

# APX NEXT

PROTECT YOUR **FOCUS**

IN PUBLIC SAFETY, FOCUS IS YOUR GREATEST RESOURCE. MAKE SURE IT'S PROTECTED WITH APX NEXT™.

#### **A MASSIVE ADVANCE IN MISSION-CRITICAL VOICE AND DATA**

Your radio is your lifeline. APX NEXT is our next step in advancing it. It's designed to military standards for extreme ruggedness. The touchscreen works with or without gloves—in rain, dirt, and dust. Digital mics and high-power speakers deliver our best audio ever, while SmartConnect keeps you connected even beyond your P25 system. The result is a radio that works when you need it, without pause, distraction or doubt.

#### **EFFORTLESS IS ALWAYS IN REACH**

APX NEXT is designed for effortless usability when everything is on the line. Intuitive knobs and buttons are easily distinguished by touch. A mission-critical touchscreen makes it fast and easy to operate your radio. ViQi understands a huge range of natural language voice commands, so you can operate the radio with eyes-up awareness. Every interaction is simple, fast and logical. You stay focused on what matters—your mission and your safety.

#### **BRING NEW INTELLIGENCE TO THE POINT OF ENGAGEMENT**

APX NEXT mission-critical apps bring new intelligence to the field. ViQi enables natural language database queries, rapidly giving vital information, and letting dispatchers stay focused on critical situations. And as part of our unique, end-to-end public safety ecosystem, APX NEXT data and operations are secure, and new capabilities can be seamlessly added as your needs evolve.

#### **UPDATE YOUR FLEET IN MINUTES, NOT MONTHS**

APX NEXT gives you back time: a cloud-based provisioning system prepares radios before they arrive. Remote updating keeps radios in the field, with zero touch and zero downtime. MyView Portal provides direct access to subscriptions, warranties and licenses, and a range of services helps you manage your operation. With APX NEXT, your ownership experience is streamlined, so your valuable resources stay focused and ready.



# MISSION-CRITICAL DESIGN

New antenna technology improves comfort and wearability

Large color top screen, for glanceable status updates

Intuitive hard controls, protected against accidental activation

Mission-critical touchscreen: rugged, usable with gloves, readable in all lighting conditions

Digital microphones, for outstanding audio capture

Large, distinctive buttons for PTT, emergency and ViQi, and two additional programmable side buttons

Standard 3850 mAh battery, with 5650 mAh high capacity option



# FEATURES

## OPERATION MODES

Digital Trunking: 9600 Baud APCO P25 Phase 1 FDMA and Phase 2 TDMA

Digital Conventional: APCO 25

Analog Trunking: 3600 Baud SmartNet®, SmartZone®, Omnilink®

Analog Conventional: MDC 1200

ASTRO® 25 Integrated Voice and Data

SmartConnect Multi-net Connectivity\*

## FREQUENCY BANDS

All-band: Simultaneous Operation in VHF, UHF Range 1, UHF Range 2, 700 and 800 MHz Bands

Up to 3000 Channels

Up to 125 Zones

## ADDITIONAL CONNECTIVITY

Bluetooth (Version 5.0)

WiFi (802.11a/b/g/n/ac), 2.4 and 5 GHz Bands

LTE (FirstNet® Ready)

NFC (Near-Field Communications)\*\*

## AUDIO FEATURES

3 W Speaker with Adaptive Equalization

2 Internal Digital Microphones

Adaptive Dual-sided Operation

Adaptive Noise Suppression Intensity

Adaptive Gain Control

Adaptive Windporting

IMPRES™ Audio Accessory Compatibility

## MANAGEMENT

RadioCentral™

SmartProgramming™

## LOCATION-TRACKING

Built-in GNSS (GPS and GLONASS)

SmartLocate\*

Mission-critical Geofence\*\*

## SECURITY

256-bit AES\*

Single-key ADP Encryption

Software Key

P25 Authentication\*

Multikey for 128 Keys and Multi-algorithm\*

Over-The-Air Rekeying (OTAR)\*

## INGRESS PROTECTION

IP6x Dust

IPx8 Submersion (2 m, 4 hr)

