



# APX™ 8000 ALL-BAND P25 PORTABLE RADIO

## UNLIMITED MOBILITY. UNCOMPROMISING PERFORMANCE.

Take command with a 4-in-1 radio that offers limitless interoperability, the clearest, loudest audio and seamless Wi-Fi® connectivity. The compact, rugged and secure APX 8000 redefines mission critical communications.

### ALL BANDS, NO BOUNDARIES

With four RF bands and multi-mode system access, the APX 8000 knows no limits when it comes to interoperability. Communicate across borders using a single device. Use analog MDC 1200 or digital P25 mode, conventional or trunked operation, SmartNet or SmartZone legacy systems, clear or secure - all across 7/800MHz, VHF and UHF Range 1 & 2 bands.

### HEAR AND BE HEARD MORE CLEARLY

Whether it's loud or windy, whether you whisper or yell, the APX 8000 adaptive audio engine and ultra-loud speaker brings clarity into every conversation. The radio dynamically changes the level of noise suppression, microphone gain, windporting and speaker equalization on the fly to consistently produce the loudest, clearest audio in any environment.

### VOICE AND DATA, ALL AT ONCE

With Wi-Fi® access, the APX 8000 can quickly receive new codeplugs, firmware and software features, as users keep talking without interruption. You can even connect to a broadband LTE network using the Data Modem Tethering feature. Mission-Critical Wireless Bluetooth® connects you quickly and securely with remote speaker microphones, surveillance kits and LEX Mission-Critical LTE devices for radio remote control.

### FIT FOR THE MISSION

Intuitively designed with a familiar look and feel, the compact APX 8000 is always comfortable to use, from your holster to your grip. It contains 4 radio bands packaged into the award-winning design of the APX 6000. The all-band antenna is flexible so it doesn't get in the way.

### RUGGED, ROBUST & RELIABLE

With a water-tight seal, drop-resistant dual battery latch, pressure-tested tempered glass display and a shock-absorbing aluminum alloy endoskeleton, the APX 8000 is ready for unpredictable environments. It can survive 2 meter water submersion for 2 hours (IP68) and Motorola's renowned Accelerated Life Test.

### DESIGNED TO SECURE & PROTECT

The APX 8000's voice and data is secured by multiple hardware encryption algorithms (AES, DES, ADP), up to 128 keys and the ability to re-key over the air so that sensitive information stays protected from scanners and eavesdroppers. P25 Radio Authentication ensures only valid users can access the system while two-factor authentication allows users to securely log in to databases.



#### RF BANDS:

700/800 MHz, VHF, UHF Range 1 & 2

#### OPERATION MODES:

9600 Baud Digital APCO P25 Phase 1 FDMA and Phase 2 TDMA Trunking  
3600 Baud SmartNet®, SmartZone®, SmartZone, Omnilink Trunking  
Digital 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*                 | ISSI 8000 Roaming                   |
| ASTRO 25 Integrated Voice & Data                     | Radio Profiles, Dynamic Zone        |
| Integrated GPS/GLONASS for outdoor location tracking | Intelligent Lighting                |
| Intelligent Priority Scan                            | Single-key ADP Encryption           |
| Software Key                                         | IP68 submersion (2 meters, 2 hours) |
| Text-Messaging                                       | IMPRES 2 Battery                    |
| Voice Announcements                                  | LEX L10 Collaboration               |
| Instant Recall                                       |                                     |

#### ADAPTIVE AUDIO ENGINE:

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

#### PROGRAMMING:

Utilizes Windows 7 & 8 Customer Programming Software (CPS) with Radio Management

#### OPTIONAL FEATURES:

Wi-Fi® 802.11 b/g/n  
Data Modem Tethering  
RFID Volume Knob  
Multi-key for 128 keys and multi-algorithm  
Programming Over Project 25 (OTAP)  
Over the Air Rekey (OTAR)  
Digital Tone Signaling  
P25 Authentication  
Man Down Sensor  
IP68 (2m/4hr), Mil Std 512.X Delta - T  
Listed by UL to non-incendive standards: ISA 12.12.01-2015 and CAN/CSA C22.2 No. 213-15 as safe for use in Class I, Division 2, Groups A,B,C,D; Class II, Division 2, Groups F,G; Class III, Division 2 Hazardous (Classified) Locations. Non-Incendive (Non Incendiaire) when used with Motorola Battery: PMNN4504A (Rated 7.4 V, 3400 mAh) or PMNN4505A (Rated 7.4 V, 4850 mAh)



