Data Sheet

APX NEXT

In public safety, focus is your greatest resource. Make sure it's protected with APX NEXT®

MOTOROLA SOLUTIONS

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 gorilla glass touchscreen works with or without gloves—in rain, dirt, and dust. High dynamic microphones and a high-power speaker deliver high quality audio, 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 within 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 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 smart applications 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 with a cloud based provisioning system that prepares radios before they arrive. Remote updating keeps radios in the field, with zero touch and zero downtime. CustomerHub 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

Dimensions above are with a standard battery

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
- Available in multi-band and single-band configurations
- Up to 3000 channels
- Up to 125 zones

ADDITIONAL CONNECTIVITY

Bluetooth®	**AN model:** 5.0
	BN model: 5.2
NFC (near-field communications)	
WiFi	**AN model:** 2.4 and 5 GHz bands 802.11a/b/g/n/ac
	BN model: 6E (2.4, 5 and 6 GHz bands) 802.11 a/b/g/n/ac/ax
4G LTE	**AN model:** FirstNet, Verizon and Bell Mobility certified
	BN model: FirstNet, Verizon, T-Mobile and Bell Mobility certified
5G SA	**AN model:** n/a
	BN model: Verizon and T-Priority certified
eSIM	**AN model:** n/a
	BN model: Verizon
Dual SIM	**AN model:** n/a
	BN model: hardware ready**
LEO (Low Earth Orbit) satellite connectivity	**AN model:** n/a
	BN model: hardware ready **

*Optional feature **Hardware-ready ***Included with OTAR

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
- Intelligent noise reduction

MANAGEMENT

- RadioCentral™*
- SmartProgramming*
- Radio management*

LOCATION-TRACKING

- Built-in GNSS (GPS, Galileo, GLONASS) and A-GPS
- SmartLocate and Indoor Positioning*
- Mission-critical Geofence**
- SmartMapping*

SECURITY

- 256-bit AES*
- Single-key ADP encryption*
- Software key
- P25 Authentication*
- Multikey for 128 keys and multi-algorithm*
- Over-the-air keyloading***
- 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
SmartMessaging*

USER INTERFACE

3.6” Mission-critical touchscreen: 800x480 TFT 24-bit full color transflective display, 1 mm Corning® Gorilla® 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 Corning® Gorilla® 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
ViQi: radio operation with intuitive commands*
SmartQuery*
SmartTranslate*

*Optional Feature

IMPRES™ 2 BATTERIES

	NOTE	PART NO	CAPACITY	AVAILABILITY
Standard	7	NNTN9216	4400 mAh	Included
Standard HazLoc	7	NNTN9217	4400 mAh	Optional
Hi-Cap		PMNN4895	5550 mAh	Optional
Hi-Cap HazLoc		PMNN4896	5550 mAh	Optional

SENSORS

Ambient light
Two accelerometers (Display Orientation, Man Down / Fall Alert)
Magnetometer (eCompass)

OTHER FEATURES

Radio profiles
Enhanced data*
Multicast voting scan*
Man Down / Fall Alert*
DVRS PSU*
Digital tone signaling*

DIMENSIONS

APX NEXT radio with standard battery, no antenna	Height: 5.4 in (138mm) Width: 2.5 in (63 mm) Depth: 1.7 in (43 mm) Weight **(AN)**: 18.5 oz (525 g) **(BN)**: 18.9 oz (536 g)
APX NEXT with Hi-cap battery, no antenna	Height: 6.0 in (153 mm) Width: 2.5 in (63 mm) Depth: 1.7 in (43 mm) Weight **(AN):** 19.6 oz (556 g) **(BN):** 20.0 oz (567 g)

AN radio performance

TRANSMITTER						
	NOTE	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						
	NOTE	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 uV (-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) (one-tone)	2	77 / 84 dB	74 / 81 dB	74 / 81 dB	72 / 80 dB	72 / 79 dB
Selectivity (12.5/25 kHz channel) (two-tone)	2	62/84 dB	61/81 dB	61/81 dB	60/80 dB	60/79 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%

BN radio performance

TRANSMITTER						
	NOTE	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	-56 / -57 dB	-53 / -56 dB	-52 / -56 dB	-52 / -54 dB	-49 / -54 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						
	NOTE	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 uV (-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) (two-tone)	2	62/84 dB	62/81 dB	62/81 dB	61/80 dB	61/79 dB
Intermodulation rejection	2	82 dB	80 dB	80 dB	82 dB	82 dB
Spurious rejection	2	98 dB	95 dB	95 dB	98 dB	98 dB
FM hum and noise (12.5 / 25 kHz channel)	2	59 / 64 dB	55 / 60 dB	55 / 60 dB	53 / 58 dB	53 / 58 dB
Audio distortion	2	0.90%	0.90%	0.90%	0.90%	0.90%