MIL-STD Delta-T, 512.X Procedure 1

## MESSAGING

Text Messaging

Freeform or Canned Messages

## USER INTERFACE

3.6" Mission-critical Touchscreen: 800x480 TFT 24-bit Full Color Transflective Display, 1 mm Toughened Glass Lens

Capacitive Touch Technology: Usable with Gloves

Up to 4 mm Thick, Resistant to False Actuation from Fresh or Salt Water, Snow, Ice, Dirt or Grease

High Velocity User Interface: Large Touch Targets, Shallow Menu Hierarchy, Home Screen Information at a Glance, Integrated Applications

1.2" Top Display: 200x112 TFT 18-bit Color Transflective Screen, 1 Line of Icons, 2 Lines of Text, 14 Characters per Line, 2 mm Toughened Glass Lens

PTT Button: 1.32 x 0.54 in (33.5 x 13.8 mm)

16-position Channel Selector

Angled Power/Volume Knob

Large Orange Emergency Button

3 Programmable Side Buttons (1-dot, 2-dot, purple)

Concentric 2-position Switch

ABC Zone Switch

ViQi Button (3-dot)

Display On/Off/Home Button

## ViQi VOICE INTERACTION

Customizable Voice Announcements

Voice Control: 13 Actions, 76 Commands\*

Virtual Partner Service\*

## ENERGY

Standard 3850 mAh Battery

Optional High Capacity 5650 mAh Battery\*

IMPRES 2 Smart Battery Technology

## SENSORS

Ambient Light

Accelerometer x2 (Display Orientation, Man Down)

Magnetometer (eCompass)

## OTHER FEATURES

Radio Profiles

Enhanced Data\*

Multicast Voting Scan\*

Man Down\*\*

## DIMENSIONS

### Radio with Standard Battery, no Antenna

Height: 5.4 in (138 mm)

Width: 2.5 in (63 mm)

Depth: 1.7 in (43 mm)

Weight: 18.5 oz (525 g)

### Radio with High Capacity Battery, no Antenna

Height: 7.1 in (180 mm)

Width: 2.5 in (63 mm)

Depth: 1.7 in (43 mm)

Weight: 22.8 oz (647 g)





# PERFORMANCE

## TRANSMITTER

|   | Footnote | VHF                | UHF Range 1        | UHF Range 2        | 700 MHz              | 800 MHz              |
|---|----------|--------------------|--------------------|--------------------|----------------------|----------------------|
| Frequency Range / Bandsplits                        | -        | 136-174 MHz        | 380-470 MHz        | 450-520 MHz        | 762-776, 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        | -53 / -55 dB       | -52 / -54 dB       | -51 / -54 dB       | -50 / -55 dB         | -49 / -53 dB         |
| Audio Distortion (12.5 / 25 kHz Channel)            | 2        | 0.75% / 0.75%      | 0.75% / 0.75%      | 0.75% / 0.75%      | 0.85% / 0.85%        | 0.85% / 0.85%        |

