



CITY OF DEL REY OAKS

Staff Report

DATE: January 24th, 2023

TO: Honorable Mayor and Members of City Council

FROM: Chris Bourquin, Interim Chief of Police

SUBJECT: Motorola Portable Radio Purchase

CEQA: This action does not constitute a “project” as defined by the California Environmental Quality Act (CEQA) guidelines section 15378 as it is an administrative activity of the City that will not result in direct or indirect physical changes in the environment.

Recommendation

Approve the purchase of six(6) APX Next radios to support public safety communications

Background

January 1st, 2013, was the date set by the FCC that required Monterey County Law Enforcement agencies to narrowband. This FCC order was meant to increase efficiency. As a result of the pending requirement, The County of Monterey made the decision to move from an analog system to a digital trunked system. Monterey County ITD implemented the Next Generation Emergency Network (NGEN) project. In 2011, Monterey County agencies purchased radios from Harris Corporation in anticipation of the change required by the project. On June 1st, 2017, Monterey County Communications along with all partnering agencies, transitioned from an analog to a digital system for police radio traffic. The Del Rey Oaks Police Department has continued to use those radios purchased in 2011 as well as hand-me-downs from our partners agencies who have already transitioned to Motorola. Our current Harris radios are end of life and must be replaced.

Summary & Discussion

Most, if not all municipal and county agencies have moved from Harris to Motorola. Upgrades to the County NGEN system will likely be based on Motorola radio capabilities and the Monterey County radio shop, who manages and programs radios under NGEN, will easily be able to provide that service to us.

Fiscal Impacts

The cost to implement this project will be \$62,735.00. The money to pay for the project will come from ARPA funds previously received by the City of Del Rey Oaks.

ATTACHMENTS:

Motorola Quote 1940471

Motorola Lease / Purchase Agreement

Respectfully Submitted,

Chris Bourquin
Interim Chief of Police



Quote Number: QUOTE-1940471

Billing Address:
DEL REY OAKS POLICE DEPT
650 CANYON DEL REY RD
DEL REY OAKS CA, 93940

Quote Date: 2022-11-02
Expiration Date: 2023-01-01
Contract Name: 36273 - SOURCEWELL

Quote Created By:
Jim Trevino
Motorola Manufacture Representative
jtrevino@daywireless.com
408-640-9861