\* Compatible with BT 2.1, HSP, PAN, DUN and SPP Profiles found in off-the-shelf BT accessories and BT 4.x



| TRANSMITTER - TYPICAL PERFORMANCE SPECIFICATIONS                 |                                                      |                            |                            |                            |
|------------------------------------------------------------------|------------------------------------------------------|----------------------------|----------------------------|----------------------------|
|                                                                  | 700/800                                              | VHF                        | UHF Range 1                | UHF Range 2                |
| Frequency Range/Bandsplits                                       | 764-776, 794-806 MHz<br>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 <sup>1</sup>                           | 700 MHz: 1-2.5 Watts<br>800 MHz: 1-3 Watts           | 1-6 Watts                  | 1-5 Watts                  | 1-5 Watts                  |
| Frequency Stability <sup>1</sup><br>(-30°C to +60°C; +25°C Ref.) | +/- 1.0 ppm                                          | +/- 1.0 ppm                | +/- 1.0 ppm                | +/- 1.0 ppm                |
| 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 dBc                                              | -75 dBc                    | -75 dBc                    | -75 dBc                    |
| Audio Response <sup>1</sup>                                      | +1, -3 dB                                            | +1, -3 dB                  | +1, -3 dB                  | +1, -3 dB                  |
| FM Hum & Noise<br>(25kHz / 12.5kHz) <sup>1</sup>                 | 700 MHz: -49 dB/-47 dB<br>800 MHz: -49 dB/-46 dB     | -51 dB/-51 dB              | -51 dB/-51 dB              | -51 dB/-47 dB              |
| Audio Distortion<br>(25kHz / 12.5kHz) <sup>1</sup>               | 700 MHz: 0.90 % / 0.90 %<br>800 MHz: 0.60 % / 0.90 % | 0.50 % / 0.90 %            | 0.50 % / 0.90 %            | 0.60 % / 0.90 %            |

| BATTERIES FOR APX 8000                             |                    |         |                     |                  |
|----------------------------------------------------|--------------------|---------|---------------------|------------------|
| Battery Capacity / Type                            | Dimensions (HxWxD) | Weight  | Battery Part Number | Battery Capacity |
| Li-Ion IMPRES 2, 3400 mAh**                        | 3.4" x 2.3" x 1.7" | 6.5 oz  | PMNN4486            | 3400 mAh         |
| Li-Ion IMPRES 2, 4850 mAh                          | 5.0" x 2.3" x 1.7" | 11.0 oz | PMNN4487            | 4850 mAh         |
| Li-Ion IMPRES 2, 5100 mAh                          | 5.0" x 2.3" x 1.7" | 11 oz   | PMNN4494            | 5100 mAh         |
| 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*** | 5.0" x 2.3" x 1.7" | 10 oz   | PMNN4505            | 4850 mAh         |

\*\*\*Listed by UL to non-incendive standards: ISA 12.12.01-2015 and CAN/CSA C22.2 No. 213-15 as safe for use in Class I, Division 2, Groups A,B,C,D; Class II, Division 2, Groups F,G; Class III, Division 2 Hazardous (Classified) Locations.





