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 clarity, 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.

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, clearest audio at any volume, in any environment.

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.

DATA SHEET | APX 8000HXE
**FEATURES**

**OPERATION MODES**
- Digital Trunking: 9600 Baud APCO P25 Phase 1 FDMA and Phase 2 TDMA
- Analog Trunking: 3000 Baud SmartNet®, SmartZone®, Omniradio
- Digital Conventional: APCO 25
- Analog Trunking: MDC 1200, Quik-Call II
- ASTRO 25 Integrated Voice & Data (optional)

**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 Authentication1
- Multikey for 128 keys and multi-algorithm1
- 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 Knob1
- Digital Tone Signaling1
- 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: 15.6 oz (442 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: 22.7 oz (643 g)

**CONNECTIVITY**
- Mission-Critical Bluetooth (version 4.0)
- Wi-Fi (802.11b/g/n)1
- Data Modem Collaboration over Wi-Fi1

**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 Accessories2

**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 Geofence1
- Man Down1

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

---

* Optional.
1 Optional.
2 Review accessory catalog and UL manual for more details.
3 Review UL manual for more details.
## Radio Models

<table>
<thead>
<tr>
<th></th>
<th>Model 3.5</th>
<th>Model 2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Display</strong></td>
<td>Full bitmap color LCD front display</td>
<td>Full bitmap color LCD front display</td>
</tr>
<tr>
<td></td>
<td>• 2 lines of status icons</td>
<td>• 2 lines of status icons</td>
</tr>
<tr>
<td></td>
<td>• 4 lines of text x 14 characters</td>
<td>• 4 lines of text x 14 characters</td>
</tr>
<tr>
<td></td>
<td>• 1 line of menu x 3 keys</td>
<td>• 1 line of menu x 3 keys</td>
</tr>
<tr>
<td></td>
<td>• White backlight</td>
<td>• White backlight</td>
</tr>
<tr>
<td></td>
<td>Full bitmap mono LCD top display</td>
<td>Full bitmap mono LCD top display</td>
</tr>
<tr>
<td></td>
<td>• 1 line of text x 8 characters</td>
<td>• 1 line of text x 8 characters</td>
</tr>
<tr>
<td></td>
<td>• 1 line of status icons</td>
<td>• 1 line of status icons</td>
</tr>
<tr>
<td></td>
<td>• Multi-color backlight</td>
<td>• Multi-color backlight</td>
</tr>
<tr>
<td><strong>Keypad</strong></td>
<td>4x3 keypad</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>3 soft keys</td>
<td>3 soft keys</td>
</tr>
<tr>
<td></td>
<td>4-way navigation pad</td>
<td>4-way navigation pad</td>
</tr>
<tr>
<td></td>
<td>Home key</td>
<td>Home key</td>
</tr>
<tr>
<td></td>
<td>Data key</td>
<td>Data key</td>
</tr>
<tr>
<td><strong>Channel Capacity</strong></td>
<td>3000</td>
<td>3000</td>
</tr>
<tr>
<td><strong>FLASHport Memory</strong></td>
<td>2 GB</td>
<td>2 GB</td>
</tr>
<tr>
<td><strong>Part Number</strong></td>
<td>H91TG9PWBAN</td>
<td>H91TG9PW8AN</td>
</tr>
<tr>
<td><strong>Buttons and Switches</strong></td>
<td>Non-slip PTT button</td>
<td>Non-slip PTT button</td>
</tr>
<tr>
<td></td>
<td>Emergency button (orange)</td>
<td>Emergency button (orange)</td>
</tr>
<tr>
<td></td>
<td>Power / volume knob (angled)</td>
<td>Power / volume knob (angled)</td>
</tr>
<tr>
<td></td>
<td>Rotary selector, 16-position</td>
<td>Rotary selector, 16-position</td>
</tr>
<tr>
<td></td>
<td>Concentric switch, 2-position</td>
<td>Concentric switch, 2-position</td>
</tr>
<tr>
<td></td>
<td>A/B/C switch, 3-position</td>
<td>A/B/C switch, 3-position</td>
</tr>
<tr>
<td></td>
<td>3 programmable side buttons</td>
<td>3 programmable side buttons</td>
</tr>
</tbody>
</table>
## TRANSMITTER

