XG-75M MOBILE

VHF, UHF, 700/800 MHz

RELIABLE OPERATION UNDER HARSH CONDITIONS

Delivering high reliability, clear audio quality, and secure communications, the XG-75M mobile radio provides a fully trusted communications device for those who defend, protect, and serve communities in day-to-day operations as well as emergency situations. The XG-75M is the next generation ruggedized P25 Phase 2 capable radio designed for mission critical communications in extreme conditions.

FEATURES

Single-key DES encryption and Encryption Lite are standard. Single-key DES interoperates across the industry. Encryption Lite allows communication with commonly available encrypted radios using a 40-bit key.

System, Scan, and hand held control unit options are available to best meet various conditions and requirements.

Optional features are available for GPS position tracking, Over-the-Air Programming for remote downloads of radio personalities and user profiles, and FIPS for enhanced security using federally approved 256-bit AES for encrypted communications.

MULTIMODE AND MULTI-PROTOCOL SUPPORT

Designed for users on P25 platforms as well as Harris legacy platforms, the XG-75M supports P25, EDACS®, ProVoice™, and OpenSky® users who want one radio to manage their migration needs.

BEST-IN-CLASS AUDIO

The XG-7M delivers the clear and exceptional audio that users have grown to expect from Harris. Combining robust audio components and an AMBE+2™ vocoder, this radio provides a best-in-class audio experience in extreme noise and harsh environments. The vocoder also controls distortion that may occur from shouting into the microphone.

FUTURE READY

The XG-75M is a safe investment that agencies can rely on as transitions occur to P25 technology. The mobile 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.

RUGGED FOR HARSH CONDITIONS

The XG-75M is a member of the family of field-proven, reliable, and rugged mobiles in the Harris portfolio. Durable construction enables the XG-75M to operate in demanding environments.

GENERAL SPECIFICATIONS

Dimensions (H x W x D)

VHF Radio Only (110W):
2.4 x 6.9 x 11.0 in. (61 x 175 x 279 mm)

VHF Radio Only (50W):
2.0 x 6.9 x 9.2 in. (50 x 175 x 233 mm)

UHF & 700/800 MHz Radio Only (30W):
2.0 x 6.9 x 9.2 in. (50 x 175 x 233 mm)

Radio and Control Unit (Includes Knobs):
2.4 x 6.9 x 12.3 in. (60 x 175 x 311 mm)

Control Unit (Remote):
2.4 x 7.0 x 4.0 in. (60 x 175 x 100 mm)

Weight

VHF Remote Mount (110W):
7.55 lb (3.42 kg)

VHF, UHF, 700/800 MHz Front Mount:
5.9 lb (2.68 kg)

VHF, UHF, 700/800 MHz Remote Mount:
Transceiver Only: 5.25 lb (2.38 kg)
CH-721 CU: 1.25 lb (0.57 kg)

Construction

Control Unit:	High Impact Plastic
Transceiver:	Cast Metal

Speaker

Weather-resistant external, 15W

Mounting

Front or Remote Mount available

Environmental Specifications

Relative Humidity:	90% @ 122°F (+50°C)	
	°F	**°C**
Ambient Temperature Range:	-22 to +140	-30 to +60
	Feet	**Meters**
Altitude:	15,000	4,572

Electrical

System Voltage:	10.8 to 16.3* VDC Negative Ground

*Not to exceed 14.3V above +50°C for motorcycle applications

DC Supply Current:	
Transmit (110W):	25 amps max, 23 amps typical
Transmit:	15 amps max, 11 amps typical
Receive (includes CH-721):	4 amps max (with 15W speaker output)
Standby:	1.1 amps typical
Duty Cycle:	TIA/EIA-603
Operation:	12 VDC Negative Ground

Safety

RoHS compliant

Programming

Field PC Programmable

TRANSMITTER

Typical Performance Specifications	VHF	UHF	700/800
Frequency Range (MHz):	136-174	378-430, 440-512	764-776, 794-806, 806-825, 851-869
Rated Power Output (W):	8-50, 50-110	8-50	30 (35 EDACS/P25 800 MHz)
RF Output Impedance (ohm):	50	50	50
Frequency Stability (ppm):	±2.0	±1.5	±1.5
Modulation Deviation (kHz):	±5(wideband*) ±2.5 (narrowband)	±5 (wideband*) ±2.5 (narrowband)	±5 (wideband) ±2.5 (narrowband) (±4 NPSPAC)
FM Hum and Noise Companion Receiver (dB):	52 (wideband*) 46 (narrowband)	52 (wideband*) 46 (narrowband)	47 (wideband) 41 (narrowband)
Audio Response (dB):	+1/-3, 300-2500 Hz	+1/-3, 300-2500 Hz	+1/-3, 300-2500 Hz
Audio Distortion (typical):	<2.5% @ 1 kHz <5.0% @ 2.5 kHz	<2.5% @ 1 kHz <5.0% @ 2.5 kHz	<2.5% @ 1 kHz <5.0% @ 2.5 kHz
Spurious and Harmonics Emissions (dBm):	<-20	<-20	<-20
Adjacent Channel Power (dBc):			
C4FM (6 kHz bw):	>67	>67	>67
Wideband/Narrowband:	>70/>60	>70/>60	>70/>60

