



Unity® XG-100P
Portable
Full-Spectrum
Multiband

ULTIMATE PERFORMANCE IN ONE RADIO

Unity XG-100P: The Truly Interoperable Solution for P25 Multiband Performance



The Unity XG-100P full-spectrum multiband radio's user-centric design delivers unprecedented interoperability, ease of use, and advanced capabilities in a radio that users can depend on for years to come. By supporting both digital APCO P25 secure and analog FM communications across the VHF, UHF, and 700/800 MHz bands in a single radio, responders can communicate with multiple jurisdictions and agencies operating on multiple frequencies and systems. 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 that meets the requirements of mission-critical communications.

Standard features found on the Unity XG-100P include:

- > AMBE+2™ Vocoder – provides noise cancellation capability and enhances audio quality
- > Active Noise Cancellation – with dual microphones for users in noisy environments
- > Built-in GPS – for position tracking and rapid response for emergencies
- > Factory Mutual Intrinsicly Safe – for operation in hazardous conditions when paired with an Intrinsicly Safe battery and other accessories
- > Rugged for Field Use – meets MIL-STD-810G for durability and immersion

Built upon Harris' long history of fielding mission-critical software-defined radios that support evolving customer requirements through software-only upgrades, the Unity XG-100P allows flexibility for future growth.

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FUTURE READY

The Unity XG-100P is an investment that agencies can rely on as transitions occur to P25 technology. It supports P25 conventional and trunked operation, wideband and narrowband channels, and its software-defined architecture allows field upgrading to operating modes such as P25 Phase 2. With a 3-year standard radio warranty, the Unity XG-100P is a future-proof investment.

SUPERIOR AUDIO EXPERIENCE

The XG-100P features Harris' proprietary noise suppression capability to provide clear and crisp voice quality in high-noise environments. The radio is designed with dual microphones and advanced signal processing technology for built-in noise suppression. The AMBE+2 vocoder optimizes the quality of communications and controls distortions to provide one of the best audio experiences available.

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 a configurable top display
- > Front-panel programming

ADVANCED FEATURES

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

- > P25 Conventional Situational Awareness employs GPS data to aid in personnel accountability. The radio screen displays a unique identifier for each XG-100P user as well as that user's position in the area.
- > Multiple Mixed Systems Zones allows users to communicate across multiple types of systems: analog conventional, P25 trunked, and P25 conventional. Zones composed of multiple systems are created and users can assign knob positions to channels and talkgroups on these disparate systems.
- > Command Tactical Zone allows users to create custom zones to communicate with radios not part of preset zones, regardless of frequency and with no need for programming through computer interfaces. Custom zones provide up to 48 additional channel assignments.
- > Bluetooth® Clone enables communications between multiple versions and types of radio programming. With the press of a few buttons, users clone programming in seconds to effectively communicate with other users.



ACCESSORIES



The XG-100P operates with a full complement of Harris accessories. Several are highlighted below.

The VC4000 Charger may be mounted in a vehicle or used as a desk charger to charge Li-Ion and Li-Polymer batteries in about 4 hours. The unit provides microprocessor-controlled charging for long battery life and maximum battery performance, and protective circuitry to prevent damage to batteries resulting from charging when outside the required temperature or voltage range. The VC4000 can charge batteries with or without the radio attached, and can accommodate a portable with the speaker mic and/or belt clip still attached.

The Wireless Bluetooth Remote Speaker Microphone (RSM) affords XG-100P users the capability to add an RSM to their system wirelessly. This Class 2 device, with a 10-meter wireless range, employs Secure Simple Pairing and encryption and contains a Lithium rechargeable battery with a 12-hour shift life. The compact design includes volume control buttons, a dedicated Emergency button, PTT button, Pairing and Power buttons, a 2.5-mm audio jack for earpiece accessories, and a ruggedized lapel clip for secure attachment to clothing.

The Standard Speaker Microphone includes a two-position volume control setting, emergency button, rubber PTT, and earphone jack in a compact yet highly functional design. A clothing clip that rotates a full 360 degrees provides complete accessibility. With construction that meets MIL standard specifications, this speaker microphone meets the needs of a wide range of users.

GENERAL SPECIFICATIONS

Dimensions (H x W x D):

(Without Knobs and Antenna)
 With battery:
 6.50 x 2.43 x 1.83 in.
 (167.6 x 61.7 x 46.5 mm)

Weight (with Battery):

22.5 oz (638g)

Input Voltage:

7.5 VDC (nominal)

Immersion:

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

Battery Life (at 5% Tx, 5% Rx, and 90% standby):

Li-Polymer: >12 hours
 (3600 mAH)

Operating Temperature Range:

-4 to +140°F (-20 to +60°C)

Relative Humidity:

Per MIL-STD-810G

Altitude:

Operational: 15,000 ft
 (4,572 m)
 In Transit: 40,000 ft
 (12,192 m)

Front Display:

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

Top Display:

128 pixels x 32 pixels, 0.91 in. Organic Light-Emitting Diode (OLED)

Keypad:

Backlight, 2 soft keys, 5-way navigation key, 4x3 keypad, home button

Buttons/Switches:

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

TX/RX Indicator:

Multi-color LED

Channel Capacity:

12,500 (1,250 per mission plan)

Options and Accessories

Speaker microphones, programming software and cables, surveillance accessories, antennas, cases, straps, belt loops and swivel mounts, and desk chargers.

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.

EXCEPTIONAL OPERATION FOR CRITICAL COMMUNICATIONS

TRANSMITTER

TYPICAL PERFORMANCE SPECIFICATIONS

Frequency Range (MHz):	136-174 (VHF), 380-520 (UHF), 762-870 MHz (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

FULL-SPECTRUM MULTIBAND*

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

RECEIVER

TYPICAL PERFORMANCE SPECIFICATIONS

Frequency Range (MHz):	136-174 (VHF), 380-520 (UHF), 762-870 MHz (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 product is compliant with applicable FCC narrowbanding mandate below 512 MHz.

ENVIRONMENTAL SPECIFICATIONS

STANDARD	PARAMETER	METHODS & PROCEDURES
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
Data Rate (kbps):	9.6
Modulation:	Phase1 TX: C4FM, RX: C4FM & WCQPSK Phase 2 TX: HCPM, RX: WCQPSK
Encryption algorithms:	AES (FIPS-140-2 certified), DES-OFB, DES-CFB
Encryption keys:	128 keys (64 AES, 64 DES)
Encryption keying:	Harris Keyloader, P25 Conventional and Trunked OTAR, KVL-3000+

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.



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