ENCRYPTION	
Supported encryption algorithms	ADP, 256-bit 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, 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

COLOR	
Standard color	Black/gray

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 Adaptive dual-sided operation Adaptive noise suppression intensity Adaptive gain control Adaptive windporting IMPRES audio Intelligent noise reduction

WIRELESS	
MOBILE BROADBAND	**NOTE**
Bands supported	**AN model:** B2, B4, B12, B13, B14, B17 B5 (hardware ready)
	BN model: B2, B4, B5, B12, B13, B14, B17, B25, B66, B71 5G: (SA Only): n2, n5, n25, n41, n66, n71, n77, n78
Device category	4
Certifications	**AN model:** 4G LTE with FirstNet, Verizon and Bell Mobility certified
	BN model: 4G LTE with FirstNet, Verizon, T-Priority and Bell Mobility certified. 5G SA with Verizon and T-Mobile.
WIFI	
Standards supported	**AN model:** 802.11a/b/g/n/ac
	BN model: 802.11 a/b/g/n/ac/ax
Frequency range	**AN model:** 2400-2472, 5180-5825 MHz
	BN model: 2400-2472, 5180-5825, 5925-7125 MHz
Security	Supports WPA-2, WPA, WEP
Capacity	Up to 20 SSIDs
BLUETOOTH	
Version	**AN model:** 5.0
	BN model: 5.2
Frequency range	2402 - 2480 MHz
Security	128-bit AES-CCM Encryption

LOCATION-TRACKING		
		NOTE
Constellations	-	GPS, Galileo, GLONASS, A-GPS
Tracking sensitivity	-	-159 dBm
Accuracy	6	<5m (95%)
Cold start	6	<60 seconds (95%)
Hot start	6	<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

	NOTE	
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	**AN model:** AZ489FT7119
	BN model: AZ489FT7184
IC ID	**AN model:** 109U-89FT7119
	BN model: 109U-89FT7184
LMR	8K10F1D, 8K10F1E, 8K10F1W, 11K0F3E, 16K0F3E, 20K0F1E
Bluetooth	1M18G1D, 1M1F1D, 2M1F1D
WiFi	12M9G1D, 16M7D1D, 17M9D1D, 36M2D1D, 17M5D1D, 18M4D1D, 36M8D1D, 76M1D1D
All-band model number	**AN model:** H55TGT9PW8AN
	BN model: H55TGT9PW8BN

[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 was measured using the TIA-603 single-tone and TIA-603 2.1.6 two-tone ACR methodology for the AN radio model. Selectivity was measured using the TIA-603 2.1.6 two-tone ACR methodology for the BN radio model..

[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] SIM cards for the listed carriers can be pre-installed at the Motorola Solutions factory or supplied by the end user via Bring Your Own SIM (BYOS) for certified carriers.

[6] Measured conductively with >6 satellites visible at a nominal -130 dBm signal strength. Specs provided are 95th percentile values.

[7] LMR only. Front display, LTE, WiFi, Bluetooth and GPS not available when radio internal temperature is below -20 °C (-4 °F). Standard capacity (NNTN9216B or NNTN9217B) 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/batterycare**

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

The APX NEXT AN hardware does not support field upgrades to T-Mobile, 5G, eSIM/Dual SIM or LEO satellite connectivity.

Managed and support services

Achieve mission critical 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.

Motorola Solutions provides a range of service capabilities, including:

Customer Hub

A web-based platform that gives you a transparent, single source view of fleet status and service delivery information to help make smarter, faster and more proactive decisions.

Technical support

Industry certified technical engineers can troubleshoot and provide prompt resolution to any technical issues, whether on-site dispatch or remote.

Hardware repair and software maintenance

Ensure continuous security, performance and enhanced functionality of your two-way radios by getting access to APX NEXT certified and tested release software updates and upgrades and protect your radios from normal wear and tear.

Accidental damage

Radios are protected from accidental breakage or liquid spills and physical damage. With state-of-the-art diagnostic equipment all of your agency's radio components are protected in the event of an unexpected failure and are back in operation as soon as possible.

Device programming

APX NEXT includes Customer Programming Software (CPS) for one-at-a-time programming. We can enable batch programming for radios with centralized management with RadioCentral to dramatically reduce the time and resources needed to provision and update your radio fleet.

As an add-on service, our technical teams can help you provision and program your fleet of radios on-site and train your staff on the radio fleet commissioning and management.

Preventive maintenance

Our certified technicians conduct annual maintenance checks to help extend the useful life of your radios, reducing repair and replacement costs.

To learn more, visit:
www.motorolasolutions.com/apxnext

MOTOROLA SOLUTIONS

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This device is only available in North America and APAC regions.