*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	50	2.0	OWDTR-0055-E	22, 80, 90	3636B-0055	RSS-119	J/F 12/9968
136-174	110	2.0	OWDTR-0056-E	90	3636B-0056	RSS-119	NA
406-470	50	1.5	OWDTR-0061-E	90	3636B-0061	RSS-119	J/F 12/9968
764-806	30	1.5	OWDTR-0132-E	90	3636B-0132	RSS-119	NA
806-870	35	1.5	OWDTR-0132-E	90	3636B-0132	RSS-119	NA

RECEIVER

Typical Performance Specifications	VHF	UHF	700/800
Frequency Range (MHz):	136-174	378-430, 440-512	764-776, 851-870
RF Input Impedance (ohm):	50	50	50
Channel Spacing (kHz):	12.5/25	12.5/25	12.5/25
Frequency Stability (ppm):	±2.0	±1.5	±1.5
Sensitivity (12 dB SINAD) (μV/dBm): 5% BER:	0.25/-119.0 >0.35/-116	0.25/-119.0 >0.35/-116	0.25/-119.0 >0.35/-116
Adjacent Channel Selectivity @ 25 kHz (dB): @12.5 kHz (dB):	>85 >70	>80 >70	>80 >70
Intermodulation (dB):	>80	>80	>80 (Typical)
Spurious Rejection (dB):	>90 (except 2nd image)	-90 (except 2nd image)	-90 (except 2nd image)
Audio Response (dB):	+1/-3, 300-2500 Hz	+1/-3, 300-2500 Hz	+1/-3, 300-2500 Hz
Audio Output (W):	15 @<3% distortion	15 @<3% distortion	15 @<3% distortion
Adjacent Channel Interference Power Ratio (dB): C4FM:	 >60	 >60	 >60
FM Hum and Noise Wideband/Narrowband (dB):	>50/>46	>50/>46	>47/>40

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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-B
	Solar Radiation	505.5	2
	Blowing Rain	506.5	1
	Humidity	507.5	2
	Salt Fog	509.5	1
	Blowing Dust	510.5	1
	Vibration (Minimum Integrity)	514.6	1, Category 4
	Vibration (Basic Transportation)	514.6	1, Category 24
	Shock (Functional/Basic)	516.6	1
	Shock (Transit Drop)	516.6	4
TIA/EIA-603	Vibration Stability	Paragraph 2.3.4 & 3.3.4	
U.S. Forest Service	Vibration (10-60 Hz)	Paragraph 2.15	

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

DIGITAL OPERATION

Protocol	OpenSky® (700/800 MHz)	ProVoice™	P25 Phase 1/Phase 2	TIA/EIA-603
Vocoding Method:	AMBE + 2™ Half Rate & Enhanced Half Rate	AMBE + 2 Enhanced Full Rate	AMBE + 2 Enhanced Full Rate & Enhanced Half Rate	Not Applicable
Signaling Rate (kbps):	19.2 & 9.6	9.6	9.6/12	Analog
Modulation:	4-Level GFSK & M4FM	GFSK	Phase1 TX: C4FM, RX: C4FM & WCQPSK Phase 2 TX: HCPM, RX: WCQPSK	FM
Data Communication Mode:	Half Duplex	Half Duplex	Half Duplex	Half Duplex

ENCRYPTION

Encryption Algorithms:	AES (P25T, P25C & ProVoice), DES-OFB, Encryption Lite (40-bit)*
Encryption Techniques:	Non-Linear Product/Block Transformation

*Option included as standard with the radio. Interoperates with commonly available ARC4 encryption algorithms.

ADVANCED COMMUNICATION FEATURES

The XG-75M provides advanced features for first responders.

- Over-the-Air Programming (OTAP) allows radio features and user profiles to be reprogrammed quickly over the air. This feature allows communications protocols to be changed easily and added at any time.
- GPS provides quick and accurate unit location information to dispatchers via the P25 or OpenSky radio network.
- OpenSky trunking is a secure integrated digital voice and data communications system that leverages the power of Internet Protocol (IP) and packet technology for reliability and scalability to bring open data applications to users.

ACCESSORIES

The XG-75M offers a full complement of accessories that operate under the extreme conditions experienced by first responders. Several are shown below.

Control Units

The XG-75M offers multiple control units to meet special requirements. All are available in front or remote mount designs.

The CH-721 control unit has a 3-line 8-character alphanumeric display. The control unit is available in Scan (limited keypad) and System (full keypad) models and supports P25, 800 MHz EDACS and ProVoice, and OpenSky trunking operation. The Scan model has large selection buttons. The System model has a 12-button keypad to allow advanced operations without a DTMF microphone.

The HHC-731 Hand Held Controller provides the advanced features of the CH-721 System control unit, including siren and light bar control, in a compact package. The ruggedized design meets a full range of environmental specifications and supports P25, 800 MHz EDACS and ProVoice, and OpenSky trunking operation. The 3-line 8-character alphanumeric display is backlit for use in low-light areas. The small size of the HHC-731 makes it ideal for covert operations and use in space-constrained environments.

CH-721 Scan

CH-721 System


HHC-731

Microphones

Harris offers a versatile line of microphones for the XG-75M radio. Options include a standard mic with an angled or a straight connector, noise cancelling mic, and desktop microphone as well as dual control unit microphones. With their robust components, these microphones provide the high-quality audio needed by first responders.


Noise Cancelling Mic


DTMF Microphone


Desktop Microphone

Additional Accessories Available

Antennas, remote mounting kits, desktop control station, motorcycle kit (30 and 50W only), 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 Systems, and Critical Networks.

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