Data Sheet

APX NEXT

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 gorilla glass touchscreen works with or without gloves—in rain, dirt, and dust. high dynamic microphones 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 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.

MOTOROLA SOLUTIONS

Mission-critical design

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 (Version 5.0)

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

LTE (FirstNet®, Verizon and Bell Mobility-certified)

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

Intelligent Noise Reduction

MANAGEMENT

RadioCentral™*

SmartProgramming*

Radio Management*

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

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

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 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

ViQi: Radio Operation with Intuitive Commands*

ENERGY

Standard 4400 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 / Fall Alert*

DVRS PSU*

Digital Tone Signaling*

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						
	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)	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				
	NOTE	PART NO	CAPACITY	AVAILABILITY
Standard	-	NNTN9216	4400 mAh	Included
Standard HazLoc	4	NNTN9217	4400 mAh	Optional

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
OPTIONAL SIDE PANEL COLORS (SUPPLIED AS RETRO-FIT KITS)	
HN001451A02	GCAI Side, Red
HN001451A03	GCAI Side, Blue
HN001451A04	GCAI Side, Coyote Brown
HN001451A05	GCAI Side, Yellow
HN001451A06	GCAI Side, Orange
HN001451A07	GCAI Side, Impact Green
HN001452A02	PTT Side, Red
HN001452A03	PTT Side, Blue
HN001452A04	PTT Side, Coyote Brown
HN001452A05	PTT Side, Yellow
HN001452A06	PTT Side, Orange
HN001452A07	PTT Side, Impact Green

WIRELESS		
LTE	NOTE	
Bands Supported	-	2, 4, 12, 13, 14, 17
Bands (Hardware Ready)	-	5
Device Category	-	4
Certifications	5	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	
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

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 ºC (-22 to +140 ºF)
Storage Temperature	7	-40 to +85 ºC (-40 to +185 ºF)
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	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 Band 4 (1710.7 - 1745 MHz), Modulation: *G7D, *D7W Band 12 (699.7 - 711 MHz), Modulation: *G7D, *D7W Band 14 (788 - 798 MHz), Modulation *G7D, *D7W Band 17 (704 - 716 MHz), Modulation: *G7D, *D7W
All-band Model Number	H55TGT9PW8AN

[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] 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 ºC (-4 ºF). Batteries should be charged at 0 to +45 ºC (+32 to +113 ºF) and stored at +20 to +25 °C (+68 to +77 ºF) . 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.

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 RadioManagement 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

Motorola Solutions, Inc. 500 West Monroe Street, Chicago, IL 60661 U.S.A. **motorolasolutions.com**

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