



**UNCOMPROMISING QUALITY. UNBEATABLE SIZE.**

# APX™ 2000 PROJECT 25 PORTABLE RADIO

Your people work in the toughest conditions, in some of the noisiest places – at mines, near manufacturing machinery and on street patrol. Communicating with them clearly is imperative for their safety.

They need a radio that is exceptionally durable, overcomes external noise and outlasts the longest shifts. The APX 2000 radio combines the feature-rich technology public safety and industrial users rely on with the real-world affordability they require.

The APX 2000 is big on the attributes you expect from APX in the smallest P25 phase 2 portable in the industry. Flexible and versatile, it's easy to use, extremely durable, with advanced features for improved safety and exceptional noise suppression for clear communications. So you can interoperate with other crews, agencies, responders and P25 systems the moment you need to.

## APX PERFORMANCE, INSIDE AND OUT

The APX 2000 leverages the industry-leading hallmarks of the APX family of P25 TDMA portables. Starting with an innovative 2-microphone design that produces outstanding voice quality and suppresses background noise so users can speak and hear clearly above diesel engines, sirens and heavy equipment.

With simplified controls and two dedicated knobs for volume and channel controls, the APX 2000 provides readiness for any type of work setting. The high-spec RF performance ensures excellent coverage in challenging environments.

## FIRST TO WORK, LAST TO LEAVE

Reporting from a fire or power line, the compact APX 2000 stands up to challenging conditions. It's IP67 and MIL-STD certified to withstand dust, heat, drops and water immersion, with a tempered glass display that resists scratches, abrasions and chemical solvents.

Loaded with advanced P25 features – including Mission Critical Wireless Bluetooth® that increases communication flexibility, GPS for quickly locating personnel and assets, and additional language support for international users – the APX 2000 improves safety, from the moment it's powered on until the last person heads home.

## AFFORDABILITY MEETS PORTABILITY

The APX 2000 is P25 Phase 2 capable for twice the voice capacity, so you can add more users without adding more frequencies or infrastructure. Backwards and forwards compatible with all Motorola Solutions mission critical radio systems, the APX 2000 portable keeps communications running without running up costs.

## ACCESSORIES AS POWERFUL AS APX 2000

- Complete portfolio of remote speaker microphones, headsets and Mission Critical Wireless Bluetooth accessories
- Designed, tested and certified for optimum performance with your radio
- High-powered IMPRES™ batteries that have a slim design to fit the compact radio size



**FEATURES AND BENEFITS:**

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

Trunking standards supported:

- Clear or digital ASTRO® 25 Trunked Operation
- Capable of SmartZone®, SmartZone Omnilink, SmartNet®

Analogue MDC-1200 and Digital APCO P25

Conventional System Configurations

Narrow and wide bandwidth digital receiver (6.25 kHz equivalent / 12.5 kHz / 20 kHz / 25 kHz)

Embedded digital signaling (ASTRO & ASTRO 25)

Available in 2 models

Integrated GPS capable

Lightbar with Intelligent Lighting

Radio Profiles

Unified Call List

User programmable Voice Announcement

International Language Support: Spanish, French, Portuguese, Russian, and Traditional Chinese

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

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

Superior Audio Features:

- 0.5 W high audio speaker
- 2-mic noise canceling technology
- Full rate AMBE vocoder for Phase 1 (FDMA)
- Half rate AMBE+2 vocoder for Phase 2 (TDMA)

Utilises Windows 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\*\*\*

Programming Over Project 25

Tactical Over the Air Rekey only

Text Messaging

GPS Location Tracking

Man Down

Site Selectable Alert Tones

P25 Over the Air Re-keying

P25 Link Layer Authentication

Enhanced Data

Rugged Submersible Housing (2 metres for 2 hours)

\* Radios meet industry standards (IPx7) for immersion

\*\* Chargers and batteries for the APX 2000 radios do not interoperate with other APX radios

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

\*\*\*\* When used with a hazardous location-tested radio

**TRANSMITTER - TYPICAL PERFORMANCE SPECIFICATIONS**

	700/800	VHF	UHF Range 1	UHF Range 2
Frequency Range/Bandsplits	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	25/20/12.5 kHz
Maximum Frequency Separation	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
Rated RF Output Power Adj <sup>1</sup>	1-3 Watts Max	1-5 Watts Max	1-5 Watts Max	1-5 Watts Max
Frequency Stability <sup>1</sup> (-30°C to +60°C; +25°C Ref.)	±0.00010 %	±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	±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	+1, -3 dB
FM Hum & Noise	25 kHz 12.5 kHz	-47 dB -45 dB	-47 dB -45 dB	-47 dB -45 dB
Audio Distortion <sup>1</sup>	25 kHz 12.5 kHz	1.00%	1.00%	1.00%

