 dB	-47 dB
Audio Distortion <sup>1</sup>		< 1 %	0.50 %	0.50 %

## BATTERIES FOR APX 6000

Battery Capacity / Type	Dimensions (HxWxD)	Weight	Battery Part Number	Battery Capacity
Li-Ion IMPRES 2150 mAh IP67	3.39" x 2.34" x 1.46"	5 oz	PMNN4403	2150 mAh
Li-Ion IMPRES 2900 mAh IP67	3.07" x 2.34" x 1.65"	6.53 oz	NNTN7038	2900 mAh
Li-Ion IMPRES 4200 mAh IP67	5.07" x 2.34" x 1.65"	11.29 oz	NNTN7034	4200 mAh
Li-Ion IMPRES 4100 mAh FM <sup>2</sup> IP67	5.07" x 2.34" x 1.65"	11.29 oz	NNTN7033	4100 mAh
NiMH IMPRES 2100 mAh IP67	5.12" x 2.34" x 1.57"	11.82 oz	NNTN7037	2100 mAh
NiMH IMPRES 2000 mAh FM <sup>2</sup> IP67	5.12" x 2.34" x 1.57"	11.82 oz	NNTN7036	2000 mAh
NiMH IMPRES 2000 mAh FM <sup>2</sup> Rugged	5.12" x 2.34" x 1.57"	11.82 oz	NNTN7035	2000 mAh
NiMH IMPRES 2100 mAh Rugged	5.12" x 2.34" x 1.57"	11.82 oz	NNTN7573	2100 mAh

## RADIO MODELS

**MODEL 1**



**MODEL 2**



**MODEL 3**



Display	Full bitmap monochromatic LCD top display 1 line text x 8 characters 1 line of icons No menu support Multi-color backlight	Top display plus: Full bitmap color LCD display 4 lines of text x 14 characters 2 lines of icons 1 menu line x 3 menus White backlight	Top display plus: Full bitmap color LCD display 4 lines of text x 14 characters 2 lines of icons 1 menu line x 3 menus White backlight
Keypad	none	Backlight keypad 3 soft keys 4 direction Navigation key	Backlight keypad 3 soft keys 4 direction navigation key 4x3 keypad Home and Data buttons
Channel Capacity	96	870	870
FLASHport Memory	64 MB	64 MB	64 MB
700/800 MHz (764-869 MHz)	H98UCD9PW5AN Q360CY/Q360EF	H98UCF9PW6AN Q360CY/Q360EF	H98UCH9PW7AN Q360CY/Q360EF
VHF (136-174 MHz)	H98KGD9PW5AN Q360DD/Q360EG	H98KGF9PW6AN Q360DD/Q360EG	H98KGH9PW7AN Q360DD/Q360EG
UHF Range1 (380-470 MHz)	H98QDD9PW5AN Q360DA/Q360EH	H98QDF9PW6AN Q360DA/Q360EH	H98QDH9PW7AN Q360DA/Q360EH
Buttons & Switches	Large PTT button ▪ Angled On/Off volume knob ▪ Orange emergency button ▪ 16 position top-mounted rotary knob 2-position concentric switch ▪ 3-position toggle switch ▪ 3 programmable side buttons		
<b>Transmitter Certification</b>			
700/800 (764-869 MHz)	AZ489FT5859/ AZ489FT5863		
VHF (136-174 MHz)	AZ489FT3824/ AZ489FT3829		
UHF Range1 (380-470 MHz)	AZ489FT4899/ AZ489FT4892		
<b>FCC Emission Designators</b>			
FCC Emission Designators	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 20K0F1E		
<b>Power Supply</b>			
Power Supply	One rechargeable Li-Ion 2150 mAh battery standard, or or high cap Li-Ion		

