



APX N70

SINGLE-BAND P25 SMART RADIO

FOCUSED. FORWARD.

Safety and focus on the front line are paramount. Reliable and intuitive communications devices that are rugged and easy to use, are non negotiable for first responders. Clear communications have proven to be lifesaving in critical moments.

Reliable P25 radios must evolve to offer sophisticated features that work within a larger public safety ecosystem. They must deliver actionable intelligence to provide increased situational awareness during an incident.

We designed our APX N70 explicitly for this purpose. It provides public safety personnel the mission-critical communications and real-time information they need to stay connected and respond safely.

Inherently rugged, it offers an intuitive interface to ensure reliable eyes-up operation. Wherever they're working, responders will hear and be heard with the loudest and clearest audio possible.

The APX N70 works reliably across a variety of frequencies, modes and protocols. Communications are secure with hardware encryption algorithms and can be updated quickly with batch radio programming and management tools. Optional next generation features such as LTE and smart apps enhance in-field intelligence for improved situational awareness so first responders can respond with focus and efficiency.



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 Connectivity¹

FREQUENCY BANDS

7/800 MHz

Up to 3000 Channels

Up to 200 Zones¹

ADDITIONAL CONNECTIVITY

Bluetooth (Version 5.0)

Wi-Fi 802.11 a/b/g/n/ac, 2.4 and 5 GHz Bands

LTE¹

NFC (Near-Field Communications)²

AUDIO FEATURES

3 W Speaker with Adaptive Equalization

2 Internal HDR Microphone

Adaptive Dual-sided Operation

Adaptive Noise Suppression Intensity¹

Adaptive Gain Control¹

Adaptive Windporting¹

IMPRES™ Audio Accessory Compatibility

Noise Sensing Volume Control¹

Receive Volume Leveling¹

MANAGEMENT

RadioCentral™

Radio Management (RM)

CPS (Customer Programming Software)

SmartProgramming¹

LOCATION-TRACKING

Built-in GNSS (GPS, Galileo and GLONASS)

SmartLocate and Indoor Positioning¹

SmartMapping¹

SECURITY

256-bit AES¹

Single-key ADP Encryption

Software Key

P25 Authentication¹

Multikey for up to 128 Keys and Multi-algorithm¹

Touchless Key Provisioning³

Over-The-Air Rekeying (OTAR)¹

HAZLOC¹

(WHEN USED WITH DIV1 BATTERY)

Class I - Division 1 Groups C, D; Division 2 Groups A, B, C, D

Class II - Division 1 Groups E, F, G; Division 2 Groups F, G

Class III - Hazardous Locations

MESSAGING

Canned Messages

SmartMessaging¹

VOICE INTERACTION

Customizable Voice Announcements

ViQi Voice Control: Radio Actions with Intuitive Commands¹

ViQi Virtual Partner Service¹

ENERGY

Standard 3200 mAh Battery

Optional High-cap 4400 mAh Battery

Optional UL Div 1 3650 mAh Battery

IMPRES 2 Smart Battery Technology

SENSORS

Ambient Light (Intelligent Lighting)

Accelerometer x2 (Display Orientation, Man Down)

OTHER FEATURES

Radio Profiles

Enhanced Data¹

Multicast Voting Scan¹

Man Down/Fall Alert¹

DVRS PSU¹

Digital Tone Signaling¹

APX Personnel Accountability¹

Instant Recall

INGRESS PROTECTION

IP6x Dust

IPx8 submersion (2 m, 4 hr)

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

USER INTERFACE

3.0" Mission-critical Touchscreen: 360x600 TFT 24-bit Full Color Transflective Display

Capacitive Touch Technology: Usable with Gloves Up to 4 mm Thick, Resistant to False Actuation from Fresh or Saltwater, 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: 1.26 x 0.55 in (32 x 14 mm)

16-position Channel Selector

Angled Power/Volume Knob

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

6 Programmable Buttons Under Display

DIMENSIONS

Radio with Standard Battery, no Antenna

Height: 5.4 in (136 mm)