## RECEIVER

|   | Footnote | VHF                   | UHF Range 1           | UHF Range 2           | 700 MHz               | 800 MHz               |
|---|----------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Frequency Range / Bandsplits                        | -        | 136-174 MHz           | 380-470 MHz           | 450-520 MHz           | 762-776, 799-806 MHz  | 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        |
| 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)                    | 2        | 0.178 µV (-122.0 dBm) | 0.211 µV (-120.5 dBm) | 0.211 µV (-120.5 dBm) | 0.224 µV (-120.0 dBm) | 0.237 µV (-119.5 dBm) |
| Digital Sensitivity (1% BER)                        | 3        | 0.266 µV (-118.5 dBm) | 0.298 µV (-117.5 dBm) | 0.298 µV (-117.5 dBm) | 0.335 µV (-116.5 dBm) | 0.335 µV (-116.5 dBm) |
| Digital Sensitivity (5% BER)                        | 3        | 0.158 µV (-123.0 dBm) | 0.178 µV (-122.0 dBm) | 0.178 µV (-122.0 dBm) | 0.224 µV (-120.0 dBm) | 0.224 µV (-120.0 dBm) |
| Selectivity (12.5 / 25 kHz Channel)                 | 2        | 77 / 84 dB            | 74 / 81 dB            | 74 / 81 dB            | 72 / 80 dB            | 72 / 79 dB            |
| Intermodulation Rejection                           | 2        | 82 dB                 | 80 dB                 | 80 dB                 | 80 dB                 | 80 dB                 |
| Spurious Rejection                                  | 2        | 98 dB                 | 95 dB                 | 95 dB                 | 98 dB                 | 98 dB                 |
| FM Hum and Noise (12.5 / 25 kHz Channel)            | 2        | 55 / 59 dB            | 54 / 58 dB            | 54 / 58 dB            | 53 / 57 dB            | 52 / 56 dB            |
| Audio Distortion                                    | 2        | 0.90%                 | 0.90%                 | 0.90%                 | 0.90%                 | 0.90%                 |





### IMPRES™ 2 BATTERIES

|                      | Footnote | Part No  | Capacity | Availability |
|----------------------|----------|----------|----------|--------------|
| Standard             | -        | NNTN9087 | 3850 mAh | Included     |
| High Capacity        | -        | NNTN9089 | 5650 mAh | Optional     |
| Standard HazLoc      | 4        | NNTN9088 | 3850 mAh | Optional     |
| High Capacity HazLoc | 4        | NNTN9090 | 5650 mAh | Optional     |

### ENCRIPTION

|                                 |  |
|---------------------------------|--|
| Supported Encryption Algorithms | ADP, 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 Keying               | Local Key Loader and Over-the-Air Rekeying (OTAR)  |
| Synchronization                 | XL - Counter Addressing<br>OFB - Output Feedback   |
| Vector Generator                | NIST-Approved Random Number Generator  |
| Encryption Type                 | Digital and SecureNet, TLS1.2, SRTP  |
| Key Storage                     | Tamper-protected Volatile or Non-volatile Memory   |
| Key Erasure                     | Keyboard Command and Tamper Detection  |
| Standards                       | FIPS 140-2 Level 1 and Level 3, FIPS 197   |
| Device Certificates             | x.509v3 ECC-P384, x.509v3 RSA-2048   |
| Cipher Suites                   | ECDHE_ECDSA_WITH_AES256_GCM_SHA384<br>TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384<br>TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA<br>TLS_RSA_WITH_AES_256_GCM_SHA384<br>SRTP_AEAD_AES_256_GCM1 |

### COLOR

|   |  |
|---|--|
| Standard Color  | Black/Gray   |
| Optional Side Panel Colors (Supplied as Retro-fit Kits) | Red, Blue, Orange, Public Safety Yellow, High Impact Green, Coyote Brown |

### WIRELESS

| LTE                    |                            |
|------------------------|----------------------------|
| Bands Supported        | 2, 4, 12, 14               |
| Bands (Hardware Ready) | 5, 13, 17                  |
| Device Class           | 4                          |
| Certifications         | FirstNet                   |
| WiFi                   |                            |
| Standards Supported    | 802.11a/b/g/n/ac           |
| Frequency Range        | 2400-2472, 5180-5825 MHz   |
| Security               | Supports WPA-2, WPA, WEP   |
| Capacity               | Up to 20 SSIDs             |
| Bluetooth              |                            |
| Version                | 5.0                        |
| Frequency Range        | 2402 - 2480 MHz            |
| Security               | 128-bit AES-CCM Encryption |