**BATTERIES FOR APX 2000**

Battery Capacity / Type	Dimensions (HxWxD)	Weight	Battery Part Number	Battery Capacity
Li-Ion IMPRES 2000 mAh IP67 (standard)	114.5 x 55.04 x 17.85 mm	160 grams	NNTN8128_	2000 mAh
Li-Ion IMPRES 2350 mAh IP67	114.5 x 55.04 x 23.15 mm	170 grams	PMNN4424_R	2350 mAh
Li-Ion IMPRES 2500 mAh IP67 HazLoc****	114.5 x 55.04 x 23.15 mm	195 grams	NNTN8560_	2500 mAh
Li-Ion IMPRES 2800 mAh IP67	114.5 x 55.04 x 23.15 mm	170 grams	PMNN4448_R	2800 mAh

**PRODUCT DATA SHEET**  
APX 2000 PORTABLE RADIO



**MODEL 2**



**MODEL 3**

<b>RADIO MODELS</b>		
Display	Full bitmap colour LCD display 3 lines of text x 14 characters 1 line of icons 1 menu line x 3 menus White backlight	Full bitmap colour LCD display 3 lines of text x 14 characters 1 line of icons 1 menu line x 3 menus White backlight
Keypad	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	1,000	1,000
FLASHport Memory	64 MB	64 MB
700/800 MHz (763-870 MHz)	H52UCF9PW6AN Q360GJ/Q360GK	H52UCH9PW7AN Q360GJ/Q360GK
VHF (136-174 MHz)	H52KDF9PW6AN Q360GW/Q360GX	H52KDH9PW7AN Q360GW/Q360GX
UHF Range 1 (380-470 MHz)	H52QDF9PW6AN Q360GM/Q360GL	H52QDH9PW7AN Q360GM/Q360GL
UHF Range 2 (450-520 MHz)	H52SDF9PW6AN Q360GZ/Q360HA	H52SDH9PW7AN Q360GZ/Q360HA
Buttons & Switches	<ul style="list-style-type: none"> <li>■ Large PTT button ■ Orange emergency button ■ 3 programmable side buttons</li> <li>■ Angled ON/OFF volume control ■ 16 position top-mounted rotary switch</li> </ul>	

**TRANSMITTER CERTIFICATION**

700/800 (763-869 MHz)	AZ489FT7050 (Basic)/AZ489FT7049 (Expanded)
VHF (136-174 MHz)	AZ489FT3825 (Basic)/AZ489FT3828 (Expanded)
UHF Range 1 (380-470 MHz)	AZ489FT4907(Basic)/AZ489FT4905 (Expanded)
UHF Range 2 (450-520 MHz)	AZ489FT4909 (Basic)/AZ489FT4910 (Expanded)

**FCC EMISSIONS DESIGNATORS**

FCC Emissions Designators	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 20K0F1E
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**POWER SUPPLY**

Power Supply	One rechargeable Li-Ion 2000 mAh standard battery, with alternate battery options available
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**RECEIVER - TYPICAL PERFORMANCE SPECIFICATIONS**

		<b>700/800</b>	<b>VHF</b>	<b>UHF Range 1</b>	<b>UHF Range 2</b>
Frequency Range/Bandsplits		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	500mW
Frequency Stability <sup>1</sup> (-30°C to +60°C; +25°C Ref.)		±0.00010 %	±0.00010 %	±0.00010 %	±0.00010 %
Analogue Sensitivity <sup>3</sup>	12 dB SINAD	0.250µV	0.216µV	0.234µV	0.234µV
Digital Sensitivity <sup>4</sup>	1% BER	0.400µV	0.277µV	0.307µV	0.307µV
	5% BER	0.250µV	0.188µV	0.207µV	0.207µV
Selectivity <sup>1</sup>	25 kHz channel	-76 dB	-76 dB	-76 dB	-76 dB
	12.5 kHz channel	-67 dB	-70 dB	-67 dB	-67 dB
Intermodulation		-75 dB	-79 dB	-77 dB	-77 dB
Spurious Rejection		-76.6 dB	-80.5 dB	-80.3 dB	-80.3 dB
FM Hum and Noise	25 kHz	-53 dB	-51 dB	-50 dB	-50 dB
	12.5 kHz	-47 dB	-45 dB	-45 dB	-45 dB
Audio Distortion <sup>1</sup>		1.00%	1.00%	1.00%	1.00%

**PRODUCT DATA SHEET**  
APX 2000 PORTABLE RADIO

**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
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

**GPS SPECIFICATIONS**

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

**DIMENSIONS OF THE RADIOS WITHOUT BATTERY**

	Inches	Millimetres
Length	5.42	137.7
Width Push-To-Talk button	2.42	61.4
Depth Push-To-Talk button	1.41	35.75
Width Top	2.62	66.55
Depth Top	1.84	46.7
Weight of the radios without battery	10.05 oz	285 g

**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
Submersion	MIL-STD 512-X

**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
Synchronisation	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

**RUGGED OPTION SPECIFICATIONS**

Hazardous Location Certification	Division 1- Class I, Groups C,D, Class II groups E, F, G Class III Div 2, Class I A, B,C,D
Leakage (immersion)	MIL-STD-810 C,D,E,F and G Method 512.X Procedure I

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

<sup>3</sup> Measured conductively in analogue 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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