APX 8000XE

ALL-BAND P25 PORTABLE RADIO

Unlimited Mobility. Extreme Performance.

Working together with firefighters around the world, we designed the APX™ Extreme Series, a safe, and easy and efficient to use portfolio of ergonomically advanced, ultra-rugged radios and accessories. With over eighty years of experience in ergonomics, design and technology for public safety, the APX XE Series is the culmination of cross-disciplines and user input.

Firefighters said they wanted equivalent extreme features as the APX Extreme Series including a larger display, exaggerated control knobs, and the capability to communicate with surrounding municipalities within an all-band radio solution. The APX 8000XE brings together not only these requirements, but also the integration of WiFi® for programming flexibility.

The APX 8000XE delivers an ultra-durable radio that combines unlimited interoperability, loud audio, secure WiFi connectivity and built to be an excellent mission-critical solution designed for safety personnel in extreme environments.

MOTOROLA SOLUTIONS

UNLIMITED MOBILITY

With a 4-in-1 radio, you now have the ability to stay connected and expand voice and data communications across multiple agencies with one device. Improve response time by instantly operating on digital or analog networks, in 7/800, VHF, UHF Range 1 and 2 bands at any given time.

HEAR AND BE HEARD

The APX 8000XE is equipped with a 3-Watt speaker, 3 integrated microphones and Adaptive Audio Engine. This changes the level of noise suppression, microphone gain, windporting and speaker equalization to produce clear and loud audio in any environment.

VOICE AND DATA, ALL AT ONCE

Update your radio fleet with Integrated WiFi. This dramatically improves the speed of configuring new codeplugs, firmware and software features over-the-air with Radio Management without interrupting voice communications. Agencies can provision up to 20 secured WiFi networks so their personnel can easily access updates at the facility or in the field.

DESIGNED FOR THE MISSION

The ergonomic design of the APX 8000XE is a well-thought out solution. Whether you're putting out fires, defending your country's coastline or working in other extreme conditions that require heavy gloves, the exaggerated control knobs are easy to grip and locate in even the most stressful moments. From display size to button positioning, this radio is easy to access and operate.

GREATER MOBILITY

APX Personnel Accountability allows Incident Commanders to quickly and accurately account for first responders through radio roll call and an interactive GUI. Real-time accountability allows incident commanders to focus on maintaining control of a chaotic fireground.

With BT standard on all APX XE radios, we are able to partner with SCBA industry leaders to provide clear in-mask communications so you can hear and be heard. Collaborations with both MSA and Scott Safety allow us to deliver clear voice and data communications.

Water Resistant Speaker

Large yet Protected Emergency Button

Top Display

Large Channel Knob

Large Volume Knob

Textured PTT Button

Tactile Keypad

High-Impact Green Housing

Features

OPERATION MODES

- Digital Trunking: 9600 Baud APCO P25 Phase 1 FDMA and Phase 2 TDMA
- Analog Trunking: 3600 Baud SmartNet®, SmartZone®, Omnilink
- Digital Conventional: APCO 25, Conventional, Analog MDC 1200, Quick Call II System Configurations
- Narrow and wide bandwidth digital receiver (6.25 kHz equivalent/25/20/12.5 KHz)

STANDARD FEATURES

- Mission Critical Wireless Bluetooth*
- ASTRO 25 Integrated Voice & Data
- Integrated GPS/GLONASS for outdoor location tracking
- Software Key
- Text-Messaging
- Voice Announcements
- ISSI 8000 Roaming
- Radio Profiles, Dynamic Zone
- Intelligent Lighting
- Single-key ADP Encryption
- IP68 submersion (2 meters, 4 hours)
- IMPRES Battery
- ANSI/ISA-12.12.01-2015 CAN/CSA C22.2 NO. 213-15, Nonincendive Electrical Equipment for Use in Class I, Division 2, Groups A, B, C, D; Class II, Division 2, Groups F, G; Class III, Division 2

PROGRAMMING

- Windows Customer Programming Software (CPS)
- Radio Management (RM)

* Compatible with BT 4.0, BT 2.1, HSP, PAN, DUN, and SPP Profiles found in off-the-shelf BT accessories

OPTIONAL FEATURES

- WiFi 802.11 b/g/n
- SmartConnect via WiFi
- RFID Volume Knob
- Multikey for 128 keys and multi-algorithm
- Programming Over Project 25 (OTAP)
- Over the Air Rekey (OTAR)
- Digital Tone Signaling
- P25 Authentication
- Man Down / Fall Alert Sensor

ADAPTIVE AUDIO ENGINE

- 3 Watt Speaker with Adaptive Equalization
- Adaptive Dual-sided Operation
- Adaptive Noise Suppression Intensity
- Adaptive Gain Control
- Adaptive Windporting