### AUDIO

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

### LOCATION-TRACKING

|                      | Footnote |   |
|----------------------|----------|---|
| Constellations       | -        | GNSS (GPS and GLONASS)                      |
| Tracking Sensitivity | -        | -159 dBm                                    |
| Accuracy             | 5        | <5m (95%)                                   |
| Cold Start           | 5        | <60 Seconds (95%)                           |
| Hot Start            | 5        | <5 Seconds (95%)                            |
| Mode                 | -        | Autonomous (Assisted only with LTE service) |

# ENVIRONMENTAL AND REGULATORY

## MIL-STD 810

| MIL-STD 810C      |        |                 | MIL-STD 810D |             | MIL-STD 810E |             | MIL-STD 810F |               | MIL-STD 810G/H |               |
|-------------------|--------|-----------------|--------------|-------------|--------------|-------------|--------------|---------------|----------------|---------------|
|                   | 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             |
| 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              | 516.3        | IV          | 516.4        | IV          | 516.5        | IV            | 516.6          | IV            |

## ENVIRONMENTAL

|                               | Footnote |  |
|-------------------------------|----------|--|
| Operating Temperature         | 6        | -30 to +60 °C (-22 to +140 °F)                                 |
| Storage Temperature           | 6        | -40 to +85 °C (-40 to +185 °F)                                 |
| Humidity                      | -        | Per MIL-STD 810  |
| ESD                           | -        | IEC 801 - 2 kV   |
| Dust Resistance               | -        | IP6X   |
| Water Resistance (Submersion) | -        | IPX8 (2 meters, 4 hours)<br>MIL-STD Delta-T, 512.X Procedure 1 |

## REGULATORY

|                 |  |
|-----------------|--|
| FCC ID          | AZ489FT7119  |
| IC ID           | 109U-89FT7119  |
| LMR             | 8K10F1D, 8K10F1E, 8K10F1W, 11K0F3E, 16K0F3E, 20K0F1E   |
| Bluetooth       | 1M18G1D, 1M1F1D, 2M1F1D  |
| WiFi            | 12M9G1D, 16M7D1D, 17M9D1D, 36M2D1D, 17M5D1D, 18M4D1D, 36M8D1D, 76M1D1D   |
| LTE             | Band 2 (1850.7 - 1900 MHz), Modulation: *G7D, *D7W<br>Band 4 (1710.7 - 1745 MHz), Modulation: *G7D, *D7W<br>Band 12 (699.7 - 711 MHz), Modulation: *G7D, *D7W<br>Band 14 (790.5 - 793 MHz), Modulation: *G7D, *D7W |
| OM Model Number | H55TGT9PW8AN   |

### FOOTNOTES:

1. Please refer to local regulations for available channel bandwidths.
2. Measured conductively in analog mode per TIA / EIA 603 under nominal conditions, and at 1 W Rated Audio for Rx. Selectivity measured using the TIA-603 single-tone method.
3. Measured conductively in digital mode per TIA / EIA IS 102.
4. Listed by UL to non-incendive standards: UL 121201 and CAN/CSA C22.2 No. 213-17 as safe for use in Class I, Division 2, Groups A,B,C,D; Class II, Division 2, Groups F,G; Class III Hazardous Locations.
5. Measured conductively with >6 satellites visible at a nominal -130 dBm signal strength. Specs provided are 95th percentile values.
6. LMR only. Front display, LTE, WiFi, Bluetooth and GPS not available when radio internal temperature is below -20 °C (-4 °F). Hi-capacity battery required for operation between -20 °C (-4 °F) and -30 °C (-22 °F). Batteries should be charged at 0 to +45 °C (+32 to +113 °F) and stored at +20 to +25 °C (+68 to +77 °F). Reference [motorolasolutions.com/batterycafe](https://motorolasolutions.com/batterycafe)

All specifications are subject to change without notice. For full details consult product service manual, document no. MN005643A01.



# ACCESSORIES

EXPAND AND CUSTOMIZE YOUR RADIO'S  
FUNCTIONALITY WITH BEST-IN-CLASS ACCESSORIES.