Customer: DEL REY OAKS POLICE DEPT
Contact Name: Chris Bourquin

Currency: USD

Terms and Conditions: Net 30 Days

Line #	Item Number	Description	Quantity	Term	Unit List Price	Ext. List Price	Discount %	Discount \$	Unit Sale Price	Ext. Sale Price	APC
	APX™ NEXT										
1	H45TGT9PW8AN	APX NEXT SINGLE BAND MODEL 4.5 PORTABLE.	6		\$6,641.00	\$39,846.00	27.00%	\$1,793.07	\$4,847.93	\$29,087.58	0142
1a	QA00569AP	ADD: 7/800MHZ BAND.	6		\$0.00	\$0.00	0.00%	\$0.00	\$0.00	\$0.00	0142
1b	QA00570AW	ADD: VHF BAND+.	6		\$800.00	\$4,800.00	27.00%	\$216.00	\$584.00	\$3,504.00	0142
1c	BD00001AA	ADD: CORE BUNDLE.	6		\$3,106.00	\$18,636.00	27.00%	\$838.62	\$2,267.38	\$13,604.28	0142
1d	H499KC	ENH: SUBMERSIBLE (DELTA T).	6		\$0.00	\$0.00	0.00%	\$0.00	\$0.00	\$0.00	0142
1e	H38DA	ADD: SMARTZONE OPERATION.	6		\$0.00	\$0.00	0.00%	\$0.00	\$0.00	\$0.00	0142
1f	Q806CH	ADD: ASTRO DIGITAL CAI OPERATION.	6		\$0.00	\$0.00	0.00%	\$0.00	\$0.00	\$0.00	0142
1g	Q361CD	ADD: P25 9600 BAUD TRUNKING.	6		\$0.00	\$0.00	0.00%	\$0.00	\$0.00	\$0.00	0142
1h	QA09028AA	ADD: VIQI VC RADIO OPERATION.	6		\$0.00	\$0.00	0.00%	\$0.00	\$0.00	\$0.00	0142
1i	QA03399AK	ADD: ENHANCED DATA.	6		\$0.00	\$0.00	0.00%	\$0.00	\$0.00	\$0.00	0142
1j	Q387CB	ADD: MULTICAST VOTING SCAN.	6		\$0.00	\$0.00	0.00%	\$0.00	\$0.00	\$0.00	0142
1k	QA00580BA	ADD: TDMA OPERATION.	6		\$0.00	\$0.00	0.00%	\$0.00	\$0.00	\$0.00	0142
1l	QA09001AM	ADD: WIFI CAPABILITY.	6		\$0.00	\$0.00	0.00%	\$0.00	\$0.00	\$0.00	0142
1m	BD00010AA	ADD: SECURITY BUNDLE.	6		\$1,023.00	\$6,138.00	27.00%	\$276.21	\$746.79	\$4,480.74	0142
1n	QA01767BL	ADD: P25 LINK LAYER AUTHENTICATION.	6		\$0.00	\$0.00	0.00%	\$0.00	\$0.00	\$0.00	0142
1o	Q498BN	ENH: ASTRO 25 OTAR W/ MULTIKEY.	6		\$0.00	\$0.00	0.00%	\$0.00	\$0.00	\$0.00	0142
1p	H797DW	ENH: DVP-XL ENCRYPTION AND ADP.	6		\$0.00	\$0.00	0.00%	\$0.00	\$0.00	\$0.00	0142
1q	Q15AU	ADD: AES/DES-XL/DES-OFB ENCRYPTION AND ADP.	6		\$0.00	\$0.00	0.00%	\$0.00	\$0.00	\$0.00	0142
1r	QA09030AA	ADD: MOTOROLA HOSTED RADIOCENTRAL W CPS.	6		\$0.00	\$0.00	0.00%	\$0.00	\$0.00	\$0.00	0142
1s	H637AA	ADD: APX NEXT DMS BUNDLE PROMO.	6		-\$22.95	-\$137.70	0.00%	\$0.00	-\$22.95	-\$137.70	0142
1t	H636AB	ADD: APX NEXT APPLICATION BUNDLE PROMO.	6		-\$300.00	-\$1,800.00	0.00%	\$0.00	-\$300.00	-\$1,800.00	0142
1u	H638EA	ADD: SMART LOCATE MAPPING TRIAL PROMO.	6		-\$56.00	-\$336.00	0.00%	\$0.00	-\$56.00	-\$336.00	0142
1v	QA09017AA	ADD: LTE WITH ACTIVE SERVICE AT&T US.	6		\$0.00	\$0.00	0.00%	\$0.00	\$0.00	\$0.00	0142
2	SSV01P01407B	SMARTPROGRAMMING PROMO.	6	1 YEAR	\$75.00	\$450.00	0.00%	\$0.00	\$75.00	\$450.00	0712
3	SSV01P01476A	SMARTLOCATE PROMO.	6	1 YEAR	\$75.00	\$450.00	0.00%	\$0.00	\$75.00	\$450.00	0712
4	SSV01P01902A	SMARTMAPPING PROMO.	6	1 YEAR	\$75.00	\$450.00	0.00%	\$0.00	\$75.00	\$450.00	0712
5	SSV01P01901A	SMARTMESSAGING PROMO.	6	1 YEAR	\$75.00	\$450.00	0.00%	\$0.00	\$75.00	\$450.00	0712
6	SSV01P01685B	ELIGIBLE FOR PROMO - CC AWARE STARTER.	6	1 YEAR	\$56.00	\$336.00	0.00%	\$0.00	\$56.00	\$336.00	0612

