



# APX™ PROJECT 25 PORTABLE RADIO

Packed with performance and features, the next generation of incredibly rugged performers, the APX 6000, is compact enough to fit perfectly in your hand. With advancements such as Mission Critical Wireless and GPS location tracking, the APX™ 6000 is one highly capable P25 Phase 2 radio.

Whether you're on patrol or responding to an emergency, the APX 6000 gives you greater control over safety, response times and your technology investment.

## CUTTING-EDGE FEATURES IN A COMPACT SIZE

- Innovative T-grip design fits perfectly in your hand for better control
- High-contrast colour display is easy to read in different lighting conditions
- Top display is easy 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 cancelling technology
- Equipped with the latest AMBE digital voice vocoder

## FUTURE-READY TECHNOLOGY TODAY

- Small P25 Phase 2 capable radio 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

- Universal Push-To-Talk
- T-grip
- Dual battery latch
- Orange emergency button
- 16-position rotary switch
- 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
  - 4x3 keypad
- Full bitmap display
  - 2 lines of icons
  - 4 lines x 14 characters of text
  - Status icons

**PRODUCT SPEC SHEET**  
APX™ 6000



**FEATURES AND BENEFITS:**

Available in 700-800 MHz, VHF, UHF Range 1 and UHF Range 2 bands

Operational 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 / 30 kHz / 25 kHz)\*

Embedded digital signalling (ASTRO & ASTRO 25)

Available in 3 models

Integrated GPS capable

Intelligent lighting

Radio profiles

Unified call list (models 2.5 and 3.5 only)

User programmable voice announcement

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

IP67 standard (submersible 1 metre, 30 minutes)\*\*

Yellow and green coloured housing options

Custom recess label areas

Superior audio features:

- 0.5 W high audio speaker
- Dual microphones
- 2-microphone noise cancelling technology

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

- Supports USB communications

- Built in FLASHport™ support

Full portfolio of accessories including IMPRES batteries, chargers and audio devices

**OPTIONAL FEATURES:**

Mission Critical Wireless\*\*\*

Enhanced encryption capability

Programming Over Project 25 (POP25)

Over the Air Rekeying (OTAR)

Text messaging

Man Down

Rugged submersible housing\*\* (2 metres, 2 hours)

\* Per the FCC Narrowbanding rules, new products (APX6000XE UHF R1, UHF R2) submitted for FCC certification after January 1, 2011 are restricted from being granted certification at 25KHz for United States - State & Local Markets only.

\*\*Radios meet industry standards (IPx7) for immersion

\*\*\*Compatible with BT 2.0 and HSP and PAN BT Profiles

**TRANSMITTER - TYPICAL PERFORMANCE SPECIFICATIONS**

	700/800	VHF	UHF Range 1	UHF Range 2
Frequency Range/Bandsplits	700 MHz 800 MHz	763-776, 793-806 MHz 806-824, 851-870 MHz	136-174 MHz	380-470 MHz 450-520 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>		1-3 Watts Max	1-6 Watts Max	1-5 Watts Max 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 / ±2.5 kHz	±5 kHz / ±4 kHz / ±2.5 kHz
Emissions (Conducted and Radiated) <sup>1</sup>		-75 dB	-75 dB	-75 dB -75 dB
Audio Response <sup>1</sup>		+1, -3 dB	+1, -3 dB	+1, -3 dB
FM Hum & Noise	700 MHz 800 MHz	-48 dB/-47 dB -46 dB/-45 dB	-47 dB -45 dB	-47 dB -45 dB
Audio Distortion <sup>1</sup>	700 MHz 800 MHz	0.60 % 1 %	0.50 %	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
Li-Ion IMPRES 2300 mAh FM <sup>2</sup> Rugged	3.39" x 2.34" x 1.65"	6.53 oz	NNTN8092	2300 mAh

\*\*\*Standard shipping battery

**PRODUCT SPEC SHEET**  
APX™ 6000

**RADIO MODELS**



	<b>MODEL 1.5</b>	<b>MODEL 2.5</b>	<b>MODEL 3.5</b>
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 Home and Data buttons	Backlight keypad 3 soft keys 4 direction navigation key 4x3 keypad Home and Data buttons
Channel Capacity*	96	1000	1000
FLASHport Memory	64 MB	64 MB	64 MB
700/800 MHz (763-870 MHz)	H98UCD9PW5AN Q360NM	H98UCF9PW6AN Q360NN	H98UCH9PW7AN Q360EF
VHF (136-174 MHz)	H98KGD9PW5AN Q360NP	H98KGF9PW6AN Q360NR	H98KGH9PW7AN Q360EG
UHF Range 1 (380-470 MHz)	H98QDD9PW5AN Q360NS	H98QDF9PW6AN Q360NT	H98QDH9PW7AN Q360EH
UHF Range 2 (450-520 MHz)	H98SDD9PW5AN Q360NU	H98SDF9PW6AN Q360NV	H98SDH9PW7AN Q360FC
Buttons & Switches	Large PTT button ■ Angled On/Off volume control ■ Orange emergency button ■ 16 position top-mounted rotary switch ■ 2-position concentric switch ■ Multi-color backlight ■ 3-position toggle switch ■ 3 programmable side buttons		