## AUDIO

HEAR AND BE HEARD  
LIKE NEVER BEFORE

### XV Remote Speaker Microphone

**PMMN4123**

- Loudest, clearest speaker
- Four digital microphones
- Enhanced windporting
- New adaptive noise suppression
- Dedicated ViQI button

## ANTENNAS

DESIGNED FOR WEARABILITY



**7/800MHz Stubby  
Antenna 65 mm  
(760-870 MHz)**

**AN000296A01**



**Whip All-band  
Antenna 200 mm  
(V,U,7/800MHz)**

**AN000297A01**

Colored antenna ID bands are available for easy customization and come in packs of 10.

- 32012144001 Gray
- 32012144002 Yellow
- 32012144003 Green
- 32012144004 Blue
- 32012144005 Purple

## CARRY

SECURE, EASY ACCESS



**Classic Holster**

**PMLN7947**



**Hybrid Leather Carry Case**

**PMLN7948**

Standard Capacity

**PMLN7964**

High Capacity

## ENERGY

MAXIMIZED POWER,  
LIFE AND MANAGEMENT



**IMPRES 2 Multi-Unit Charger**

**NNTN9115**



**IMPRES 2 Single-Unit Charger**

**NNTN9199**



**IMPRES 2 Standard Capacity Battery**

**NNTN9087**

3850mAh

**NNTN9088**

3850mAh UL Div 2 (see footnote 4)



**IMPRES 2 High Capacity Battery**

**NNTN9089**

5650mAh

**NNTN9090**

5650mAh UL Div 2 (see footnote 4)

For a complete list of accessories, please visit [motorolasolutions.com/apxnext](https://motorolasolutions.com/apxnext)

# MANAGED AND SUPPORT SERVICES

## ACHIEVE MISSION CRITICAL PERFORMANCE

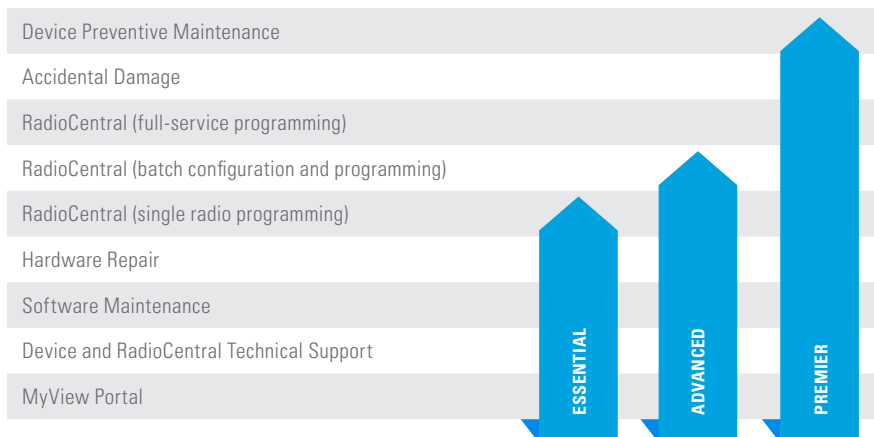
IN PUBLIC SAFETY, FOCUS IS YOUR GREATEST RESOURCE. APX NEXT PROTECTS YOUR FOCUS WHEN IT MATTERS MOST. YOUR MISSION-CRITICAL COMMUNICATIONS DEPEND ON THE CONSISTENT AVAILABILITY OF YOUR RADIOS.

Essential and Advanced Services provide the tools and expert support needed to efficiently manage your radio fleet. With Premier Services, you transfer your APX NEXT two-way radio operations to our managed services professionals who are focused on maximizing performance.

Rely on us to help you achieve your performance targets with the right service level you need for systems, devices and applications. Each package provides a higher level of support, transferring the risk and responsibility to Motorola Solutions.



### SERVICES PACKAGES AT-A-GLANCE



## PROTECT YOUR **FOCUS** WHEN IT MATTERS MOST

For more information, please visit  
[motorolasolutions.com/apxnext](https://motorolasolutions.com/apxnext)



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