Width: 2.4 in (60 mm)

Depth: 1.7 in (44 mm)

Weight: 17.4 oz (493 g)

Footnotes

¹ Optional Feature

² Hardware-ready

³ Included with use of OTAR combined with RadioCentral Feature list subject to change without notice



PERFORMANCE

TRANSMITTER

| | Note | 700 MHz | 800 MHz |
|---|------|----------------------|----------------------|
| Frequency Range / Bandsplits | - | 762-776, 792-806 MHz | 806-825, 851-870 MHz |
| Channel Spacing | - | 12.5 / 20 / 25 kHz | 12.5 / 20 / 25 kHz |
| Maximum Frequency Separation | - | Full Bandsplit | Full Bandsplit |
| Rated RF Output Power (Adjustable) | 1 | 1-2.5 W | 1-3 W |
| Frequency Stability (-30 °C to +60 °C; +25 °C Ref.) | 1 | ±1.0 ppm | ±1.0 ppm |
| Modulation Limiting (12.5 / 20 / 25 kHz Channel) | 1 | ±2.5 / ±4 / ±5 kHz | ±2.5 / ±4 / ±5 kHz |
| Emissions (Conducted and Radiated) | 1 | -75 dBc | -75 dBc |
| Audio Response | 1 | +1, -3 dB | +1, -3 dB |
| FM Hum and Noise (12.5 / 25 kHz Channel) | - | -47 / -52 dB | -47 / -52 dB |
| Audio Distortion (12.5 / 25 kHz Channel) | 1 | 1.00% | 1.00% |

RECEIVER

| | Note | 700 MHz | 800 MHz |
|---|------|----------------------|--------------------|
| Frequency Range / Bandsplits | - | 762-776, 799-806 MHz | 851-870 MHz |
| Channel Spacing | - | 12.5 / 20 / 25 kHz | 12.5 / 20 / 25 kHz |
| Maximum Frequency Separation | - | Full Bandsplit | Full Bandsplit |
| Audio Output Power at Rated | - | 1 W / 3 W | 1 W / 3 W |
| Frequency Stability (-30 °C to +60 °C; +25 °C Ref.) | 1 | ±1.0 ppm | ±1.0 ppm |
| Analog Sensitivity (12 dB SINAD) | 2 | 0.25 µV | 0.25 µV |
| Digital Sensitivity (1% BER) | 3 | 0.375 µV | 0.375 µV |
| Digital Sensitivity (5% BER) | 3 | 0.24 µV | 0.24 µV |
| Selectivity (12.5 / 25 kHz Channel) | 1 | -61.3 / -75.2 dB | -61.3 / -75.2 dB |
| Intermodulation Rejection | - | 80/78 dB | 80 dB |
| Spurious Rejection | - | 76.6 dB | 76.6 dB |
| FM Hum and Noise (12.5 / 25 kHz Channel) | - | -51 / -55 dB | -51 / -55 dB |
| Audio Distortion | - | 1.00% | 1.00% |

IMPRES™ 2 BATTERIES

| | Footnote | Part No | Capacity | Availability |
|---------------|----------|----------|----------|--------------|
| Standard | - | PMNN4816 | 3200mAh | Included |
| HAZLOC | 4 | PMNN4818 | 3650mAh | Optional |
| High Capacity | - | PMNN4817 | 4400mAh | Optional |

ENCRYPTION

| | |
|-------------------------------------|--|
| Supported Encryption Algorithms | ADP, AES-256, DES, DES-XL, DES-OFB, DVP-XL, Localized Algorithm |
| Encryption Algorithm Capacity | 8 |
| Encryption Keys per Radio | 1024 Keys, Programmable for 64 Common Key References (CKR) , upgradable to 128 CKRs, or 16 Physical Identifiers (PID) |
| Encryption Keying | Local Key Loader and Over-the-Air Rekeying (OTAR) |
| Synchronization | XL - Counter Addressing 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 140-3 Level 1 and Level 3, FIPS 197 |
| Device Certificates | x.509v3 ECC-P384, x.509v3 RSA-2048 |
| Cipher Suites FIPS 140-2 Level 1 | ECDHE_ECDSA_WITH_AES256_GCM_SHA384 TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384 TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA TLS_RSA_WITH_AES_256_GCM_SHA384 SRTP_AEAD_AES_256_GCM1 |