## RADIO MODELS

|                           | MODEL 1.5                                                                                                                                                                                                                            | MODEL 2.5                                                                                                                                                    | MODEL 3.5                                                                                                                                                    |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Display                   | Full bitmap monochromatic LCD top display<br>1 line text x 8 characters<br>1 line of icons<br>No menu support<br>Multi-color backlight                                                                                               | <b>Top display plus:</b><br>Full bitmap color LCD display<br>4 lines of text x 14 characters<br>2 lines of icons<br>1 menu line x 3 menus<br>White backlight | <b>Top display plus:</b><br>Full bitmap color LCD display<br>4 lines of text x 14 characters<br>2 lines of icons<br>1 menu line x 3 menus<br>White backlight |
| Keypad                    | none                                                                                                                                                                                                                                 | Backlit keypad<br>3 soft keys<br>4 direction Navigation key<br>Home and Data buttons                                                                         | Backlit keypad<br>3 soft keys<br>4 direction navigation key<br>4x3 keypad<br>Home and Data buttons                                                           |
| Channel Capacity          | 1200                                                                                                                                                                                                                                 | 3000                                                                                                                                                         | 3000                                                                                                                                                         |
| FLASHport Memory          | 2 GB                                                                                                                                                                                                                                 | 2 GB                                                                                                                                                         | 2 GB                                                                                                                                                         |
| 700/800 MHz (764-870 MHz) |                                                                                                                                                                                                                                      |                                                                                                                                                              |                                                                                                                                                              |
| VHF (136-174 MHz)         | H91TGD9PW5AN                                                                                                                                                                                                                         | H91TGD9PW6AN                                                                                                                                                 | H91TGD9PW7AN                                                                                                                                                 |
| UHF Range 1 (380-470 MHz) |                                                                                                                                                                                                                                      |                                                                                                                                                              |                                                                                                                                                              |
| UHF Range 2 (450-520 MHz) |                                                                                                                                                                                                                                      |                                                                                                                                                              |                                                                                                                                                              |
| Buttons & Switches        | Large PTT button ■ Angled On/Off volume control ■ Orange emergency button ■ 16 position top-mounted rotary switch<br>■ 2-position concentric switch ■ Multi-color backlight ■ 3-position toggle switch ■ 3 programmable side buttons |                                                                                                                                                              |                                                                                                                                                              |
| Regulatory Information    |                                                                                                                                                                                                                                      |                                                                                                                                                              |                                                                                                                                                              |
| FCC ID                    | AZ489FT7061                                                                                                                                                                                                                          |                                                                                                                                                              |                                                                                                                                                              |
| Industry Canada           | 109U-89FT7061                                                                                                                                                                                                                        |                                                                                                                                                              |                                                                                                                                                              |
| Emission Designators      | LMR: 8K10F1D, 8K10F1E, 8K10F1W, 11K0F3E, 16K0F3E***, 20K0F1E***<br>Bluetooth: 852KF1D, 1M17F1D, 1M19F1D<br>WLAN (Wi-Fi®): 13M7G1D, 17MOD1D, 18M1D1D                                                                                  |                                                                                                                                                              |                                                                                                                                                              |

\*\*\* In accordance with FCC mandate, the APX 8000 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.



| 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  |
| Audio Output Power at Rated <sup>1</sup>                            |              | 1 Watt          | 1 Watt          | 1 Watt          | 1 Watt          |
| Frequency Stability <sup>1</sup><br>(-30°C to +60°C; +25°C Ref.)    |              | +/- 1.0 ppm     | +/- 1.0 ppm     | +/- 1.0 ppm     | +/- 1.0 ppm     |
| Analog Sensitivity <sup>1</sup><br>Digital Sensitivity <sup>2</sup> | 12 dB SINAD  | 0.224 $\mu$ V   | 0.224 $\mu$ V   | 0.168 $\mu$ V   | 0.199 $\mu$ V   |
|                                                                     | 1% BER       | 0.316 $\mu$ V   | 0.316 $\mu$ V   | 0.251 $\mu$ V   | 0.282 $\mu$ V   |
|                                                                     | 5% BER       | 0.211 $\mu$ V   | 0.211 $\mu$ V   | 0.149 $\mu$ V   | 0.158 $\mu$ V   |
|                                                                     | 5% BER Faded | 0.562 $\mu$ V   | 0.562 $\mu$ V   | 0.562 $\mu$ V   | 0.530 $\mu$ V   |
| Selectivity (25 kHz / 12.5 kHz) <sup>1, 5</sup>                     |              | 79 dB / 72 dB   | 78 dB / 72 dB   | 82 dB / 77 dB   | 80 dB / 74 dB   |
| Intermodulation Rejection <sup>1</sup>                              |              | 81 dB           | 80 dB           | 82 dB           | 80 dB           |
| Spurious Rejection <sup>1</sup>                                     |              | 98 dB           | 98 dB           | 92 dB           | 98 dB           |
| FM Hum and Noise<br>(25 kHz / 12.5 kHz) <sup>1</sup>                |              | -55 dB / -53 dB | -54 dB / -52 dB | -57 dB / -55 dB | -56 dB / -54 dB |
| Audio Distortion <sup>1</sup>                                       |              | 0.9 %           | 0.9 %           | 0.9 %           | 0.9 %           |