## RECEIVER – TYPICAL PERFORMANCE SPECIFICATIONS

	700/800	VHF	UHF Range 1	
Frequency Range/Bandsplits	700 MHz 800 MHz	763-775, 793-805 MHz 806-824, 851-869 MHz	136-174 MHz	380-470 MHz
Channel Spacing	25/20/12.5 kHz		25/20/12.5 kHz	25/20/12.5 kHz
Maximum Frequency Separation	Full Bandsplit		Full Bandsplit	Full Bandsplit
Audio Output Power at Rated <sup>1</sup>	500mW		500mW	500mW
Frequency Stability <sup>1</sup> (-30°C to +60°C; +25°C Ref.)	±0.00010 %		±0.00010 %	±0.00010 %
Analog Sensitivity <sup>3</sup>	12 dB SINAD	0.250 µV	0.216 µV	0.234 µV
Digital Sensitivity <sup>4</sup>	1% BER (800 MHz) 5% BER	0.347 µV (0.333 µV) 0.251 µV	0.277 µV 0.188 µV	0.307 µV 0.207 µV
Selectivity <sup>1</sup>	25 kHz channel 12.5 kHz channel	75.7 dB 67.5 dB	79.3 dB 70 dB	78.3 dB 68.1 dB
Intermodulation	80 dB		80.5 dB	80.2 dB
Spurious Rejection	76.6 dB		93.2 dB	80.3 dB
FM Hum and Noise	25 kHz 12.5 kHz	-54 dB -48 dB	-53.8 dB -48 dB	-53.5 dB -47.4 dB
Audio Distortion <sup>1</sup>	0.9 %		1.20 %	0.91 %

## APX™ 6000 SPECIFICATIONS

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/Basic Hot	501.5	I/A1, II/A2
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	I	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	I	509.2	I	509.3	I	509.4	Only 1 Proc	509.5	Only 1 Proc
Blowing Dust	510.1	I	510.2	I	510.3	I	510.4	I	510.5	I
Blowing Sand	Only 1 Proc	Only 1 Proc	510.2	II	510.3	II	510.4	II	510.5	II
Immersion	512.1	I	512.2	I	512.3	I	512.4	I	512.5	I
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
Shock (Drop)	516.2	II	516.2	IV	516.4	IV	516.5	IV	516.6	IV

\* Applicable to Rugged products only

DIMENSIONS OF THE RADIOS WITHOUT BATTERY		
	Inches	Millimeters
Length	5.47	139
Width Push-To-Talk button	2.39	60.7
Depth Push-To-Talk button	1.47	1.4
Width Top	3.32	84.3
Depth Top	2.13	54.1
Depth Bottom of Battery	1.64	41.6
Weight of the radios without battery	11.6 oz	330 g

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 140-3 FIPS 197

GPS SPECIFICATIONS	
Channels	12
Tracking Sensitivity	-159 dBm
Accuracy <sup>5</sup>	<10 meters (95%)
Cold Start	<60 seconds (95%)
Hot Start	<10 seconds (95%)
Mode of Operation	Autonomous (Non-Assisted) GPS

RUGGED OPTION SPECIFICATIONS	
Leakage (immersion)	MIL-STD-810 C,D,E,F and G Method 512.X Procedure I
Housing Availability	Black, Public Safety Yellow and High Impact Green

ENVIRONMENTAL SPECIFICATIONS	
Operating Temperature <sup>6</sup>	-30°C / +60°C
Storage Temperature <sup>6</sup>	-40°C / +85°C
Humidity	MIL-STD 507.x PROC. II
ESD	IEC 801-2 KV
Water and Dust Intrusion	IP67 and MIL-STD 507.x PROC. II
Immersion	MIL-STD 512.X/I

<sup>1</sup> Measured in the analog mode per TIA / EIA 603 under nominal conditions

<sup>2</sup> When used with an FM approved intrinsically safe radio

<sup>3</sup> Measured conductively in analog mode per TIA / EIA 603 under nominal conditions.

<sup>4</sup> Measured conductively in digital mode per TIA / EIA IS 102.CAAA under nominal conditions.

<sup>5</sup> Accuracy specs are for long-term tracking (95th percentile values >5 satellites visible at a nominal -130 dBm signal strength).

<sup>6</sup> Temperatures listed are for radio specifications. Battery storage is recommended at 25°C, ±5°C to ensure best performance.

Specifications subject to change without notice. All specifications shown are typical. Radio meets applicable regulatory requirements.



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R3-4-2035B