We take the safety of first responders personally, which is why we designed the APX™ 7000XE – the most advanced, ultra-rugged radio with innovative features designed by first responders for first responders working in extreme environments.

Together we have created an ergonomically-superior radio that is easy to operate, with glove-friendly controls and a large top display. Significantly louder and clearer so that every word is heard when you’re battling noise in almost any environment. A mission critical multiband, multi-protocol radio so seamless, you can be confident your communications are truly interoperable.

Focus on the task, not the technology, with the high-performing portable that stands up and stands out in the toughest conditions.

**ADVANCED ERGONOMICS FOR EXTREME CONDITIONS**
- Easy to grip, hold and control in harsh conditions
- Glove-friendly controls are big, recognizable and easy to distinguish
- Well-spaced knobs eliminate accidental activation
- Enlarged top display is easy to read, in dark or low light
- Shielded push-to-talk button is easy to use with a gloved hand
- Largest emergency button in the industry

**EXCEPTIONAL AUDIO MEANS EVERY WORD IS HEARD**
- 50% louder and clearer without distorting transmissions
- Dual microphone locates the talker, cancels out ambient noise
- Extreme Audio Profile reduces background noise and improves voice clarity
- Equipped with the latest AMBE digital voice vocoder
- New speaker grill design for improved water runoff

**NEXT GENERATION TECHNOLOGY TO RELY ON NOW**
- Project 25 Phase 2 technology provides twice the voice capacity
- Multiband operation ensures seamless interoperability
- Backwards and forwards compatible with all Motorola mission critical radio systems
- Future-ready for applications like Mission Critical Wireless and GPS location tracking

**PRODUCT DATA SHEET | APX™ 7000XE**

- Channel Capacity
  - Top Display - 1,200
  - Dual Display - 2,000
- Universal Push-to-Talk
- T-Grip
- Dual Battery Latch
- Extra large emergency button
- 16 position rotary switch
- 2 position concentric switch
- 3 position toggle switch
- 3 programmable side buttons
- Transmit LED indicator
- Tail Top Display
  - 1 line of icons
  - 1 line x 8 characters of text
- Standard Rugged
- HazLoc
**FEATURES AND BENEFITS:**

- Available in 700-800 MHz, VHF, UHF Range 1 and 2 bands
- Optional multiband operation
- Trunking standards supported:
  - Clear or digital encrypted ASTRO®25 Trunked Operation
  - Capable of SmartZone®, SmartZone Omnlink, SmartNet®
- Analog MDC-1200 and Digital APCO P25 Conventional System Configurations
- Narrow and wide bandwidth digital receiver*
- Embedded digital signaling (ASTRO & ASTRO 25)
- Seamless wideband scan
- ASTRO 25 Integrated Voice & Data
- Integrated GPS/GLONASS for outdoor location tracking
- Intelligent Priority Scan
- Software Key
- Intelligent Lighting
- Radio Profiles
- Expansion Slot
- Micro SD removable memory card
- User programmable voice announcement
- Instant Recall

Meets Applicable MIL-STD-810C, D, E, F and G
Select frequency band combinations
Ships standard HAZ LOC approved and Rugged**
Yellow and green colored housing options

**SUPERIOR AUDIO FEATURES:**

- Extreme Audio Profile
- 1W high audio speaker
- Dual speakers (Model 3.5 only)
- Dual sided 2 microphone noise canceling technology

Utilizes Windows XP, Vista and Windows 7 and 8
Customer Programming Software (CPS)****
- Supports USB communications
- Built in FLASHPort™ support
Full portfolio of accessories including the XE Remote Speaker Microphone specifically designed for performance in extreme environments.

**MISSION CRITICAL WIRELESS BLUETOOTH***

**OPTIONAL FEATURES:**

- Enhanced Encryption capability
- Programming Over Project 25
- Over the Air Rekey
- Text Messaging
- Man Down

