XL-185P*i*

INTRINSICALLY SAFE MULTIBAND LAND MOBILE RADIO

RUGGEDIZED FOR SAFE OPERATIONS IN EXTREME CONDITIONS

The Harris XL-185P*i* is built to today's toughest specs for reliable communications in the most challenging operations. This single-band portable meets UL Class 1, Division 1 (C1D1) standards for intrinsic safety in hazardous environments.

KEY FEATURES

- Meets UL C1D1 standards for intrinsically safe operation in hazardous environments
- Robust connectivity with VHF, UHF or 700/800 frequency capabilities
- Compact and ergonomic, ruggedized to withstand extreme conditions
- Advanced noise cancellation technologies deliver clear audio in a variety of challenging scenarios
- Communications secured through a choice of encryption methods, including single-key AES

Ideal for fire departments, utilities, mining, hazmat responders and oil and gas workers, the XL-185P*i* delivers advanced connectivity with robust LMR voice and data over VHF, UHF or 700/800 frequencies. Wi-Fi® and Bluetooth® are also included as standard. This portable has a tough aluminum I-beam frame with seals hardened against water and dust penetration. Compact and ergonomic, the XL-185P*i* fits naturally into users' hands, with controls shaped for fast, easy gloved-hand operation.

Engineered for audio excellence with a 1.5 watt/4.0 watt max amplifier and woofer and tweeter speakers, the XL-185P*i* also features advanced noise cancellation technologies. These suppress acoustic feedback and provide clear audio communications in a wide range of conditions.

Standard security capabilities on the XL-185P*i* include single-key AES and DES encryption.

SPECIFICATIONS FOR: XL-185P*i*–INTRINSICALLY SAFE LAND MOBILE RADIO

GENERAL

Radio Models:		
Full Keypad	TFT LCD w/DTMF keypad, navigation cluster, soft keys	
Partial Keypad	TFT LCD w/partial keypad, navigation cluster, soft keys	
Dimensions w/Battery (H x W x D)	5.8 x 2.3 x 1.6 in (148.0 x 60.0 x 42.0 mm)	
Weight	17.9 oz (507 g) w/Battery and Antenna	10.4 oz (296 g) w/o Battery and Antenna
Housing Colors	Midnight Black, High-Visibility Yellow	
Interfaces:		
Front Display	320 x 178 pixels, 1.8 inch transflective LCD, 16-bit color with backlight	
Top Display	128 x 32 pixels, 1.1 inch multi-color backlight, sunlight readable	
Keypad	Backlight, 3 soft keys, 5-way navigation key, full DTMF keypad	
Buttons	Large PTT button, on/off knob, volume knob, red emergency button, 16-position top-mounted rotary knob, 2-position concentric switch, 4-position toggle switch, 3 programmable side buttons	
Tx/Rx Indicator	Multi-colored LEDs	
Transceiver	**Supported Bands** VHF, UHF or 700/800 MHz	**Channel Capacity** 12,500 (1,250 per mission plan)
Environmental:		
Relative Humidity	5% @ 140° F (+60° C), 95% @ 122° F (+50° C)	
Vibration	USDA LMR Standard, Section 2.15 and MIL-STD-810G, Test Method 514.6	
Drop Shock	1.0 meter drop to concrete (exceeds TIA-603-D)	
Immersion[1]	2 meters for 4 hours in accordance with MIL-STD-810G/IP68	
Operating Temperature[2]	-22° F to +140° F (-30° C to +60° C)	
Storage Temperature[3]	-40° F to +176° F (-40° C to +80° C)	
Altitude	**Operational** 15,000 feet (4,572 meters)	**In Transit** 50,000 feet (15,240 meters)
Electrical Input Voltage	7.5 VDC (nominal)	
GPS/GNSS Specifications:		
Channels	52	
Tracking Sensitivity (dBm)	-166 (GPS), -163 (GLONASS)	
Acquisition Sensitivity (dBm)	-146 (GPS)	
Cold Start w/-130 dBm input	<35 seconds	
Hot Start w/-130 dBm input	<1 second	
Safety:		
Hazardous Location Options	U.S.: Class 1, Division 1, Groups C and D; Class II, Division 1, Groups E, F and G; Class III, Division 1 hazardous locations; Class 1, Division 2, Groups A, B, C and D	
RoHS Compliant	Canada: Class 1, Division 2, Groups A, B, C and D hazardous locations	