<table>
<thead>
<tr>
<th></th>
<th>VHF</th>
<th>UHF 1</th>
<th>UHF 2</th>
<th>700MHz</th>
<th>800MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range / Bandsplits</td>
<td>136-174 MHz</td>
<td>380-470 MHz</td>
<td>450-520 MHz</td>
<td>792-706 MHz</td>
<td>806-825 MHz / 851-870 MHz</td>
</tr>
<tr>
<td>Channel Spacing(^1)</td>
<td>12.5 / 20 / 25 kHz</td>
<td>12.5 / 20 / 25 kHz</td>
<td>12.5 / 20 / 25 kHz</td>
<td>12.5 / 20 / 25 kHz</td>
<td>12.5 / 20 / 25 kHz</td>
</tr>
<tr>
<td>Maximum Frequency Separation</td>
<td>Full Bandsplit</td>
<td>Full Bandsplit</td>
<td>Full Bandsplit</td>
<td>Full Bandsplit</td>
<td>Full Bandsplit</td>
</tr>
<tr>
<td>Rated RF Output Power (Adjustable)(^2)</td>
<td>1-6 W</td>
<td>1-5 W</td>
<td>1-5 W</td>
<td>1-2.5 W</td>
<td>1-3 W</td>
</tr>
<tr>
<td>Frequency Stability (-30 °C to +60 °C; +25 °C Ref.)</td>
<td>±1.0 ppm</td>
<td>±1.0 ppm</td>
<td>±1.0 ppm</td>
<td>±1.0 ppm</td>
<td>±1.0 ppm</td>
</tr>
<tr>
<td>Modulation Limiting (12.5 / 20 / 25 kHz channel)(^3)</td>
<td>±2.5 / ±4 / ±5 kHz</td>
<td>±2.5 / ±4 / ±5 kHz</td>
<td>±2.5 / ±4 / ±5 kHz</td>
<td>±2.5 / ±4 / ±5 kHz</td>
<td>±2.5 / ±4 / ±5 kHz</td>
</tr>
<tr>
<td>Emissions (conducted and radiated)(^2)</td>
<td>-75 dBc</td>
<td>-75 dBc</td>
<td>-75 dBc</td>
<td>-75 dBc</td>
<td>-75 dBc</td>
</tr>
<tr>
<td>Audio Response(^2)</td>
<td>±1 - 3 dB</td>
<td>±1 - 3 dB</td>
<td>±1 - 3 dB</td>
<td>±1 - 3 dB</td>
<td>±1 - 3 dB</td>
</tr>
<tr>
<td>Audio Distortion (12.5 / 25 kHz channel)(^2)</td>
<td>0.50% / 0.90%</td>
<td>0.50% / 0.90%</td>
<td>0.60% / 0.90%</td>
<td>0.90% / 0.90%</td>
<td>0.90% / 0.60%</td>
</tr>
</tbody>
</table>

