



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

HAZLOC

Class I, Division 1, Groups C, D
Class II, Division 1, Groups E, F, G
Class III, Hazardous Locations
Class I, Division 2, Groups A, B, C, D when used with 3650 mAh Div 1 Battery

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
Frequency Stability (-30 °C to +60 °C; +25 °C Ref.)	1	1 W / 3 W	1 W / 3 W
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)	-	-47 / -53 dB	-47 / -53 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
Bands (Hardware Ready)	-	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 801 - 2 kV
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
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). 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/batterycare

All specifications are subject to change without notice.



For more information on APX N70, please visit: motorolasolutions.com/APXN70



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