



L3HARRIS[®]
FAST. FORWARD.

XL ONBOARD™ 85 MOBILE

Single-Band Mobile Radio

The L3Harris XL Onboard 85M mobile radio is a feature-rich, cost-effective option for reliable, mission-critical communications. With P25 Trunking, Phase 1 and Phase 2 capabilities, this radio is outstanding for first responders and utility customers who need to manage their migration needs with just one device.

The ride is always smoother with a best-in-class radio by your side. The XL Onboard Series P25 radios bring unflinching critical communications to any vehicle in your fleet. Connect in more ways than ever with Wi-Fi®, Bluetooth® and GPS capabilities. Let's go.

RELENTLESSLY RELIABLE

XL Radios run on systems that double down on redundancy, champion open networks and connect seamlessly with P25-compliant organizations.

POINT-TO-POINT SECURE

Our AES-256 encryption provides an end-to-end secure configuration, keeping you safe from threats.

BACKED WITH ALL-IN, 24/7 SUPPORT

Our service packages keep your radios up and running with in-field preventative maintenance and software upgrades.

Key Benefits:

- > Interoperability across VHF, UHF and 700/800 MHz bands
- > Connects in more places with Wi-Fi, Bluetooth and GPS
- > Wi-Fi enabled voice and device management
- > Multiple encryption options for secure communications
- > Modular design for flexible mounting configurations
- > Advanced noise cancellation technology
- > Ruggedized to MIL-STD-810H standards for tough conditions
- > 2.4-inch color display with six programmable buttons and simple menu access



SPECIFICATIONS FOR: XL ONBOARD 85 MOBILE RADIO

GENERAL	
Dimensions (H x W x D): (Excludes knobs)	Size: 62mm x175mm x 238mm (Excluding protrusions)
Weight (without brackets)	6.5 lbs (2.95 kg)
Channel/Talkgroup Capacity	12,500 (1,250 per mission plan; up to 10 mission plans)
Radio Programming	Firmware, personalities and feature sets through USB or via Wi-Fi
Control Unit	18-bit color LCD 320 pixels x 240 pixels 2.4-inch color LCD with up to 3 lines of text, status bar and menu buttons Three programmable menu/option buttons and three additional programmable buttons Separate volume and channel selector knobs Single DIN sizing One USB Type-C port for microphone
Speakers: External, 15 W	One 15W audio channel on the radio control head and one on the radio body, with less than 3% distortion
Environmental Specifications: Relative Humidity Operating Temperature Storage Temperature Ambient Temperature Range	90% @ 122°F (+50°C) -22°F to +140°F (-30°C to +60°C) -40°F to +176°F (-40°C to +80°C) -22°F to +140°F (-30°C to 60°C)
Altitude: Operational In-Transit	15,000 ft (4,572 m) 50,000 ft (15,240 m)
Electrical: System Voltage Standby Current Drain Receive Current Drain Current Drain @ 35W TX	10.88 to 16.32 VDC negative ground 1A 2A 10A nominal
GPS/GNSS:	P25 standard TIER 2 and L3Harris in-band
Channels GNSS Constellations Supported Tracking Sensitivity	52 2
Acquisition Sensitivity Cold Start Hot Start Feature	-165 dBm (GPS), -163 dBm (GLONASS) -146 dBm (GPS) < 35 seconds < 1 second

LMR TRANSMITTER			
Frequency Bands (MHz)	VHF	UHF	700/800
Frequency Range (U.S.)	136-174	378-522	768-776, 798-806, 806-816, 851-861
Frequency Range (Int'l)	136-174	378-522	763-776, 793-806, 806-825, 851-870
Modulation Limiting (kHz)	2.5, 4, or 5 FM		
Audio Response	Meets TIA-603-D Section 3.2.6		
Spurious and Harmonics (dBc)	< -75, FCC Part 90	< -70, FCC Part 90	< -75, FCC Part 90
FM Hum and Noise (dB @ 12.5 kHz)	-45.0		
FM Hum and Noise (dB @ 25 kHz)	-47.0		
Audio Distortion (%)	< 3.0		
P25 Modulation Fidelity (%)	< 3.00		
Frequency Stability (ppm)	±1.5		
P25 Adjacent Power (dB)	> 67	> 67 @ 50 W (378-512 MHz) > 67 @ 25 W (512-522 MHz)	> 67
Channel Spacing (kHz)	12.5, 25		
Conducted Emissions (dBc)	-75	-70	-75
Radiated Emissions	Meets TIA/EIA-603-D 3.2.12		

SPECIFICATIONS FOR: XL ONBOARD 85 MOBILE RADIO

LMR RECEIVER			
Frequency Bands (MHz)	VHF	UHF	700/800
Frequency Range (U.S.)	136-174	378-522	768-776, 851-861
Frequency Range (Int'l)	136-174	378-522	763-776, 851-870
Channel Spacing (kHz)	12.5, 25		
Sensitivity (12 dB SINAD)	-119 dBm		
P25 Sensitivity (5% BER)	-119 dBm		
Adjacent Channel Rejection @ 25 kHz (dB)	>75	>75	>75
Adjacent Channel Rejection @ 12.5 kHz (dB)	72	70	70
P25 Adjacent Channel Rejection @ 12.5 kHz (dB)	60	60	60
Intermodulation Distortion (dB)	77	78	76
FM Hum and Noise @ 12.5 kHz (dB)	-49	-47	-45
FM Hum and Noise @ 25 kHz (dB)	-50	-50	-47
Rated Audio Output	1 channel of 15W RMS into 4 Ohm		
Audio Distortion	< 3.0% @ rated power		
Stability Rejection (ppm)	+/- 1.5		
Spurious Rejection (dB)	92	90	88
Selectivity (dB)	NA	NA	20 (NPSAC Only)