## RECEIVER

<table>
<thead>
<tr>
<th></th>
<th>VHF</th>
<th>UHF 1</th>
<th>UHF 2</th>
<th>700MHz</th>
<th>800MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range / Bandsplits</td>
<td>136-174 MHz</td>
<td>380-470 MHz</td>
<td>450-520 MHz</td>
<td>762-776 MHz</td>
<td>851-870 MHz</td>
</tr>
<tr>
<td>Channel Spacing(^1)</td>
<td>12.5 / 20 / 25 kHz</td>
<td>12.5 / 20 / 25 kHz</td>
<td>12.5 / 20 / 25 kHz</td>
<td>12.5 / 20 / 25 kHz</td>
<td>12.5 / 20 / 25 kHz</td>
</tr>
<tr>
<td>Maximum Frequency Separation</td>
<td>Full Bandsplit</td>
<td>Full Bandsplit</td>
<td>Full Bandsplit</td>
<td>Full Bandsplit</td>
<td>Full Bandsplit</td>
</tr>
<tr>
<td>Audio Output at Rated(^2)</td>
<td>3 W</td>
<td>3 W</td>
<td>3 W</td>
<td>3 W</td>
<td>3 W</td>
</tr>
<tr>
<td>Audio Output at Max(^2)</td>
<td>5 W</td>
<td>5 W</td>
<td>5 W</td>
<td>5 W</td>
<td>5 W</td>
</tr>
<tr>
<td>Frequency Stability (-30 °C to +60 °C; +25 °C Ref.)</td>
<td>±1.0 ppm</td>
<td>±1.0 ppm</td>
<td>±1.0 ppm</td>
<td>±1.0 ppm</td>
<td>±1.0 ppm</td>
</tr>
<tr>
<td>Analog Sensitivity (12 dB SINAD) Standard(^3)</td>
<td>0.189 µV (-122.5 dBm)</td>
<td>0.199 µV (-121.0 dBm)</td>
<td>0.199 µV (-121.0 dBm)</td>
<td>0.224 µV (-120.0 dBm)</td>
<td>0.224 µV (-120.0 dBm)</td>
</tr>
<tr>
<td>Digital Sensitivity (1% BER)(^3)</td>
<td>0.251 µV (-119.0 dBm)</td>
<td>0.282 µV (-118.0 dBm)</td>
<td>0.282 µV (-118.0 dBm)</td>
<td>0.316 µV (-117.0 dBm)</td>
<td>0.316 µV (-117.0 dBm)</td>
</tr>
<tr>
<td>Digital Sensitivity (5% BER)(^3)</td>
<td>0.149 µV (-123.0 dBm)</td>
<td>0.158 µV (-123.0 dBm)</td>
<td>0.158 µV (-123.0 dBm)</td>
<td>0.211 µV (-120.5 dBm)</td>
<td>0.211 µV (-120.5 dBm)</td>
</tr>
<tr>
<td>Selectivity (12.5 / 25 kHz channel)(^3)</td>
<td>-77 / -82 dB</td>
<td>-74 / -80 dB</td>
<td>-74 / -80 dB</td>
<td>-72 / -78 dB</td>
<td>-72 / -76 dB</td>
</tr>
<tr>
<td>Intermodulation (12.5 / 25 kHz channel) Standard(^3)</td>
<td>-82 dB</td>
<td>-80 dB</td>
<td>-80 dB</td>
<td>-81 dB</td>
<td>-80 dB</td>
</tr>
<tr>
<td>Spurious Rejection(^3)</td>
<td>-92 dB</td>
<td>-98 dB</td>
<td>-98 dB</td>
<td>-98 dB</td>
<td>-98 dB</td>
</tr>
<tr>
<td>FM Hum and Noise (12.5 / 25 kHz channel)(^3)</td>
<td>-55 / -57 dB</td>
<td>-54 / -56 dB</td>
<td>-54 / -56 dB</td>
<td>-52 / -54 dB</td>
<td>-52 / -54 dB</td>
</tr>
<tr>
<td>Audio Distortion(^2)</td>
<td>0.90%</td>
<td>0.90%</td>
<td>0.90%</td>
<td>0.90%</td>
<td>0.90%</td>
</tr>
</tbody>
</table>

## BATTERIES

<table>
<thead>
<tr>
<th>Part No</th>
<th>Type</th>
<th>Capacity</th>
<th>HazLoc</th>
<th>Dimensions</th>
<th>Weight</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMNN4547</td>
<td>Li-Ion IMPRES 2</td>
<td>3100 mAh</td>
<td>Y</td>
<td>3.4 x 2.3 x 1.8 in (86 x 59 x 45 mm)</td>
<td>7.1 oz (201 g)</td>
<td>Standard</td>
</tr>
</tbody>
</table>

\(^1\) 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

<table>
<thead>
<tr>
<th>Supported Encryption Algorithms</th>
<th>ADP, 256-bit AES, DES, DES-XL, DES-OFB, DVP-XL, Localized Algorithm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encryption Algorithm Capacity</td>
<td>8</td>
</tr>
<tr>
<td>Encryption Keys per Radio</td>
<td>1024 keys Programmable for 128 Common Key References (CKR) or 16 Physical Identifiers (PID)</td>
</tr>
<tr>
<td>Encryption Frame Re-sync Interval</td>
<td>360 ms (P25 CAI)</td>
</tr>
<tr>
<td>Encryption Keying</td>
<td>Local Key Loader and Over the Air Rekeying (OTAR)</td>
</tr>
<tr>
<td>Synchronization</td>
<td>XL – Counter Addressing OFB – Output Feedback</td>
</tr>
<tr>
<td>Vector Generator</td>
<td>National Institute of Standards and Technology (NIST) approved random number generator</td>
</tr>
<tr>
<td>Encryption Type</td>
<td>Digital and SecureNet</td>
</tr>
<tr>
<td>Key Storage</td>
<td>Tamper-protected volatile or non-volatile memory</td>
</tr>
<tr>
<td>Key Erasure</td>
<td>Keyboard command and tamper detection</td>
</tr>
<tr>
<td>Standards</td>
<td>FIPS 140-2 Level 3 FIPS 197</td>
</tr>
</tbody>
</table>

