



UNITY[®] XG-100P PORTABLE FULL-SPECTRUM MULTIBAND

EXCEPTIONAL OPERATION FOR CRITICAL COMMUNICATIONS

The Unity XG-100P full-spectrum multiband radio delivers unprecedented interoperability, ease of use, and advanced capabilities. By supporting both digital P25 secure and analog conventional communications across the VHF, UHF, and 700/800 MHz bands in a single radio, first responders can communicate across multiple jurisdictions and agencies operating on multiple frequencies and systems.

FEATURES

Built-in GPS provides user geographical location effortlessly at no additional cost.

Designed to scan continuously across all bands, voice modes, and encryption types, the XG-100P provides users exceptional capability and interoperability in a rugged radio.

Bluetooth[®] is included as standard for interfacing with wireless audio accessories.

The 2-position and 3-position concentric switches allow access to 48 talkgroups/channels directly from the top of the radio while toggling between clear and secure modes.

NEXT GENERATION USER INTERFACE

The user-centric design of the XG-100P offers significant capability and flexibility beyond push-to-talk.

- Intuitive menu-driven graphical user interface with full-color display
- Large 5-way navigation key and soft keys
- User-defined switch
- Large knobs and configurable top display
- Front-panel programming

RUGGED FOR FIELD USE

This rugged portable is engineered to provide reliable and dependable communications in mission critical conditions. The XG-100P meets MIL-STD-810G standards for durability and immersion.

FUTURE READY

The XG-100P is a safe investment that agencies can rely on as transitions occur to P25 technology. The radio supports wideband and narrowband channels (per applicable regulatory standards), and its software-defined architecture allows field upgrading to operating modes such as P25 Phase 2 trunking.

BEST-IN-CLASS AUDIO

The XG-100P delivers the clear and exceptional audio that users have grown to expect from Harris. Combining a dual microphone design, an active noise-cancellation algorithm, and AMBE+2[™] vocoder, this radio provides best-in-class audio in extreme noise and harsh environments. The vocoder also controls distortion that may occur from shouting into the microphone.

GENERAL SPECIFICATIONS

Radio Models

Full Keypad: TFT LCD w/DTMF keypad, Nav cluster, Soft Keys

Dimensions (Without Knobs, Antenna, and Battery)

	Inches	Millimeters
Height:	6.68	169.7
Width:	2.78	70.1
Depth:	1.96	49.9

Weight (Without Antenna and Battery)

	Ounces	Grams
Portable:	16.8	476.3

Housing Colors

Black-Gray

Interfaces

Front Display: 176 x 200 pixels, 2.2 in. transfective LCD, 16-bit color with white LED backlight

Top Display: 128 x 32 pixels, 0.91 in. organic light-emitting diode (OLED)

Keypad: Backlight, 2 soft keys, 5-way navigation key, 4 x 3 keypad, home button

Buttons/Knobs: Large PTT button, on/off power/volume knob, red emergency button, 16-position top-mounted rotary knob, 2-position concentric switch, 3-position concentric switch, 3 programmable side buttons

Tx/Rx Indicator: Multi-colored LED

Transceiver

Supported Bands: VHF, UHF, & 700/800 MHz

Channel Capacity: 12,500 (1,250 per mission plan)

Environmental Specifications

Relative Humidity: 95% @ 140°F (+60°C)

Vibration: MIL-STD-810G, Method 514.6, Procedure I, Category 4, 9, 24

Drop Shock: 26 drops from height of 48 inches per MIL-STD-810G

Immersion: 1 meter for 30 minutes in accordance with MIL-STD-810G

	°F	°C
Operating Temperature*:	-4 to +140	-20 to +60

*Extremely low temperatures adversely affect battery life

	°F	°C
Storage Temperature*:	-22 to +158	-30 to +70

*Store batteries at the following temperatures:

Li-Ion:	-40 to +176	-40 to +80
Li-Polymer:	-22 to +176	-30 to +80

	Feet	Meters
Altitude Operational:	15,000	4,572
In Transit:	40,000	12,192

Electrical

Input Voltage: 7.5 VDC (nominal)

GPS/GNSS Specifications

Channels:	20
Tracking Sensitivity:	-159 dBm
Acquisition Sensitivity:	-144 dBm (cold start) -155 dBm (hot start)
Cold Start:	<34 seconds
Hot Start:	<1 second
Mode of Operation:	Autonomous GPS

