XG-75M Mobile

VHF, UHF, 700/800 MHz

RELIABLE PERFORMANCE UNDER HARSH CONDITIONS

XG-75M: A Robust Solution for Mission-Critical Communications

Mobile with Front Mount CH-721 Scan Control Unit

Mobile with Remote Mount CH-721 System Control Unit

The XG-75M* meets the requirements for a rugged radio that performs under the most adverse conditions. Delivering high reliability, multi-mode operation, clear voice quality, secure communications, and assured interoperability, the mobile provides the tools first responders need to communicate with each other and their command centers in day-to-day service and emergencies to defend and protect lives. The mobile operates on VHF, UHF, and 700/800 MHz frequencies and supports Harris' Enhanced Digital Access Communications System (EDACS®) and ProVoice™ digital trunking, OpenSky® digital trunking, P25 digital conventional, P25 digital trunking, and analog conventional operating modes.

Standard features found on the XG-75M include:

- AMBE+2™ Vocoder – provides noise cancellation capability and enhanced audio quality
- Rugged Design for Field Use – meets MIL-STD-810F for durability
- Single-Key DES Encryption – affords secure communications

Optional features available for the XG-75M include:

- GPS Capability – for position tracking and rapid response for emergencies
- OTAP – for remote downloading of radio personalities over the air to reduce the amount of time and labor required to reprogram radios
- Multiple Control Units – select from system, scan, and hand held units to best meet conditions and requirements

The XG-75M is a state-of-the art radio designed to operate under the special conditions experienced by first responders.

*Formerly denoted as M7300.

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FUTURE READY

The XG-75M is an investment that agencies can rely on as transitions occur to P25 technology. The mobile supports wideband and narrowband channels and its software-defined architecture allows field upgrading to operating modes such as P25 Phase 2.

SUPERIOR AUDIO EXPERIENCE

The XG-75M delivers the exceptional audio that users have grown to expect from Harris. The AMBE+2 vocoder optimizes the quality of communications and also controls distortion that may occur from shouting into the microphone. Through high-quality voice coding and robust audio components, the XG-75M provides the loud and clear audio that critical communication users require.

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.

CONTROL UNITS FOR SPECIALIZED CONDITIONS

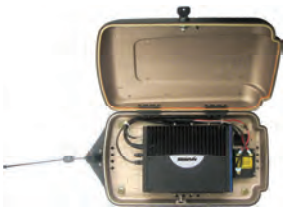
The XG-75M offers multiple control units to meet special requirements. All are available in front or remote mount designs.

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

- 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.

ACCESSORIES

The XG-75M is available with a wide range of Harris accessories. Examples are shown on the left.



The motorcycle kit provides reliable communications for the officer on the front line, through day-to-day operations and in emergencies. The kit includes a weather-resistant locking radio case with integral antenna ground plane. A radio case mounting plate kit secures the case and radio to the back of the motorcycle. The kit interfaces with the CH-721 System and Scan control units and is capable of supporting an external headset, ignition A+ sensing, external encode/decode devices as well as siren/public address systems.

The noise-cancelling microphone provides clear communication, even in noisy environments such as near fire trucks and heavy machinery. The mobile microphone is designed to withstand heat and humidity and is immune to oil, grease, most fumes and solvents, salt spray, sun, rust, and corrosion. With its robust components, the noise-cancelling microphone provides the high-quality audio needed by first responders.

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 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 Front Mount:
5.9 lb (2.68 kg)

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

System Voltage:

10.8 to 16.6* VDC Negative Ground
*Not to exceed 14.3V above +50°C for motorcycle applications.

DC Supply Current:

Transmit (110W):
25 amps maximum, 23 amps typical

Transmit:
15 amps maximum, 11 amps typical

Receive (Includes CH-721 CU):
4.0 amps maximum (with 15-Watt speaker output power)

Standby:
1.1 amps typical

Ambient Temperature Range:

-22 to +140°F
(-30 to +60°C)

Relative Humidity:

90% @ 122°F (+50°C)

Altitude:

15,000 ft (4,572 m)

Duty Cycle:

TIA/EIA-603

Programming:

Field PC Programmable

Mounting:

Front or Remote Mount available

Construction:

Control Unit: High Impact Plastic
Transceiver: Cast Metal

Speaker:

Weather-Resistant External, 15W

Operation:

12 VDC Negative Ground

Options and Accessories

Remote mount kit, system and scan control units, hand held controller, mobile mic, DTMF mic, noise cancelling mic, desk mic, desktop control station, and motorcycle kit (30 and 50W only).

RoHS compliant

MEETS STRINGENT REQUIREMENTS FOR CRITICAL COMMUNICATIONS

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	10-50	30 (35 EDACS/P25 800)
RF Output Impedance (ohm):	50	50	50
Frequency Stability (ppm):	±2.0	±1.5	±1.5
Modulation Deviation (kHz):	±5	±5	±5 (±4 NPSPAC)
FM Hum and Noise (dB):	52 (wideband) 46 (narrowband)	52 (wideband) 46 (narrowband)	47 (wideband) 44 (narrowband)
Audio Response (dB):	+1/-3, 300-2500 Hz	+1/-3, 300-2500 Hz	+1/-3, 300-3000 Hz
Audio Distortion (typical):	<2.5% @ 1 kHz <5.0% @ 2.5 kHz	2% @ 1 kHz	2.55% @ 1 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.

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 >0.35/-116
Adjacent Channel Selectivity (dB):			
@ 12.5 kHz:	>60	>60	>60
@ 25 kHz:	>80	>80	>80
Intermodulation (dB):	>80	-80 @ 25 kHz	-77 @ 25 kHz
Spurious Rejection (dB):	>90	-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):	15W @ <3% distortion	15W @ <3% distortion	15W @ <3% distortion
Adjacent Channel Interference Power Ratio (dB): C4FM:	>60	>60	>60
FM Hum and Noise Wideband/Narrowband (dB):	>50/>46	>50/>46	>47/>41

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ENVIRONMENTAL SPECIFICATIONS

STANDARD	PARAMETER	METHODS & PROCEDURES
MIL-STD-810F*	Low Pressure	500.4/1,2
	High Temperature	501.4/1,2
	Low Temperature	502.4/1,2
	Temperature Shock	503.4/1
	Solar Radiation	505.4/2
	Blowing Rain	506.4/1
	Humidity	507.4/2
	Salt Fog	509.4/1
	Blowing Dust	510.4/1
	Vibration (Minimum Integrity)	514.5/1, Category 24
	Shock (Functional/Basic)	516.5/1
	Shock (Transit Drop)	516.5/4
TIA/EIA-603	Vibration Stability	Par. 2.3.4 & 4.3.4
	Shock Stability	Par. 2.3.5 & 3.3.5
U.S. Forest Service	Vibration (10-60 Hz)	Par. 7.15

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

DIGITAL OPERATION

PROTOCOL	OPENSKY®	PROVOICE™	P25	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	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 Technique:	Non-Linear Product/Block Transformation
Algorithm Types:	Data Encryption Standard (DES) OFB Advanced Encryption Standard (AES) (P25 Trunking, P25 Conventional, & ProVoice Trunking)

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	22, 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-0060-E	90	3636B-0051	RSS-119	NA
806-870	35	1.5	OWDTR-0060-E	90	3636B-0051	RSS-119	NA

*FCC Part 80 approval is for 156-162 MHz only.

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

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