LOCATION TRACKING

| | Footnote | |
|----------------------|----------|----------------------------|
| Constellations | - | GPS, GLONASS and Galileo |
| Tracking Sensitivity | - | -159 dBm |
| Accuracy | 5 | <5m (95%) |
| Cold Start | 5 | <60 Seconds (95%) |
| Hot Start | 5 | <5 Seconds (95%) |
| Mode | - | Autonomous (Assisted Only) |

WIRELESS

| LTE | Footnote | |
|-----------------|----------|------------------------------------|
| Bands Supported | - | 2, 4, 12, 13, 14, 17 |
| Device Category | - | 4 |
| Certifications | 6 | FirstNet®, Verizon®, Bell Mobility |

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

| | Standard | Upgrade |
|-----------------------------------|---|---|
| Audio Output Power at Rated | 1 W | 3 W |
| Audio Output Power at Max | 3 W | 5 W |
| Audio Response (EIA) | +1, -3 dB | +1, -3 dB |
| Speech Loudness at 12 in (300 mm) | 102 phon | 105 Phon |
| Audio Features | Adaptive Dual-sided Operation Adaptive Equalization Adaptive Gain Control IMPRES Audio | Adaptive Noise Suppression Intensity Adaptive Windporting Noise Sensing Volume Control Receiving Volume Leveling |

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 | 7 | -30 to +60 °C (-22 to +140 °F) |
| Storage Temperature | 7 | -40 to +85 °C (-40 to +185 °F) |
| Humidity | - | Per MIL-STD 810 |
| ESD | - | IEC 61000-4-2 |
| Dust Resistance | - | IP6X |
| Water Resistance (Submersion) | - | IPX8 (2 meters, 4 hours) MIL-STD Delta-T, 512.X Procedure 1 |

REGULATORY

| | |
|--------------------------|---|
| FCC ID | AZ489FT7147 |
| IC ID | 109U-89FT7147 |
| 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 - 1910 MHz), Modulation: *G7D, *D7W Band 4 (1710.7 - 1755 MHz), Modulation: *G7D, *D7W Band 12 (699.7 - 716 MHz), Modulation: *G7D, *D7W Band 13: (777-787 MHz), Modulation *G7D, D7W Band 14 (788 - 798 MHz), Modulation: *G7D, *D7W Band 17 (704 - 716 MHz), Modulation: *G7D, *D7W |
| Single-band Model Number | H35UCT9PW8AN |

1. Measured in the analog mode per TIA / EIA 603 under nominal conditions. Selectivity reflects newer 2-tone test method as defined in revision D TIA603-D issued in 2010
2. Measured conductively in analog mode per TIA / EIA 603 under nominal conditions.
3. Measured conductively in digital mode per TIA / EIA IS 102.CAAA under nominal conditions.
4. Listed by UL to the standards ANSI/TIA 4950-A and CAN/CSA C22.2 NO. 157-92 Classification Rating: Class I, Division 1, Groups C, D; Class II, Division 1, Group E, F, G; Class III, Hazardous (Classified) Locations. ANSI/ISA 12.12.01-2015 and CAN/CSA C22.2 No. 213-15; Class I, Division 2, Groups A, B, C, D; T3C
5. Measured conductively with >6 satellites visible at a nominal -130 dBm signal strength. Specs provided are 95th percentile values.
6. SIM cards for the listed carriers can be pre-installed at Motorola Solutions factory or supplied by the end user via Bring Your Own SIM (BYOS) for certified carriers.
7. LMR only. Front display, LTE, Wi-Fi, Bluetooth and GPS not available when radio internal temperature is below -20 °C (-4 °F). Hi-capacity or TIA-4950 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/batteryare

All specifications are subject to change without notice.



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