APX™ 8000HXE

ALL-BAND P25 HAZLOC PORTABLE RADIO

360 DEGREES OF SAFETY.

AS FIREFIGHTERS, YOU ROUTINELY PUT YOURSELVES IN HARM'S WAY. YOU SHOULDN'T NEED TO WORRY THAT THE EQUIPMENT YOU CARRY IS UP TO THE TASK.

As our flagship radio for fire and rescue, the APX 8000HXE is designed for the most hazardous conditions. Because the APX 8000HXE is certified to Div 1 HazLoc standards, you can be confident entering areas where unknown chemicals and gases add to an already dangerous situation.

Breaking communication barriers, all-band technology connects you with other agencies and departments, no matter which frequency they're on. And when you need to relay a message in a cacophony of alarms and sirens, the Adaptive Audio Engine dynamically adjusts the radio's audio response for optimal intelligibility, every time.

We collaborated closely with fire and rescue workers to develop the APX 8000HXE, and that's why it's ready for anything - submersion in deep water, impacts that would destroy a typical radio. With exaggerated controls for gloved-hand use, a pressure-tested tempered glass display and a shock-absorbing aluminum alloy endoskeleton, the APX 8000HXE delivers instant communication with total reliability.

And to keep your radios fully operational and available for end-users, our flexible managed and support services are centrally delivered with the right combination of people, processes and tools.

Because every second matters when you're saving lives.

RESPOND WITH CONFIDENCE
Certified to Div1 HazLoc standards, the APX 8000HXE is safe to use in areas where there are high concentrations of flammable gas, vapor, liquid, or dust.

SOUND MATTERS
Make sure you can hear — and be heard. The APX 8000HXE adaptive audio engine gives you the loudest, most intelligible audio in any environment, even at maximum volume.

PURPOSE-BUILT. MISSION-READY.
Communicate instantly when lives are on the line. With an intuitive design and exaggerated controls, the APX 8000HXE is purpose-built for fire and rescue workers.

ALL BANDS, NO BOUNDARIES
The APX 8000HXE transmits and receives on all commonly used frequencies, so your fire and rescue workers can communicate with different agencies using the same radio.

CONQUER CHAOS
With a water-tight seal, drop-resistant dual battery latch, pressure-tested tempered glass display and a shock-absorbing aluminum alloy endoskeleton, the APX 8000HXE is built to survive everything from falls to floods.

ALL THE SUPPORT YOU NEED
Motorola Solutions offers three levels of service plans — Premier, Advanced, and Essential — so you can manage in the way that suits you best.

T-Grip shape for secure carry

Ergonomic emergency button

Multi-microphone noise cancellation

Full color front display

Accessory connector with water / dust seal

Available with display and keypad options

Recess for custom labeling

HazLoc battery

Standard XE all-band antenna

Top display for on-belt status updates

Angled volume knob for ease of access

Waterproof speaker with 5 W of audio power

Enlarged PTT button for gloved users

3x side programmable buttons

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
- Analog Trunking: MDC 1200, Quik-Call II
- ASTRO 25 Integrated Voice & Data (optional)

MODELS AVAILABLE

- All-band: VHF, UHF (ranges 1 and 2), 700 and 800 MHz, Model 1.5, 2.5, and 3.5

CONNECTIVITY

- Mission-Critical Bluetooth (version 4.0)
- Wi-Fi (802.11b/g/n)[1]
- Data Modem Collaboration over Wi-Fi[1]

AUDIO FEATURES

- 3 W Speaker with Adaptive Equalization
- Adaptive Dual-sided Operation
- Adaptive Noise Suppression Intensity
- Adaptive Gain Control
- Adaptive Windporting
- Compatible with IMPRES 2 Audio Accessories[2]

MANAGEMENT

- Customer Programming Software (CPS), version R12.00.00 or later
- Radio Management
- Over-the-air Programming (OTAP)[1]

SAFETY

- Location-Tracking (GPS and GLONASS)
- Mission-critical Geofence[1]
- Man Down[1]

HAZLOC (UL/CSA)

Class I, Div 1, Groups C*, D;
Class I, Div 2, Groups A, B, C, D;
Class II, Div 1, Group E, F, G; Class III; T3C.[3]

* Groups C only applies to UL.