7	LSV01P01414A	APX NEXT DMS ADVANCED SERVICE- PROMO.	6	12 MONTHS	\$68.88	\$413.28	0.00%	\$0.00	\$68.88	\$413.28	0724
8	PSV01S01742A	RADIOCENTRAL TRAINING VIRTUAL (1 SEAT).	1		\$1,700.00	\$1,700.00	0.00%	\$0.00	\$1,700.00	\$1,700.00	0943
9	PSV00S01424A	APX NEXT PROVISIONING.	1		\$0.00	\$0.00	0.00%	\$0.00	\$0.00	\$0.00	0700
10	PSV01S02940A	SMARTMAPPING ENABLEMENT.	1		\$0.00	\$0.00	0.00%	\$0.00	\$0.00	\$0.00	0712
11	PSV01S02941A	SMARTMESSAGING ENABLEMENT.	1		\$0.00	\$0.00	0.00%	\$0.00	\$0.00	\$0.00	0712
12	PSV01S02944A	PROVISIONING SUPPORT.	1		\$0.00	\$0.00	0.00%	\$0.00	\$0.00	\$0.00	0712
	Standalone Items										
13	NNTN9199A	IMPRES 2 SUC, 3.0A, 120VAC, TYPE A PLUG, NA.	6		\$169.56	\$1,017.36	20.01%	\$33.93	\$135.63	\$813.78	0785
14	NNTN9115A	CHARGER, MULTI-UNIT, IMPRES G2, 6-DISP, US/NA/CA/LA PLUG, ACC-CHARGER.	1		\$1,420.20	\$1,420.20	15.00%	\$213.03	\$1,207.17	\$1,207.17	0414
	Standalone Items										
15	PMMN4136B	ACCESSORY KIT,XVP830 REMOTE SPEAKER MICROPHONE, NO CHANNEL KNOB.	6		\$486.00	\$2,916.00	20.01%	\$97.25	\$388.75	\$2,332.50	0372

Net Total \$57,005.63

Estimated Tax \$5,273.02

Estimated Freight \$456.05

Grand Total \$62,734.70

Services & Subscriptions

Item Number	Description	Quantity	Unit Recurring Sale Price	Recurring Sale Price	Term	Ext. Sale Price
SSV01P01407B	SMARTPROGRAMMING PROMO	6	\$75.00	\$450.00	1 YEAR	\$450.00
SSV01P01476A	SMARTLOCATE PROMO	6	\$75.00	\$450.00	1 YEAR	\$450.00
SSV01P01902A	SMARTMAPPING PROMO	6	\$75.00	\$450.00	1 YEAR	\$450.00
SSV01P01901A	SMARTMESSAGING PROMO	6	\$75.00	\$450.00	1 YEAR	\$450.00
SSV01P01685B	ELIGIBLE FOR PROMO - CC AWARE STARTER	6	\$56.00	\$336.00	1 YEAR	\$336.00
LSV01P01414A	APX NEXT DMS ADVANCED SERVICE- PROMO	6	\$68.88	\$413.28	1 YEAR	\$413.28



Date: November 3,2022

To: Del Rey Oaks Police Dept
Attn: Chris Bourquin
650 Canyon Del Rey Rd
Del Rey Oaks, CA 93940

Re: Communications System Financing Proposal

Motorola Solutions, Inc. is pleased to submit the following proposal for the financing of your Motorola communications equipment in accordance with the terms and conditions outlined below:

Transaction Type: Municipal Lease Purchase Agreement (Tax-exempt)

Lessor: Motorola Solutions, Inc. (or its Assignee)

Lessee: Del Rey Oaks Police Dept

Total Transaction Value: \$ 62,735.00

Down Payment: \$ 0.00

Balance to Finance: \$ 62,735.00

Equipment: New Motorola APX Next radios to support public safety Communications (As per the Motorola Solutions equipment proposal.)

Title: Title to the equipment will vest with the Lessee.

Insurance: Lessee will be responsible to insure the equipment as outlined in the lease contract.

Taxes: Personal property, sales, leasing, use, stamp, or other taxes are for the account of the Lessee.

	Option 1	Option 2	Option 3
<i>Lease Term</i>	1 Years	3 Years	5 Years
<i>Payment type</i>	Annually Arrears	Annually Arrears	Annually Arrears
<i>Lease Rate</i>	8.15%	6.93%	6.58%
<i>Lease Factor</i>	1.084614	0.382127	0.242470
<i>Payment</i>	\$68,043.26	\$23,972.74	\$15,211.36
<i>Start</i>	First payment due one year after contract execution	First payment due one year after contract execution	First payment due one year after contract execution

Expiration: The above lease rates and factors are valid for all leases commenced by 12/3/2022. After this date the rate will be reset to reflect current market conditions.

Program Highlights:

- Terms up to seven years can be structured for Municipal Lease Purchase Agreement (Tax-exempt).
- One hundred percent (100%) of a project's acquisition cost can be financed.
- Payment frequency can be matched to meet your cash flow and budget requirements.
- No pre-payment penalties.
- Future equipment upgrades can easily be accommodated via add-on lease schedules, restructuring already existing deals, etc.