DIMENSIONS OF THE RADIOS WITHOUT BATTERY

	INCHES	MILLIMETERS
Length	6.15	156.2
Width Push-To-Talk button	2.39	60.7
Depth Push-To-Talk button	1.40	35.5
Width Top	3.32	84.3
Depth Top	2.13	54.1
Depth Bottom of Battery	1.24	31.5
Weight of the radios without battery	13.9 oz	394.1 g

RADIO MODELS

	MODEL 1.5	MODEL 2.5	MODEL 3.5
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	Backlit keypad 3 soft keys 4 direction navigation key Home and Data buttons	Backlit keypad 3 soft keys 4 direction navigation key 4x3 keypad Home and Data buttons
Channel Capacity	1200	3000	3000
FLASHport Memory	2 GB	2 GB	2 GB
700/800 MHz (764-870 MHz)	H91TGD9PW5AN	H91TGD9PW6AN	H91TGD9PW7AN
VHF (136-174 MHz)			
UHF Range 1 (380-470 MHz)			
UHF Range 2 (450-520 MHz)			
Buttons & Switches	Large PTT button • Angled On/Off volume control • X-large orange emergency button • 16 position top-mounted rotary switch 2-position concentric switch • Glove accessible 3-position switch • 3 programmable side buttons		

*** In accordance with FCC mandate, the APX 8000XE all band radio is restricted to 12.5kHz operation only and does NOT support 25kHz in the VHF and UHF Bands (excluding T-Band). This applies to customers under Rule Part 90.

TRANSMITTER - TYPICAL PERFORMANCE SPECIFICATIONS

		700/800	VHF	UHF RANGE 1	UHF RANGE 2
Frequency Range/Bandsplits		764-776, 794-806 MHz 806-825, 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[1]		700 MHz: 1-2.5 Watts 800 MHz: 1-3 Watts	1-6 Watts	1-5 Watts	1-5 Watts
Frequency Stability[1] (–30°C to +60°C; +25°C Ref.)		+/- 1.0 ppm	+/- 1.0 ppm	+/- 1.0 ppm	+/- 1.0 ppm
Modulation Limiting[1]		±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)[1]		-75 dBc	-75 dBc	-75 dBc	-75 dBc
Audio Response[1]		+1, -3 dB	+1, -3 dB	+1, -3 dB	+1, -3 dB
FM Hum & Noise (25kHz / 12.5kHz)[1]	700 MHz 800 MHz	-49 dB / -47 dB -49 dB / -46 dB	-51 dB / -51 dB	-51 dB / -51 dB	-51 dB / -47 dB
Audio Distortion (25kHz / 12.5kHz)[1]	700 MHz 800 MHz	0.90 % / 0.90 % 0.60 % / 0.90 %	0.50 % / 0.90 %	0.50 % / 0.90 %	0.60 % / 0.90 %

RECEIVER - TYPICAL PERFORMANCE SPECIFICATIONS

		700	800	VHF	UHF
Frequency Range/Bandsplits		764-776 MHz	851-870 MHz	136-174 MHz	380-520 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
Speech Loudness at 30cm		105 Phons	105 Phons	105 Phons	105 Phons
Audio Output Power at Rated/Max		3 Watt/5 Watt	3 Watt/5 Watt	3 Watt/5 Watt	3 Watt/5 Watt
Frequency Stability[1] (–30°C to +60°C; +25°C Ref.)		+/- 1.0 ppm	+/- 1.0 ppm	+/- 1.0 ppm	+/- 1.0 ppm
Analog Sensitivity[1] Digital Sensitivity[2]	12 dB SINAD 1% BER 5% BER 5% BER Faded	0.224 uV 0.316 uV 0.211 uV 0.562uV	0.224 uV 0.316 uV 0.211 uV 0.562 uV	0.168 uV 0.251 uV 0.149 uV 0.562 uV	0.199 uV 0.282 uV 0.158 uV 0.530 uV
Selectivity (25 kHz / 12.5 kHz)[1, 5]		79 dB / 72 dB	78 dB / 72 dB	82 dB / 77 dB	80 dB / 74 dB
Intermodulation Rejection[1]		81 dB	80 dB	82 dB	80 dB
Spurious Rejection[1]		98 dB	98 dB	92 dB	98 dB
FM Hum and Noise (25 kHz / 12.5 kHz)[1]		-55 dB / -53 dB	-54 dB / -52 dB	-57 dB / -55 dB	-56 dB / -54 dB
Audio Distortion at Rated		1.2%	1.3%	1.3%	1.2%