SECURITY

- Single-key ADP Encryption
- Software Key
- P25 Authentication[1]
- Multikey for 128 keys and multi-algorithm[1]
- Over-the-air Rekeying (OTAR)[1]

INGRESS PROTECTION

- MIL-STD Delta-T, IP68 submersion (2 m, 4 hr) (Standard)

OTHER FEATURES

- Text Messaging
- Voice Announcements
- Radio Profiles
- Dynamic Zone
- Intelligent Lighting
- IMPRES 2 Battery
- RFID Volume Knob[1]
- Digital Tone Signaling[1]
- Instant Recall
- Intelligent Priority Scan

DIMENSIONS

Radio without battery	
Height (radio body)	6.7 in (169.7 mm)
Width	3.3 in (84 mm)
Depth	2.2 in (56 mm)
Weight (Model 3.5 & 2.5)	15.9 oz (450 g)
Weight (Model 1.5)	16.3 oz (462 g)
Radio with standard battery	
Height (radio body)	6.9 in (176.5 mm)
Width	3.3 in (84 mm)
Depth	2.2 in (56 mm)
Weight (Model 3.5 & 2.5)	22.9 oz (650 g)
Weight (Model 1.5)	23.4 oz (662 g)

Weight with standard battery
22.7 oz (643 g)

[1] Optional.
[2] Review accessory catalog and UL manual for more details.
[3] Review UL manual for more details.

RADIO MODELS

	MODEL 3.5	MODEL 2.5	MODEL 1.5
Display	Full bitmap color LCD front display • 2 lines of status icons • 4 lines of text x 14 characters • 1 line of menu x 3 keys • White backlight	Full bitmap color LCD front display • 2 lines of status icons • 4 lines of text x 14 characters • 1 line of menu x 3 keys • White backlight	N/A
	Full bitmap mono LCD top display • 1 line of text x 8 characters • 1 line of status icons • Multi-color backlight	Full bitmap mono LCD top display • 1 line of text x 8 characters • 1 line of status icons • Multi-color backlight	Full bitmap mono LCD top display • 1 line of text x 8 characters • 1 line of status icons • Multi-color backlight
Keypad	4x3 keypad	-	N/A
	3 soft keys	3 soft keys	
	4-way navigation pad	4-way navigation pad	
	Home key	Home key	
	Data key	Data key	
Channel Capacity	3000	3000	3000
FLASHport Memory	2 GB	2 GB	2 GB
Part Number	H91TGD9PW9AN	H91TGD9PW8AN	H91TGD9PW4AN
Buttons and Switches	Non-slip PTT button	Non-slip PTT button	Non-slip PTT button
	Emergency button (orange)	Emergency button (orange)	Emergency button (orange)
	Power / volume knob (angled)	Power / volume knob (angled)	Power / volume knob (angled)
	Rotary selector, 16-position	Rotary selector, 16-position	Rotary selector, 16-position
	Concentric switch, 2-position	Concentric switch, 2-position	Concentric switch, 2-position
	A/B/C switch, 3-position	A/B/C switch, 3-position	A/B/C switch, 3-position
	3 programmable side buttons	3 programmable side buttons	3 programmable side buttons

TRANSMITTER

	VHF	UHF 1	UHF 2	700MHz	800MHz
Frequency Range / Bandsplits	136-174 MHz	380-470 MHz	450-520 MHz	792-806 MHz	806-825, 851-870 MHz
Channel Spacing[1]	12.5 / 20 / 25 kHz	12.5 / 20 / 25 kHz	12.5 / 20 / 25 kHz	12.5 / 20 / 25 kHz	12.5 / 20 / 25 kHz
Maximum Frequency Separation	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
Rated RF Output Power (Adjustable)[2]	1-6 W	1-5 W	1-5 W	1-2.5 W	1-3 W
Frequency Stability (-30 °C to +60 °C; +25 °C Ref.)[2]	±1.0 ppm	±1.0 ppm	± 1.0 ppm	± 1.0 ppm	± 1.0 ppm
Modulation Limiting (12.5 / 20 / 25 kHz channel)[2]	±2.5 / ±4 / ±5 kHz	±2.5 / ±4 / ±5 kHz	±2.5 / ±4 / ±5 kHz	±2.5 / ±4 / ±5 kHz	±2.5 / ±4 / ±5 kHz
Emissions (conducted and radiated)[2]	-75 dBc	-75 dBc	-75 dBc	-75 dBc	-75 dBc
Audio Response[2]	+1, -3 dB	+1, -3 dB	+1, -3 dB	+1, -3 dB	+1, -3 dB
FM Hum and Noise (12.5 / 25 kHz channel)[2]	-51 / -51 dB	-51 / -51 dB	-47 / -51 dB	-47 / -49 dB	-46 / -49 dB
Audio Distortion (12.5 / 25 kHz channel)[2]	0.50% / 0.90%	0.50% / 0.90%	0.60% / 0.90%	0.90% / 0.90%	0.90% / 0.60%