### Wireless

#### Bluetooth

<table>
<thead>
<tr>
<th>Frequency Range</th>
<th>2402 - 2480 MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission Critical</td>
<td>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</td>
</tr>
<tr>
<td>Bluetooth Low Energy</td>
<td>Uses 128-bit AES-CCM encryption</td>
</tr>
<tr>
<td>Specifications</td>
<td>Bluetooth Low Energy uses 128-bit AES-CCM encryption</td>
</tr>
<tr>
<td>WPA-WPA2</td>
<td>Supports WPA-2, WPA, WEP security protocols</td>
</tr>
<tr>
<td>WPA-WPA2</td>
<td>Radio can be pre-provisioned with up to 20 SSIDs</td>
</tr>
</tbody>
</table>

#### WLAN

<table>
<thead>
<tr>
<th>Frequency Range</th>
<th>2400 - 2483.5 MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifications</td>
<td>Supports WPA-2, WPA, WEP security protocols</td>
</tr>
<tr>
<td>Radio Function</td>
<td>Radio can be pre-provisioned with up to 20 SSIDs</td>
</tr>
</tbody>
</table>

### Audio

<table>
<thead>
<tr>
<th>Audio Output at Rated</th>
<th>3 W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio Output at Max</td>
<td>5 W</td>
</tr>
<tr>
<td>Audio Response (EIA)</td>
<td>+1, -3 dB</td>
</tr>
<tr>
<td>Speech Loudness at 12 in (300 mm)</td>
<td>105 phon</td>
</tr>
</tbody>
</table>

### GPS

<table>
<thead>
<tr>
<th>Constellations</th>
<th>GPS and GLONASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracking Sensitivity</td>
<td>-164 dBm</td>
</tr>
<tr>
<td>Accuracy&lt;sup&gt;1&lt;/sup&gt;</td>
<td>&lt;5 meters (95%)</td>
</tr>
<tr>
<td>Cold Start&lt;sup&gt;1&lt;/sup&gt;</td>
<td>&lt;60 seconds (95%)</td>
</tr>
<tr>
<td>Hot Start&lt;sup&gt;1&lt;/sup&gt;</td>
<td>&lt;5 seconds (95%)</td>
</tr>
<tr>
<td>Mode of Operation</td>
<td>Autonomous (Non-Assisted)</td>
</tr>
</tbody>
</table>

### Housing Color

| Housing Color | High Impact Green only |

<sup>1</sup> Measured conductively with >6 satellites visible at a nominal -130 dBm signal strength. Specs provided are 95th percentile values.
### REGULATORY INFORMATION

<table>
<thead>
<tr>
<th>Emission Designators</th>
<th>LMR</th>
<th>Bluetooth</th>
<th>WLAN (Wi-Fi)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BK10F1D, BK10F1E, BK10F1W, 11K0F3E, 16K0F3E, 20K0F1E</td>
<td>852KF1D, 1M17F1D, 1M19F1D</td>
<td>13M7G1D, 17M0D1D, 18M1D1D</td>
</tr>
</tbody>
</table>

### ENVIRONMENTAL

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>Low Pressure</td>
<td>High Temperature</td>
<td>Low Temperature</td>
<td>Temperature Shock</td>
<td>Solar Radiation</td>
</tr>
<tr>
<td>Proc./Cat.</td>
<td>Proc./Cat.</td>
<td>Proc./Cat.</td>
<td>Proc./Cat.</td>
<td>Proc./Cat.</td>
<td>Proc./Cat.</td>
</tr>
</tbody>
</table>

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 -20°C to +60°C.
ACHIEVE MISSION CRITICAL PERFORMANCE WITH MANAGED AND SUPPORT SERVICES

RISK & RESPONSIBILITY

ESSENTIAL
Only Support When You Need It
When the unpredictable happens to your network, Essential Services provide you access to Motorola’s Technical Support teams and resources for troubleshooting and maintenance.

ADVANCED
Improve Response and Continuity
Motorola’s expert service teams help mitigate downtime and ensure network continuity. Get fast response to network issues by our qualified technicians who analyze and diagnose your network as well as deliver routine maintenance.

PREMIER
Maximize Performance and Reduce Risk
Motorola’s Managed Services team helps operate and optimize your mission critical system. With Premier Services, you fully transfer the risk to Motorola and ensure your system operates at maximum performance levels, allowing your team to keep focus on its primary responsibilities.

ENSURE CONTINUITY • ENHANCE PRODUCTIVITY • REDUCE RISK.

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