BATTERIES

BATTERY CAPACITY / TYPE	DIMENSIONS (H X W X D)	WEIGHT	BATTERY PART NUMBER	BATTERY CAPACITY
Li-Ion IMPRES UL2054 DIV 2 Rugged 3400 mAh IP68**	3.4" x 2.3" x 1.7"	6.5 oz	PMNN4504	3400 mAh
Li-Ion IMPRES UL2054 DIV 2 Rugged 4850 mAh IP68	5" x 2.3" x 1.7"	10 oz	PMNN4505	4850 mAh

ENCRYPTION

Supported Encryption Algorithms	ADP, 256-bit AES, DES, DES-XL, DES-OFB, DVP-XL, Localized Algorithm
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 360 mSec
Encryption Keying	Key Loader and Over the Air Rekeying (OTAR)
Synchronization	XL – Counter Addressing OFB – Output Feedback
Vector Generator	National Institute of Standards and Technology (NIST) approved random number generator
Encryption Type	Digital and SecureNet
Key Storage	Tamper protected volatile or non-volatile memory
Key Erasure	Keyboard command and tamper detection
Standards	FIPS 140-3 Level 3 FIPS 197

GPS/GNSS SPECIFICATIONS

Constellations	GPS & GLONASS
Tracking Sensitivity	–164 dBm
Accuracy[3]	<5 meters (95%)
Cold Start[3]	<60 seconds (95%)
Hot Start[3]	<5 seconds (95%)
Mode of Operation	Autonomous (Non-Assisted)

REGULATORY INFORMATION

FCC ID	AZ489FT7061
Industry Canada	109U-89FT7061
Emission Designators	LMR: 8K10F1D, 8K10F1E, 8K10F1W, 11K0F3E, 16K0F3E***, 20K0F1E*** Bluetooth®: 852KF1D, 1M17F1D, 1M19F1D, 1M04F1D WLAN (WiFi): 13M7G1D, 17M0D1D, 18M1D1D

RUGGED SPECIFICATIONS

Leakage (submersion)	MIL-STD-810 C, D, E, F, and G Method 512.X Procedure I, IP68 (2 meters, 4 hours)

WIRELESS CONNECTIVITY & SECURITY

Frequency Range/Bandsplits: Bluetooth: 2402 - 2480 MHz, WLAN (WiFi): 2400 - 2483.5 MHz
WLAN (WiFi) 802.11 b/g/n supports WPA-2, WPA, WEP security protocols; radio can be pre-provisioned with up to 20 SSIDs[6]
Mission Critical Wireless Bluetooth 2.1 uses 96 bit encryption for pairing & 128 bit encryption for voice, signaling and data. The radio BT supports up to 6 data connections and 1 audio connection
Bluetooth 4.0 Low Energy uses 128-bit AES-CCM encryption

HOUSING COLOR

Black (Standard), Public Safety Yellow, and High Impact Green

ENVIRONMENTAL

Operating Temperature[4]	-30 to +60 °C (-22 to +140 °F)
Storage Temperature[4]	-50 to +85 °C (-40 to +185 °F)
Humidity	Per MIL-STD 810
ESD	IEC 61000-4-2
Water and Dust Resistance	IP68 (2 meters, 4 hours)

KEY AUDIO ACCESSORIES

NAME	TYPE	PART NUMBER	FEATURES
IMPRES XE5000 RSM BLACK	Wired	PMMN4106ABLK	Adaptive Audio Engine, Audio Jack, Strobe light, Volume Control, Channel Knob, Orange Button, IP68
IMPRES XE5000 RSM GREEN	Wired	PMMN4106	Adaptive Audio Engine, Audio Jack, Strobe light, Volume Control, Channel Knob, Orange Button, IP68

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/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	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
Explosive Atmosphere	-	-	-	-	-	-	511.4	I	511.5, 511.6	I
Blowing Sand	1 Proc	1 Proc	510.2	II	510.3	II	510.4	II	510.5	II
Submersion	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

[1] Measured conductively in analog mode per TIA / EIA 603 under nominal conditions.
[2] Measured conductively in digital mode per TIA / EIA IS 102.CAAA under nominal conditions.
[3] Measured conductively with >6 satellites visible at a nominal –130 dBm signal strength. Specs provided are 95th percentile values.
[4] Temperatures listed are for radio specifications. Battery storage is recommended at 25°C, ±5°C to ensure best performance.
[5] Measured using the TIA-603 single-tone method.
[6] 2400 - 2483.5 MHz for EMEA region and includes guardband. Channels 1 - 11 used for FCC/IC region.
Specifications subject to change without notice.

All specifications shown are typical.
Radio meets applicable regulatory requirements.

For more information, contact:

ERS WIRELESS

info@erswireless.com
800-475-3320

MOTOROLA SOLUTIONS

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