BROADBAND	
Wi-Fi	802.11 b/g/n/r 2.4 GHz and 5 GHz; supports 24 preconfigured and 8 user configured networks
Bluetooth	Bluetooth 4.0 (128-bit encryption)

ENVIRONMENTAL STANDARD			
Applicable Standard	Parameter	Methods	Procedure/Categories
MIL-STD-810H	Low Pressure	500.6	1, 2
	High Temperature	501.7	1, 2
	Low Temperature	502.7	1, 2
	Temperature Shock	503.7	1-B
	Contamination by Fluids	504.3	2
	Solar Radiation	505.7	2
	Blowing Rain	506.6	1
	Humidity	507.6	2
	Salt Fog	509.7	1
	Blowing Dust	510.7	1
	Blowing Sand	510.7	2
	Vibration (Basic Transportation)	514.8	1, Category 4
	Vibration (Minimum Integrity)	514.8	1, Category 24
	Functional/Basic Shock	516.8	1
	Shock (Crash Hazard)	516.6	6
Shock (Bench Handling)	516.6	6	
Transit Drop	516.8	6	
TIA-603-D	Vibration Stability (10-60 Hz)	PAR 2.3.4 and 3.3.4	
IEC 60529	Dust-tight and Water Jets	IP65 (Control Unit) IP54 (Radio)	Table 2, Par. 13.4 Table 3, Par. 14.2.5

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

SPECIFICATIONS FOR: XL ONBOARD 85 MOBILE RADIO

DIGITAL OPERATION (Continued from previous page)		
Protocol	P25	ProVoice™
Vocoding Method	AMBE+2™ Enhanced Full Rate & Enhanced Half Rate	AMBE+2™ Enhanced Full Rate
Signaling Rate (kbps)	9.6	9.6
Modulation	Phase 1 TX: C4FM, RX: C4FM & CQPSK Phase 2 TX: HCPM, RX: HDCQPSK	GFSK
L3Harris Failsoft Operation	Switch to site Trunking Mode (for L3Harris infrastructure) or P25 Conventional Failsoft for Motorola	

ENCRYPTION	
Encryption Algorithms	Voice Encryption: Single-key AES/DES, Multiple-key AES/DES, DES-CFB, Encryption Lite (ARC4), 256-bit AES P25, 64-bit DES Control Channel Encryption: 128-bit AES (LLA)
Encryption Keys Per Radio	Number of Encryption Keys per Keystore capable of storing up to 1,048 Keys
Keying	L3Harris Key Loader, P25 Over-the-Air-Rekeying (OTAR), Motorola KVL 3000+/4000/5000
Standards	FIPS 140-2 Level 1, FIPS 197

REGULATORY DATA						
Frequency Range	RF Output (W)	Frequency Stability	FCC Type Acceptance ID	Applicable FCC Rule	Industry Canada ID	Applicable Industry Canada Rule
136-174	50.0	1.5 PPM	OWDTR-0161-E	90	3636B-0161	RSS-119
378-522	50.0	1.5 PPM	OWDTR-0161-E	90	3636B-0161	RSS-119
763-776, 793-806	30.0	1.5 PPM	OWDTR-0170-E	90	3636B-0170	RSS-119
806-825, 851-870	35.0	1.5 PPM	OWDTR-0170-E	90	3636B-0170	RSS-119
Emissions Designators	16K0F3E, 16K0F1D, 16K0F1E, 14K0F3E, 14K0F1D, 14K0F1E, 11K0F3E, 11K7F1D, 11K7F1E, 8K40F1D, 8K40F1E, 8K10DXW, 18K5F1W, 12K9F1W					

ACCESSORIES
Microphone: Tough, ergonomic digital microphone enabling noise cancellation.
Keypad Mobile Microphone: Rugged microphone equipped with a 12-button keypad and 5-way controller for radio control and noise cancellation in the palm of the user's hand.
XL-RHHC: The XL-Mobile Ruggedized Handheld Controller has the same functions as the XL Onboard control head, with a full-color LCD screen, mobile microphone and alphanumeric keypad in a compact unit.
Desktop Cabinet: Supports desktop deployment of the XL mobile radio in front-mount, remote mount and control head-only configurations.
External Speaker: Compact and carefully tuned for the human voice, the XL-85M external speakers deliver loud and clear mission-critical audio in an easy-to-mount enclosure.

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

XL Onboard 85M, Single-Band Mobile Radio

© 2026 L3Harris Technologies, Inc. | 3/2026 DS705F

NON-EXPORT CONTROLLED: THIS DOCUMENT CONSISTS OF INFORMATION THAT IS NOT DEFINED AS CONTROLLED TECHNICAL DATA UNDER ITAR PART 120.33 OR TECHNOLOGY UNDER EAR PART 772.

L3Harris Technologies is the Trusted Disruptor in defense tech. With customers' mission-critical needs always in mind, our employees deliver end-to-end technology solutions connecting the space, air, land, sea and cyber domains in the interest of national security. Visit [L3Harris.com](https://www.l3harris.com) for more information.



1025 W. NASA Boulevard
Melbourne, FL 32919

[L3Harris.com](https://www.l3harris.com)