Safety

Intrinsically Safe Options:

Factory Mutual Intrinsically Safe for Class I, II, and III, Division 1, Groups D, F, and G, hazardous (classified) locations and suitable for Class I, Division 2, Groups A, B, C, and D hazardous (classified) locations

RoHS compliant

TRANSMITTER

Typical Performance Specifications

Frequency Range (MHz):	136-174 (VHF), 380-520 (UHF), 762-870 (700/800)
Rated RF Power (W):	VHF: 1-6, UHF: 1-5, 700/800: 0.5-3
Rated RF Power Talkaround (W):	VHF: 1-6, UHF: 1-5, 700/800: 0.5-3
Frequency Stability (-30 to +60°C) (ppm):	±0.5
Modulation Limiting (kHz):	2.5, 4, 5 (FM)
Audio Response (dB):	+1/-3
Spurious and Harmonics (dBc):	-70, FCC Part 90
FM Hum and Noise@25 kHz (dB):	VHF: -51, UHF: -54, 700/800: -50
@12.5 kHz (dB):	VHF: -45, UHF: -47, 700/800: -44
Audio Distortion (%):	<1.25
Project 25 Modulation Fidelity (%):	1.00
Project 25 Adjacent Channel Power (dBc):	>67
Emission Designators:	16K0F3E, 11K0F3E, 8K4F1E, 8K4F1D, 12K00G1E, 12K00G1D, 14K0F3E

*VHF and UHF product is compliant with applicable FCC narrowbanding mandate below 512 MHz.

REGULATORY DATA

Frequency Range (MHz)	RF Output (W)	Frequency Stability (ppm)	FCC Type Acceptance Number	Applicable FCC Rules	Industry Canada Certification Number	Applicable Industry Canada Rules	NTIA Certification Number
136-174	6.0	0.5	AQZ-XG-100P00	22, 80, 90	122D-XG100P00	RSS-119	J/F 12/9952
380-520	5.0	0.5	AQZ-XG-100P00	22, 90	122D-XG100P00	RSS-119	J/F 12/9952
763-775, 793-805	2.5	0.5	AQZ-XG-100P00	90	122D-XG100P00	RSS-119	NA
806-824, 851-869	3.0	0.5	AQZ-XG-100P00	90	122D-XG100P00	RSS-119	NA

Technical specifications are subject to change without notice. Product sales are subject to applicable U.S. export control laws.



RECEIVER

Typical Performance Specifications

Typical Performance Specifications	Full-Spectrum Multiband*
Frequency Range (MHz):	136-174 (VHF), 380-520 (UHF), 762-870 (700/800)
Channel Spacing (kHz):	25 (wideband*), 12.5 (narrowband)
Sensitivity (12 dB SINAD) (dBm):	VHF: -121.1, UHF: -123.0, 700/800: -121.4
Project 25 Reference Sensitivity @ 5% BER (dBm):	VHF: -121.0, UHF: -122.9, 700/800: -121.4
Adjacent Channel Rejection @ 25 kHz (dB):	VHF: 77.8, UHF: 73.7, 700/800: 72.7
P25 Adjacent Channel Rejection @ 12.5 kHz (dB):	VHF: 66.2, UHF: 62.2, 700/800: 62.0
Intermodulation (dB):	VHF: 74.3, UHF: 78.8, 700/800: 78.5
Spurious and Image Rejection (dB):	VHF: 70, UHF: 75, 700/800: 70
FM Hum and Noise @ 25 kHz (dB):	VHF: -54.8, UHF: -49.1, 700/800: -48.2
@12.5 kHz (dB):	VHF: -53.8, UHF: -43.7, 700/800: -42.8
Rated/Max. Audio Output (mW):	500/1200
Audio Distortion:	1.1% @ rated power

*VHF and UHF product is compliant with applicable FCC narrowbanding mandate below 512 MHz.

ENVIRONMENTAL STANDARDS

Standard	Parameter	Methods	Procedures/Categories
MIL-STD-810G*	Low Pressure	500.5	1,2
	High Temperature	501.5	1,2
	Low Temperature	502.5	1,2
	Temperature Shock	503.5	1
	Solar Radiation	505.5	1
	Blowing Rain	506.5	1
	Humidity	507.5	2
	Salt Fog	509.5	1
	Blowing Dust & Sand	510.5	1,2
	Immersion	512.5	1
	Vibration (Minimum Integrity)	514.6	1, Category 24
	Vibration (Basic Transportation)	514.6	1, Category 4
	Shock (Functional/Basic)	516.6	1
	Shock (Transit Drop)	516.6	4
	Shock (Bench Handling)	516.6	6

*Also meets equivalent superseded MIL-STD-810D, -E, and -F.