<b>Transmitter Certification</b>	
700/800 (764-869 MHz)	AZ489FT5863
VHF (136-174 MHz)	AZ489FT3829
UHF Range 1 (380-470 MHz)	AZ489FT4892
UHF Range2 (450-520 MHz)	AZ489FT4903

<b>FCC Emissions Designators</b>	
FCC Emissions Designators	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 20K0F1E**

<b>Power Supply</b>	
Power Supply	One rechargeable 2150 mAh Li-Ion Battery Standard (PMNN4403), with alternate battery options available.

\*Enhancement package available

\*\*Per the FCC Narrowbanding rules, new products (APX6000 UHFR1, UHFR2) submitted for FCC certification after January 1, 2011 are restricted from being granted certification at 25KHz for United States - State & Local Markets only.

**RECEIVER - TYPICAL PERFORMANCE SPECIFICATIONS**

		<b>700/800</b>	<b>VHF</b>	<b>UHF Range 1</b>	<b>UHF Range 2</b>
Frequency Range/Bandsplits	700 MHz 800 MHz	763-776 MHz 851-870 MHz	136-174 MHz	380-470 MHz	450-520 MHz
Channel Spacing		25/20/12.5 kHz	25/20/12.5 kHz	25/20/12.5 kHz	25/20/12.5 kHz
Maximum Frequency Separation		Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
Audio Output Power at Rated <sup>1</sup>		500mW	500mW	500mW	1000 mW
Frequency Stability <sup>1</sup> (-30°C to +60°C; +25°C Ref.)		±0.00010 %	±0.00010 %	±0.00010 %	±0.00010 %
Analog Sensitivity <sup>3</sup>	12 dB SINAD	0.250 µV	0.216 µV	0.234 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	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	78.3 dB 67.5 dB
Intermodulation		80 dB	80.5 dB	80.2 dB	80.2 dB
Spurious Rejection		76.6 dB	93.2 dB	80.3 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	-53.5 dB -47.4 dB
Audio Distortion <sup>1</sup>		.9 %	1.20 %	0.91 %	0.91 %

**PRODUCT SPEC SHEET**  
APX™ 6000

**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	1 Proc	507.5	II/Aggravated
Salt Fog	509.1	I	509.2	I	509.3	I	509.4	1 Proc	509.5	1 Proc
Blowing Dust	510.1	I	510.2	I	510.3	I	510.4	I	510.5	I
Blowing Sand	1 Proc	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

**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	1.40	35.6
Width Top	2.98	75.7
Depth Top	1.58	40.1
Depth Bottom of Battery	1.24	31.5
Weight of the radios without battery	10.9 oz	309 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 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

**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 (Standard), 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	Per MIL-STD
ESD	IEC 801-2 KV
Water and Dust Intrusion	IP67, MIL-STD
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.

**PRODUCT SPEC SHEET**  
**APX™ 6000**

**REGULATORY COMPLIANCE**

Radio (R&TTE Article 3.2)	Directive 1999/5/EC RTTE EN 300 086-2 v1.3.1
	EN 300 113-2 v1.5.1
	EN 300 328 v1.7.1
EMC (R&TTE Article 3.1.b)	EN 301 489-1 V1.9.2
	EN 301 489-5 V1.3.1
Electrical Safety (R&TTE Article 3.1.a)	EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011 + AC:2011
	ICNIRP(1998) Occupational Controlled Environment
Environmental	Directive 2002/96/EC WEEE
	Directive 2011/65/EU RoHS-2
Year of first application of CE Mark	2011 (136-174MHz) ; 2012 (380-470MHz)
Type Designator	PMB302D, M, P (136-174MHz) ; PMB502D, M, P (380-470MHz)

Motorola Solutions UK Limited, Jays Close, Viabes Industrial Estate, Basingstoke, Hampshire RG22 4PD [motorolasolutions.com](http://motorolasolutions.com)

MOTOROLA, MOTO, MOTOROLA SOLUTIONS and the Stylised M Logo are trademarks or registered trademarks of Motorola Trademark Holdings, LLC and are used under license. All other trademarks are the property of their respective owners. © 2015 Motorola Solutions, Inc. All rights reserved.

R3-4-2035I/(EA)