RECEIVER

	VHF	UHF 1	UHF 2	700MHz	800MHz
Frequency Range / Bandsplits	136-174 MHz	380-470 MHz	450-520 MHz	762-776MHz	851-870 MHz
Channel Spacing[1]	12.5 / 20 / 25 kHz	12.5 / 20 / 25 kHz	12.5 / 20 / 25 kHz	12.5 / 20 / 25 kHz	12.5 / 20 / 25 kHz
Maximum Frequency Separation	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
Audio Output at Rated[2]	3 W	3 W	3 W	3 W	3 W
Audio Output at Max[2]	5 W	5 W	5 W	5 W	5 W
Frequency Stability (-30 °C to +60 °C; +25 °C Ref.)[2]	±1.0 ppm	±1.0 ppm	±1.0 ppm	±1.0 ppm	±1.0 ppm
Analog Sensitivity (12 dB SINAD) Standard[2]	0.168 µV (-122.5 dBm)	0.199 µV (-121.0 dBm)	0.199 µV (-121.0 dBm)	0.224 µV (-120.0 dBm)	0.224 µV (-120.0 dBm)
Digital Sensitivity (1% BER)[3]	0.251 µV (-119.0 dBm)	0.282 µV (-118.0 dBm)	0.282 µV (-118.0 dBm)	0.316 µV (-117.0 dBm)	0.316 µV (-117.0 dBm)
Digital Sensitivity (5% BER)[3]	0.149 µV (-123.5 dBm)	0.158 µV (-123.0 dBm)	0.158 µV (-123.0 dBm)	0.211 µV (-120.5 dBm)	0.211 µV (-120.5 dBm)
Selectivity (12.5 / 25 kHz channel)[2]	-77 / -82 dB	-74 / -80 dB	-74 / -80 dB	-72 / -79 dB	-72 / -78 dB
Intermodulation (12.5 / 25 kHz channel) Standard[2]	-82 dB	-80 dB	-80 dB	-81 dB	-80 dB
Spurious Rejection[2]	-92 dB	-98 dB	-98 dB	-98 dB	-98 dB
FM Hum and Noise (12.5 / 25 kHz channel)[2]	-55 / -57 dB	-54 / -56 dB	-54 / -56 dB	-53 / -55 dB	-52 / -54 dB
Audio Distortion[2]	0.90%	0.90%	0.90%	0.90%	0.90%

BATTERIES

Part No	Type	Capacity	HazLoc	Dimensions	Weight	Availability
PMNN4547	Li-Ion IMPRES 2	3100 mAh	Y	3.4 x 2.3 x 1.8 in (86 x 59 x 45 mm)	7.1 oz (201 g)	Standard

[1] Please refer to local regulations for available channel bandwidths.
[2] Measured conductively in analog mode per TIA / EIA 603 under nominal conditions.
[3] Measured conductively in digital mode per TIA / EIA IS 102.

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	1024 keys Programmable for 128 Common Key References (CKR) or 16 Physical Identifiers (PID)
Encryption Frame Re-sync Interval	360 ms (P25 CAI)
Encryption Keying	Local 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 140-2 Level 3 FIPS 197

GPS	
Constellations	GPS and GLONASS
Tracking Sensitivity	-164 dBm
Accuracy[1]	<5 meters (95%)
Cold Start[1]	<60 seconds (95%)
Hot Start[1]	<5 seconds (95%)
Mode of Operation	Autonomous (Non-Assisted)

WIRELESS
Bluetooth®
Frequency Range: 2402 - 2480 MHz
Mission Critical Wireless Bluetooth 2.1 uses 96 bit encryption for pairing and 128 bit encryption for voice, signaling and data. The radio supports up to 6 data connections and 1 audio connection
Bluetooth Low Energy uses 128-bit AES-CCM encryption
WLAN
Wi-Fi® 802.11 b/g/n
Frequency Range: 2400 - 2483.5 MHz
Supports WPA-2, WPA, WEP security protocols
Radio can be pre-provisioned with up to 20 SSIDs

AUDIO	
Audio Output at Rated	3 W
Audio Output at Max	5 W
Audio Response (EIA)	+1, -3 dB
Speech Loudness at 12 in (300 mm)	105 phon
Audio Features	Adaptive Equalization Adaptive Dual-sided Operation Adaptive Noise Suppression Intensity Adaptive Gain Control Adaptive Windporting IMPRES 2 Audio

HOUSING COLOR	
Housing Color	High Impact Green only

[1] Measured conductively with >6 satellites visible at a nominal -130 dBm signal strength. Specs provided are 95th percentile values.