**BATTERIES FOR APX 7000XE**

<table>
<thead>
<tr>
<th>Battery Capacity / Type</th>
<th>Dimensions (HxWxD)</th>
<th>Weight</th>
<th>Battery Part Number</th>
<th>Battery Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Li-ion IMPRES 2, 2300 mAh, TIA 4950-A, IP68†</td>
<td>3.4” x 2.3” x 1.7”</td>
<td>6.5 oz</td>
<td>NNTN8930</td>
<td>2300 mAh</td>
</tr>
<tr>
<td>Li-ion IMPRES 2, 3400 mAh</td>
<td>3.4” x 2.3” x 1.7”</td>
<td>8.5 oz</td>
<td>PMNN4486</td>
<td>3400 mAh</td>
</tr>
<tr>
<td>Li-ion IMPRES 2, 4500 mAh, TIA 4950-A, IP68†</td>
<td>5.0” x 2.3” x 1.7”</td>
<td>11.3 oz</td>
<td>NNTN8921</td>
<td>4500 mAh</td>
</tr>
<tr>
<td>Li-ion IMPRES 2, 4850 mAh</td>
<td>5.0” x 2.3” x 1.7”</td>
<td>11.0 oz</td>
<td>PMNN4487</td>
<td>4850 mAh</td>
</tr>
<tr>
<td>Li-ion IMPRES 2, 5100 mAh</td>
<td>5.0” x 2.3” x 1.7”</td>
<td>11.0 oz</td>
<td>PMNN4494</td>
<td>5100 mAh</td>
</tr>
<tr>
<td>Li-ion IMPRES 2, 3100 mAh, TIA 4950-A, IP68</td>
<td>3.4” x 2.3” x 1.7”</td>
<td>7.1 oz</td>
<td>PMNN4547</td>
<td>3100 mAh</td>
</tr>
</tbody>
</table>

* Standard shipping battery
† HazLoc approval only available on 7/800 MHz and VHF band combinations

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**TRANSMITTER - TYPICAL PERFORMANCE SPECIFICATIONS**

<table>
<thead>
<tr>
<th>700 MHz</th>
<th>800 MHz</th>
<th>VHF</th>
<th>UHF Range 1</th>
<th>UHF Range 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range/Bandsplits</td>
<td>763-776 MHz</td>
<td>806-824 MHz</td>
<td>851-870 MHz</td>
<td>136-174 MHz</td>
</tr>
<tr>
<td>Channel Spacing</td>
<td>25/12.5 kHz</td>
<td>25/12.5 kHz</td>
<td>30/25/12.5 kHz</td>
<td>25/20/12.5 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>
</tr>
<tr>
<td>Rated RF Output Power Adj1</td>
<td>1-2.5 Watts</td>
<td>1-3 Watts</td>
<td>1-6 Watts</td>
<td>1-5 Watts</td>
</tr>
<tr>
<td>Frequency Stability1 (–30°C to +60°C, +25°C Ref.)</td>
<td>±0.00010%</td>
<td>±0.00010%</td>
<td>±0.00010%</td>
<td>±0.00010%</td>
</tr>
<tr>
<td>Modulation Limiting1</td>
<td>±5 kHz / ±4 kHz / ±2.5 kHz</td>
<td>±5 kHz / ±4 kHz / ±2.5 kHz</td>
<td>±5 kHz / ±4 kHz / ±2.5 kHz</td>
<td>±5 kHz / ±4 kHz / ±2.5 kHz</td>
</tr>
<tr>
<td>Emissions (Conducted and Radiated)3</td>
<td>–75 dB</td>
<td>–75 dB</td>
<td>–75 dB</td>
<td>–75 dB</td>
</tr>
<tr>
<td>Audio Response1</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 Distortion1</td>
<td>0.60 %</td>
<td>1 %</td>
<td>0.50 %</td>
<td>0.50 %</td>
</tr>
</tbody>
</table>

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*For the FCC Narrowbanding rules, new products (APX 7000XE UHF R1 - UHF R2 combination) submitted for FCC certification after January 1st, 2011 are restricted from being granted certification at 25 kHz for United States - State & Local Markets only. All other band combinations will comply with FCC Narrowbanding rules January 1st, 2013.

**Rugged radios exceed industry standards (IPx7) for submersion and provide a higher level of water protection—MIL-STD-810E, Method 512.3 Immersion. These radios meet the incremental requirement of submersion in 1 meter of fresh water that is 2°C colder than the product. HAZ LOC Certification & Level is dependent on configuration ordered.