[1] Optional feature
[2] Extreme low temperatures adversely affect battery life
[3] Store batteries at +25° C ± 5° C

LMR TRANSMITTER

Frequency Bands	VHF*	UHF*	700/800 MHz
Frequency Ranges (MHz) **Option 1 (U.S.)**	136-174	378-522	768-776, 798-806, 806-816, 851-861
Option 2 (International/Non-rebanded)	136-174	378-522	763-776, 793-806, 806-825, 851-870
Rated RF Power/Talkaround (W)	1-6	1-5	0.5-3
Frequency Stability (-30 to +60°C)	±1.0 ppm	±1.0 ppm	±1.0 ppm
Modulation Limiting (kHz)	2.5, 4, 5 (FM)	2.5, 4, 5 (FM)	2.5, 4, 5 (FM)
Audio Response (dB)	+1/-3	+1/-3	+1/-3
Spurious and Harmonics (dBc)	-80 (FCC Part 90)	-80 (FCC Part 90)	-80 (FCC Part 90)
FM Hum and Noise Companion Receiver (dB):			
@ 25 kHz	70	60	55
@ 12.5 kHz	47	47	45
Audio Distortion (%)	<1.25	<1.25	<1.25
Project 25 Modulation Fidelity (%)	1.0	1.0	1.0
Project 25 Adjacent Channel Power (dBc)	>71	>71	>71

*Full-spectrum multiband VHF and UHF product is compliant with applicable FCC narrowbanding mandate below 512 MHz

REGULATORY DATA

Frequency Range	RF Output	Frequency Stability	FCC Type Acceptance No.	Applicable FCC Rules	Industry Canada Certification No.	Applicable Industry Canada Rules	NTIA Cert. No.
136 - 174 MHz	6 W	±1.0 ppm	OWDTR-0153-E	22, 74, 80, 90	3636B-0153	RSS-119	SPS-217 49/1
378 - 522 MHz	5 W	±1.0 ppm	OWDTR-0152-E	22, 74, 80, 91	3636B-0152	RSS-119	SPS-217 49/1
768 - 776 MHz	3 W	±1.0 ppm	OWDTR-0151-E & OWDTR-0154-E	90	3636B-0151 & 3636B-0154	RSS-119	
798 - 806 MHz	3 W	±1.0 ppm	OWDTR-0151-E & OWDTR-0154-E	90	3636B-0151 & 3636B-0154	RSS-119	
806 - 816 MHz	3 W	±1.0 ppm	OWDTR-0154-E	90	3636B-0154	RSS-119	
806 - 825 MHz	3 W	±1.0 ppm	OWDTR-0151-E	90	3636B-0151	RSS-119	
851 - 861 MHz	3 W	±1.0 ppm	OWDTR-0154-E	90	3636B-0154	RSS-119	

SPECIFICATIONS FOR: **XL-185P*i*–INTRINSICALLY SAFE LAND MOBILE RADIO**

REGULATORY DATA

Frequency Range (MHz)		RF Output (W)	Frequency Stability	FCC Type Acceptance No.	Applicable FCC Rules	Industry Canada Certification No.	Applicable Industry Canada Rules	NTIA Cert. No.
851 - 869 MHz		3 W	±1.0 ppm	OWDTR-0151-E	90	3636B-0151	RSS-119	
2402 - 2460 MHz	VHF single band	0.2 W	N/A	OWDTR-0153-E	15	3636B-0153	RSS-119	
	UHF single band	0.2 W	N/A	OWDTR-0152-E	15	3636B-0152	RSS-119	
	RB single band	0.2 W	N/A	OWDTR-0154-E	15	3636B-0154	RSS-119	
	NRB single band	0.2 W	N/A	OWDTR-0151-E	15	3636B-0151	RSS-119	
5180 - 5825 MHz	VHF single band	.01 W	N/A	OWDTR-0153-E	15	3636B-0153	RSS-119	
	UHF single band	.01 W	N/A	OWDTR-0152-E	15	3636B-0152	RSS-119	
	RB single band	.01 W	N/A	OWDTR-0154-E	15	3636B-0154	RSS-119	
	NRB single band	.01 W	N/A	OWDTR-0151-E	15	3636B-0151	RSS-119	