REGULATORY INFORMATION		
FCC ID	All-Band	FCC ID: AZ489FT7111
IC ID	All-Band	IC ID: 109U-89FT7111
Emission Designators	LMR	8K10F1D, 8K10F1E, 8K10F1W, 11K0F3E, 16K0F3E, 20K0F1E
	Bluetooth	852KF1D, 1M17F1D, 1M19F1D
	WLAN (Wi-Fi)	13M7G1D, 17M0D1D, 18M1D1D

ENVIRONMENTAL	
Operating Temperature[3]	-30 to +60 ºC (-22 to +140 ºF)
Storage Temperature[1]	-40 to +85 ºC (-40 to +185 ºF)
Humidity	Per MIL-STD 810
ESD	IEC 801 - 2 kV
Dust Resistance	IP6X
Water Resistance	MIL-STD (Delta-T) and IPX8 (2 meters, 4 hours)
Leakage (Immersion)	MIL-STD-810 C, D, E, F and G

MIL-STD

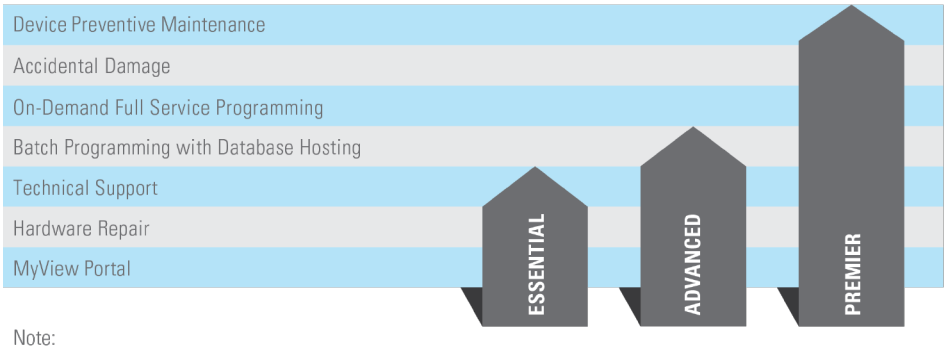
	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F		MIL-STD 810G	
	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	II	500.5	II
High Temperature	501.1	I,II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Hot	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/A1/C3	503.3	I/A1/C3	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	-	-	511.2	I	511.3	I	511.4	I	511.5/6	I
Blowing Sand	1 Proc	1 Proc	510.2	II	510.3	II	510.4	II	510.5	II
Submersion[2]	512.1	I	512.2	I	512.3	I	512.4	I	512.5	I
Submersion (Salt Water)[2]	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, III/3	514.5	I/24, II/5	514.6	I/24, II/5
Shock	516.2	I, V	516.3	I, VI	516.4	I, VI	516.5	I, VI	516.6	I, VI
Shock (Drop)	516.2	II	516.2	IV	516.4	IV	516.5	IV	516.6	IV

[1] Radio only. To ensure best performance, batteries should be stored at 25 °C, ±5 °C .
[2] Submersion tests conducted using more stringent, preheated (Delta-T) method..
[3] HazLoc certification requires an operating temperature of -20C to +60C.

DEVICE SERVICES

Achieve mission critical performance with managed and support services

SERVICES AT - A - GLANCE



Note:
- Device management training and on-site setup can be offered as add-on services with Advanced package.
- Accidental damage can be offered as an add-on service with Essential and Advanced packages.

ESSENTIAL

Support When You Need It

Access technical support to troubleshoot issues and hardware repair to promptly restore device performance.

ADVANCED

Improve Response and Continuity

From routine maintenance to device programming, our services ensure radio fleet availability.

PREMIER

Maximize Performance and Reduce Risk

We take full accountability of day-to-day device management, so that you can focus on your mission.

For more information, please visit: **www.motorolasolutions.com/apx**

MOTOROLA SOLUTIONS

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