DIGITAL OPERATION

Protocol	P25
Vocoding Method:	AMBE + 2™ Enhanced Full Rate & Enhanced Half Rate
Signaling Rate (kbps):	9.6
Modulation:	Phase 1 TX: C4FM, RX: C4FM & WCQPSK Phase 2 TX: HCPM, RX: WCQPSK

ENCRYPTION

Encryption Algorithms:	AES (FIPS 140-2 certified), DES-OFB, DES-CFB
Encryption Keys per Radio:	Capable of storing 128 keys (64 AES, 64 DES)
Encryption Keying:	Harris Key Loader, P25 Conventional and Trunked OTAR, Motorola KVL 3000+

BATTERIES

Type	Dimensions (L x W x D)	Weight	Life (@5% Tx, 5% Rx, and 90% standby)	Capacity (mAh)
Li-Ion*	4.65 x 2.36 x 0.88 in.	7.7 oz (217g)	>10 hours	3100
Li-Polymer	4.65 x 2.36 x 0.88 in.	6.4 oz (181g)	>12 hours	3600

*Used only with FM certified safe radios.

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ADVANCED STANDARD FEATURES

The XG-100P delivers the advanced features required by critical communication users.

- **Situational Awareness** – available only in P25 conventional mode, this unique feature provides unit-to-unit tracking using GPS data to aid in personnel accountability.
- **Bluetooth® Cloning** – with Bluetooth enabled, users can clone mission plans or radio personalities in seconds to aid quick communications.
- **Command Tactical Zone (CTZ)** – allows users to dynamically create custom zones to communicate with other jurisdictions without a need for PC-enabled programming.
- **Multiple Mixed Systems Zones** – allows users to communicate across multiple types of systems whether Analog Conventional, P25 Conventional, P25 Trunked Phase 1 (FDMA) or Phase 2 (TDMA).

ACCESSORIES

The Unity XG-100P offers a full complement of accessories that operate under the extreme conditions experienced by first responders. Several are shown below.

Headsets

The XG-100P can be used with a wide variety of audio accessories including speaker microphones, headsets and covert audio accessories to provide a complete user-gear solution for the industrial, public safety, utility, and transportation markets. Heavy-duty and lightweight headsets are available with in-ear or over-the-ear hearing protection, flexible boom microphones with noise-reduction technology, and standard or remote PTTs. In addition, the XG-100P can be used with Bone Conducting Skull Headsets and Throat Microphone/Headset Kits. Covert audio kits are available in black or beige, and in 2-wire or 3-wire configurations with earpiece, microphone, and PTT.



Speaker Microphone



Fire Speaker Microphone



Tactical Headset



3-Wire Mini-Lapel Microphone

Carrying Cases

Harris offers a versatile line of carrying cases for the XG-100P radio. Options include a standard belt clip and premium belt loop, both of which afford the radio user a low-profile, integrated carrying option. In addition, a premium leather holster is available for attaching to a belt or wearing with the premium leather shoulder strap.



Nylon Carrying Case



Belt Clip



Leather Carrying Case

Chargers

Harris offers a variety of chargers for the XG-100P: Single-Bay, Multi-Bay, and a Vehicular Charger for in-car charging. The chargers are designed to quickly and safely charge battery packs in approximately 1 to 4 hours.



Single-Bay Charger



Multi-Bay Charger



Vehicular Charger

Additional Accessories Available

Antennas, Bluetooth speaker microphones, Bluetooth covert earpieces, microphones, Lithium batteries, PC programming software, and cables are available.

About Harris Corporation

Harris Corporation is a leading technology innovator that creates mission-critical solutions that connect, inform and protect the world. The company's advanced technology provides information and insight to customers operating in demanding environments from ocean to orbit and everywhere in between. Harris has approximately \$8 billion in annual revenue and supports customers in 125 countries through four customer-focused business segments: Communication Systems, Space and Intelligence Systems, Electronic

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INFORM AND PROTECT™