*** Compatible with BT 2.1 HSP, PAN, DUN and SPP Profiles

**** CPS version R12.00.00 and greater ordered after June 2014 will only support Windows 7 and 8
### Receiver - Typical Performance Specifications

<table>
<thead>
<tr>
<th>Frequency Range/Bandsplits</th>
<th>700 MHz</th>
<th>800 MHz</th>
<th>VHF</th>
<th>UHF Range 1</th>
<th>UHF Range 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range/Bandsplits</td>
<td>763-776 MHz</td>
<td>851-870 MHz</td>
<td>136-174 MHz</td>
<td>380-470 MHz</td>
<td>450-520 MHz</td>
</tr>
<tr>
<td>Channel Spacing</td>
<td>25/12.5 kHz</td>
<td>25/12.5 kHz</td>
<td>38/25/12.5 kHz</td>
<td>25/12.5 kHz</td>
<td>25/12.5 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 Power at Rated¹</td>
<td>1000 mW</td>
<td>1000 mW</td>
<td>1000 mW</td>
<td>1000 mW</td>
<td>1000 mW</td>
</tr>
<tr>
<td>Frequency Stability¹ (–30°C to +60°C, +25°C Ref.)</td>
<td>±0.00010 %</td>
<td>±0.00010 %</td>
<td>±0.00010 %</td>
<td>±0.00010 %</td>
<td>±0.00010 %</td>
</tr>
<tr>
<td>Analog Sensitivity²</td>
<td>12 dB SINAD</td>
<td>0.250 μV</td>
<td>0.250 μV</td>
<td>0.218 μV</td>
<td>0.234 μV</td>
</tr>
<tr>
<td>Digital Sensitivity²</td>
<td>1% BER</td>
<td>0.347 μV</td>
<td>0.333 μV</td>
<td>0.277 μV</td>
<td>0.307 μV</td>
</tr>
<tr>
<td>Selectivity¹</td>
<td>25 kHz channel</td>
<td>75.7 dB</td>
<td>75.7 dB</td>
<td>78.3 dB</td>
<td>78.3 dB</td>
</tr>
<tr>
<td>Intermodulation Rejection</td>
<td>80 dB</td>
<td>80 dB</td>
<td>80.5 dB</td>
<td>80.2 dB</td>
<td>80.2 dB</td>
</tr>
<tr>
<td>Spurious Rejection</td>
<td>76.6 dB</td>
<td>76.6 dB</td>
<td>93.7 dB</td>
<td>80.3 dB</td>
<td>80.3 dB</td>
</tr>
<tr>
<td>FM Hum &amp; Noise</td>
<td>25 kHz</td>
<td>75.7 dB</td>
<td>75.7 dB</td>
<td>78.3 dB</td>
<td>78.3 dB</td>
</tr>
<tr>
<td>Audio Distortion¹</td>
<td>0.9 %</td>
<td>0.9 %</td>
<td>1.20 %</td>
<td>0.91 %</td>
<td>0.91 %</td>
</tr>
</tbody>
</table>

### Radio Models

#### Model 1.5 Top Display

| Display | Tall monochromatic LCD top display | 1 line text, 8 characters | 1 line of icons | No menu support | Multi-color backlight |
| Keypad | None |
| Channel Capacity | 1200 |
| FLASHport Memory | 84 MB |
| 700/800 MHz (763-870 MHz) | Model H49TGD9PW1AN, Primary QA00569, Secondary QA00573 |
| VHF (136-174 MHz) | Model H49TGD9PW1AN, Primary QA00570, Secondary QA00574 |
| UHF Range 1 (380-470 MHz) | Model H49TGD9PW1AN, Primary QA00571, Secondary QA00575 |
| UHF Range 2 (450-520 MHz) | Model H49TGD9PW1AN, Primary QA00572, Secondary QA00576 |
| Buttons & Switches | Large PTT button | Angled on/off volume knob | X-large emergency button | 16 position top mounted rotary knob | 2-position concentric switch | 3-position toggle switch | 3 programmable side buttons |
| Embedded GPS LED | Yes | Multi-color |