Qualifications:

- Receipt of a properly executed documentation package.
- Lessee qualifies as a political subdivision or agency of the State as defined in the Internal Revenue Code of 1986. The interest portion of the Lease Payments shall be excludable from the Lessor's gross income pursuant to Section 103 of the Internal Revenue Code.
- Receipt of a copy of the last 2 year's audited financial statements and current year's budget from the Lessee.
- This proposal should not be construed as a commitment to finance. It is subject to final credit approval.

Documentation: Municipal Equipment Lease Purchase Agreement
 Opinion of Counsel
 Schedule A/Equipment List
 Schedule B/Amortization Schedule
 8038G
 UCC-1
 Certificate of Incumbency
 Statement of Essential Use/Source of Funds
 Evidence of Insurance or Statement of Self Insurance
 Resolution from governing body authorizing the execution of the Lease
 Delivery & Acceptance Certificate

Please feel free to contact me if there are any questions, or if an alternate structuring is required.

Regards,
Jim Trevino
Senior Account Manager
+1 (408) 640-9861

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 4400 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

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, & 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

MANAGEMENT

RadioCentral™

SmartProgramming*

SmartInsight* Preview

LOCATION-TRACKING

Built-in GNSS (GPS and GLONASS)

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 Key Loading***

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 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 with Intuitive Commands*

Virtual Partner Service*

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*

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

	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	-	NNTN9216	4400 mAh	Included
High Capacity	-	NNTN9089	5650 mAh	Optional
Standard HazLoc	4	NNTN9217	4400 mAh	Optional
High Capacity HazLoc	4	NNTN9090	5650 mAh	Optional

ENCRYPTION

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 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 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)	Red, Blue, Orange, Public Safety Yellow, High Impact Green, Coyote Brown

WIRELESS

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

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

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.

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 (790.5 - 793 MHz), Modulation: *G7D, *D7W
All-band Model Number	H55TGT9PW8AN
Single-band Model Number	H45TGT9PW8AN

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://www.motorolasolutions.com/batterycafe)

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

ACCESSORIES

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FUNCTIONALITY WITH BEST-IN-CLASS ACCESSORIES.

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XV Remote Speaker Microphone

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- Four digital microphones
- Enhanced windporting
- New adaptive noise suppression
- Dedicated ViQi button

ANTENNAS

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

AN000296A01



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

AN000297A01

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

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

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

NNTN9126

4400 mAh

NNTN9127

4400 mAh UL Div 2 (see footnote 4)



IMPRES 2 High Capacity Battery

NNTN9089

5650 mAh

NNTN9090

5650 mAh UL Div 2 (see footnote 4)

For a complete list of accessories, please visit motorolasolutions.com/apxnext

MANAGED AND SUPPORT SERVICES

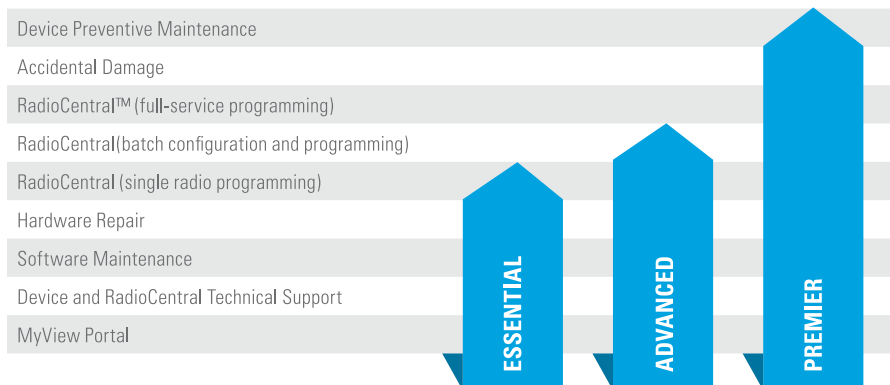
ACHIEVE MISSION CRITICAL PERFORMANCE

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 AT - A - GLANCE



Note:

- Accidental damage can be offered as an add-on service with Essential and Advanced packages.
- Device management training can be offered as an add-on service with all three packages.



PROTECT YOUR **FOCUS** WHEN IT MATTERS MOST

For more information, please visit
motorolasolutions.com/apxnext



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