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

LMR RECEIVER

Frequency Bands	VHF	UHF	700/800 MHz
Frequency Ranges (MHz):			
Option 1 (U.S.)	136-174	378-522	768-776, 851-861
Option 2 (International)	136-174	378-522	763-776, 851-870
Channel Spacing (kHz)	25 (wideband*), 12.5 (narrowband), 6.25 equiv (TDMA P25 Phase 2)		
Frequency Stability (-30 to +60°C)	±1.0 ppm	±1.0 ppm	±1.0 ppm
Sensitivity (dBm): **@ 12 dB SINAD**	-122	-121	-121 (700 MHz) -120 (800 MHz)
Project 25 Reference Sensitivity (dBm): **@ 5% BER**	-122	-121	-120.5
Analog Selectivity (dB):			
@ 25 kHz	77	77	74
@ 12.5 kHz	71	70	64
Project 25 Adjacent Channel Rejection (dB)	66.2	62.2	62
Offset Channel Selectivity (dB): **@ NPSPAC**	NA	NA	30
Intermodulation (dB)	80	81	77
Spurious and Image Rejection (dB)	90	87	80
FM Hum and Noise (dB):			
@ 25 kHz	-60	-60	-55
@ 12.5 kHz	-55	-53	-50
Audio Output - Rated/Max (mW)	1500 / N/A	1500 / N/A	1500 / N/A
Audio Distortion @ Rated Power (%)	1.1	1.1	1.1

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

ENVIRONMENTAL STANDARD

Applicable MIL-STD	Parameter	Methods	Procedure/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
	Contamination by fluids	504.1	2
	Rain	506.5	1, 3
	Humidity	507.5	2
	Salt fog	509.5	1
	Blowing dust and sand	510.5	1, 2
	Explosive atmosphere	511.5	1
	Immersion in water**	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
IEC 60529	Dust-tight, continuous immersion in water**		IP68

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

BROADBAND

Wi-Fi	802.11 b/g/n 2.4 GHz and 5 GHz
Bluetooth	Bluetooth 4.0 (128-bit encryption)

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DIGITAL OPERATION

Protocol	ProVoice™	P25
Vocoding Method	AMBE +2™ enhanced full rate	AMBE +2 enhanced full rate and enhanced half rate
Signaling Rate (kbps)	9.6	9.6
Modulation	GFSK	Phase 1 Tx: C4FM, Rx: C4FM and WCQPSK

ENCRYPTION

Encryption Algorithms	Voice Encryption: Single-key AES/DES, Multiple-key AES/DES, DES-OFB, Encryption Lite (ARC4), 256-bit AES P25, 64-bit DES Control Channel Encryption: 128-bit AES (LLA)
Encryption Keys per Radio	Capable of storing 128 keys (64 AES, 64 DES)
Keying	Harris Key Loader, Over-the-Air Rekeying (OTAR), Motorola KVL 3000+/4000
Standards	FIPS 140-2, FIPS 197

BATTERIES

Type	Dimensions (H x W x D)	Weight	Capacity (mAh)
Li-Ion	3.0 x 2.3 x 1.1 in	6.1 oz (174 g)	3300

ACCESSORIES

The XL-185Pi is available with a selection of dependable C1D1-rated Harris accessories that operate in a range of environments. Several are shown below.

Chargers

Harris offers a variety of chargers for the XL-185P*i*: 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

Standard speaker microphones, earphones for standard speaker microphones, belt clip, Lithium Ion battery, PC programming software and cables and antennas.

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About Harris Corporation

Harris Corporation is a leading technology innovator, solving customers' toughest mission-critical challenges by providing solutions that connect, inform and protect. Harris supports government and commercial customers around the world. Learn more at harris.com.

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