#### Model 3.5 Dual Display

| Display | Tall monochromatic LCD top display | Large color LCD front display | 4 lines text, 14 characters | 2 lines of icons | 1 menu line, 3 menus, White backlight |
| Keypad | Backlight Keypad | 3 soft keys | 4-direction navigation key | 4x3 keypad | Home and Data buttons |
| Channel Capacity | 3000 |
| FLASHport Memory | 84 MB |
| 700/800 MHz (763-870 MHz) | Model H49TGD9PW1AN, Primary QA00569, Secondary QA00573, Keypad/Dual Display QA00577 |
| VHF (136-174 MHz) | Model H49TGD9PW1AN, Primary QA00570, Secondary QA00574, Keypad/Dual Display QA00577 |
| UHF Range 1 (380-470 MHz) | Model H49TGD9PW1AN, Primary QA00571, Secondary QA00575, Keypad/Dual Display QA00577 |
| UHF Range 2 (450-520 MHz) | Model H49TGD9PW1AN, Primary QA00572, Secondary QA00576, Keypad/Dual Display QA00577 |
| Buttons & Switches | Large PTT button | Angled On/Off Volume knob | Extra large emergency button | 16 position top mounted rotary knob | 2-position concentric switch | 3-position toggle switch | 3 programmable side buttons | Multi-color backlight |
| Embedded GPS LED | Yes | Multi-color |

#### Transmitter Certification - per FCC Grant of Equipment Authorization

- **VHF – 700/800 MHz**: AZ489FT7036 (136-174 MHz and 764-869 MHz)
- **UHF R1 – 700/800 MHz**: AZ489FT7040 (380-470 MHz and 764-869 MHz)
- **UHF R1 – VHF**: AZ489FT4886 (380-470 MHz and 136-174 MHz)
- **UHF R2 – 700/800 MHz**: AZ489FT7042 (450-520 MHz and 764-869 MHz)
- **UHF R2 – VHF**: AZ489FT4893 (450-520 MHz and 136-174 MHz)
- **Bluetooth**: AZ489FT6000 (2402-2480 MHz)

#### FCC Emission Designators

| FCC Emission Designators | 11K0F3E, 18K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 20K0F1E* |

#### Power Supply

| Power Supply | One rechargeable 2650 mAh TIA 4950-A Li-Ion Standard Battery (INNTN8930) available for 7/800 MHz & VHF band combinations. |

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**PRODUCT DATA SHEET | APX™ 7000XE**
**ENCRYPTION**

- **Supported Encryption Algorithms**
  - AEP, AES, DES, DES-XL, DES-OFB, DVP-XL
- **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 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

**ENVIRONMENTAL SPECIFICATIONS**

- **Operating Temperature**
  - -30ºC / +60ºC
- **Storage Temperature**
  - -40ºC / +85ºC
- **Humidity**
  - MIL-STD 567 x PRESS II
- **ESD**
  - IEC 801-2 KV
- **Water and Dust Intrusion**
  - Mil Std 512.X, Delta - T

**GPS SPECIFICATIONS**

- **Channels**
  - 12
- **Tracking Sensitivity**
  - <151 dBm
- **Accuracy**
  - <10 meters (95%)
- **Cold Start**
  - <60 seconds (95%)
- **Hot Start**
  - <10 seconds (95%)
- **Mode of Operation**
  - Autonomous (Non-Assisted) GPS

**DIMENSIONS OF THE RADIOS WITHOUT BATTERY**

<table>
<thead>
<tr>
<th></th>
<th>Inches</th>
<th>Millimeters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>6.94</td>
<td>176.3</td>
</tr>
<tr>
<td>Width Push-To-Talk button</td>
<td>2.39</td>
<td>60.8</td>
</tr>
<tr>
<td>Depth Push-To-Talk button</td>
<td>1.40</td>
<td>35.6</td>
</tr>
<tr>
<td>Width Top</td>
<td>3.32</td>
<td>84.3</td>
</tr>
<tr>
<td>Depth Top</td>
<td>2.18</td>
<td>55.4</td>
</tr>
<tr>
<td>Depth Bottom</td>
<td>1.25</td>
<td>31.7</td>
</tr>
<tr>
<td>Weight of the radios without battery</td>
<td>15.4 oz</td>
<td>439 g</td>
</tr>
</tbody>
</table>

**RUGGED OPTION SPECIFICATIONS**

- **Leakage (submersion)**
  - MIL-STD-810 C, D, E, F & G Method 512.X Procedure I
- **Housing Availability**
  - Black (Standard), Public Safety Yellow and High Impact Green
- **Hazardous Location/Intrinsic Safety (IS)**
  - Class I, Division 1, Group D; Class II, Division 1, Group E, F, G;
  - Class III, Hazardous (Classified) Locations

Motorola Solutions, Inc. 1301 East Algonquin Road Schaumburg, Illinois 60196, U.S.A. 800-367-2346
motorolasilutions.com

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