| 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             |
| Blowing Sand                                    | 1 Proc       | 1 Proc          | 510.2        | II          | 510.3        | II          | 510.4        | II            | 510.5        | II            |
| Submersion <sup>6</sup>                         | 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            |

| DIMENSIONS OF THE RADIOS WITHOUT BATTERY |          |             |
|------------------------------------------|----------|-------------|
|                                          | Inches   | Millimeters |
| Length                                   | 5.47     | 139         |
| Width Push-To-Talk button                | 2.39     | 60.7        |
| Depth Push-To-Talk button                | 1.40     | 35.6        |
| Width Top                                | 2.98     | 75.7        |
| Depth Top                                | 1.58     | 40.1        |
| Depth Bottom of Battery                  | 1.24     | 31.5        |
| Weight of the radios without battery     | 11.25 oz | 319 g       |

| ENCRYPTION                        |                                                                                                                      |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Supported Encryption Algorithms   | ADP, 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<br>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<br>FIPS 197                                                                                       |

| GPS/GNSS SPECIFICATIONS |                           |
|-------------------------|---------------------------|
| Constellations          | GPS & GLONASS             |
| Tracking Sensitivity    | –164 dBm                  |
| Accuracy <sup>3</sup>   | <5 meters (95%)           |
| Cold Start <sup>3</sup> | <60 seconds (95%)         |
| Hot Start <sup>3</sup>  | <5 seconds (95%)          |
| Mode of Operation       | Autonomous (Non-Assisted) |

| ENVIRONMENTAL SPECIFICATIONS       |                          |
|------------------------------------|--------------------------|
| Operating Temperature <sup>4</sup> | -30°C / +60°C            |
| Storage Temperature <sup>4</sup>   | -40°C / +85°C            |
| Humidity                           | Per MIL-STD              |
| ESD                                | IEC 801-2 KV             |
| Water and Dust Intrusion           | IP68 (2 meters, 2 hours) |

| RUGGED OPTION SPECIFICATIONS      |                                                                                    |
|-----------------------------------|------------------------------------------------------------------------------------|
| Leakage (submersion) <sup>6</sup> | MIL-STD-810 C, D, E, F and G<br>Method 512.X Procedure I, IP68 (2 meters, 4 hours) |

| HOUSING COLOR                                                 |  |
|---------------------------------------------------------------|--|
| Black (Standard), Public Safety Yellow, and High Impact Green |  |

<sup>1</sup> Measured conductively in analog mode per TIA / EIA 603 under nominal conditions.  
<sup>2</sup> Measured conductively in digital mode per TIA / EIA IS 102.CAAA under nominal conditions.  
<sup>3</sup> Measured conductively with >6 satellites visible at a nominal –130 dBm signal strength. Specs provided are 95th percentile values.  
<sup>4</sup> Temperatures listed are for radio specifications. Battery storage is recommended at 25°C, ±5°C to ensure best performance.  
<sup>5</sup> Measured using the TIA-603 single-tone method.  
<sup>6</sup> Rugged option only. Specifications subject to change without notice.

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

| WIRELESS CONNECTIVITY & SECURITY                                                                                                                                                                      |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Frequency Range/Bandsplits:<br>Bluetooth: 2402 - 2480 MHz, WLAN (Wi-Fi®): 2400 - 2483.5 MHz                                                                                                           |  |
| WLAN (Wi-Fi®) 802.11 b/g/n supports WPA-2, WPA, WEP security protocols; radio can be pre-provisioned with up to 20 SSIDs                                                                              |  |
| 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 Low Energy uses 128-bit AES-CCM encryption                                                                                                                                                  |  |





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