

FALCON III[®] RF-7800H-MP

Wideband HF/VHF Tactical Radio System

The L3Harris Falcon III RF-7800H-MP is the market leader for Type 3 wideband HF manpacks available today. Engineered for advanced security and performance, the wideband HF/VHF tactical radio system provides breakthrough data performance and interoperability with fielded Falcon II[®] HF radios, including the L3Harris RF-5800H manpacks.



This SWaP-optimized manpack provides continuous coverage from 1.5 to 60 MHz, 20 watts HF and 10 watts VHF on the power of a single battery. With its high-speed wideband waveform, the RF-7800H-MP transmits data in bandwidths from 3 kHz to 24 kHz (48 kHz capable). Data rates of up to 120 kbps are supported through technology that optimizes channel selection and adapts the selected channel to real-time conditions. Wideband capabilities can also be employed for synchronous and IP applications including L3Harris Wireless Message Terminal, Tactical Chat IP[®] and hC2[™] Patrol.

The RF-7800H-MP will protect the confidentiality of legacy and modern voice and data through modern algorithms, including the L3Harris proprietary Citadel[®] and AES encryption.

The RF-7800H-MP also offers current and legacy automatic link establishment (ALE) MIL-STD and NATO Standards, including 2G, 3G and 4G ALE, providing interoperability and ease of use with high performance and reliability. Ultra-robust 3G waveforms support Last Ditch Voice and SMS messaging in channels where legacy waveforms are inoperable.



BREAKTHROUGH WIDEBAND NETWORKING PERFORMANCE

KEY BENEFITS

- > Data rates up to 10 times greater than existing HF radios
- > Software-defined architecture supports in-field upgrades to future capabilities
- > Supports immediate system upgrade while utilizing existing legacy L3Harris HF accessories and mounting solutions
- > First 4G ALE wideband HF manpack



GENERAL	
RT Nomenclature	RF-7800H-MP
Frequency Range	1.5 - 59.999 MHz
Channel Spacing/ Bandwidth	10 Hz HF: up to 24 KHz VHF: 25 KHz
Net Presets	75
GPS	Commercial
Management Tool	Communications Programming Application (CPA)
Frequency Stability	±1x10 ⁻⁶

TRANSMITTER	
Power Output	HF: 1, 5, 20 watts PEP, -1/+1 dB VHF: 1, 5, 10 watts FM
Carrier Suppression	>60 dB below PEP (J3E mode)
Undesired Sideband Suppression	>60 dB below PEP output
Audio Output	12 mW at 1000 Ohms to external handset 0 dBm into 600 Ohms balanced

RECEIVER	
Sensitivity	SSB: -113 dBm (0.5 µV) for 10 dB SINAD
Squelch	Front panel adjustable, active squelch selectable
Audio Input	1.5 mV at 150 Ohms or 0 dBm at 600 Ohms for full rated output
IF Rejection	>80 dB
Image Rejection	>80 dB (1st IF Image)
AGC	Mode dependent, automatically selected

POWER	
Power Input	26 VDC (21.5 - 32 VDC)
Battery Types	BA-5590B/U Non-rechargeable LiSO ₂ battery BA-5390/U Non-rechargeable LiMnO ₂ battery BB-390B/U Rechargeable NiMH battery BB-2590/U Rechargeable Li Ion battery

SECURITY	
Encryption	Citadel, CAM (Customer Algorithm Modification), AES
Key Lengths	Citadel: 128 AES: 128/256 bit
Key Fill Device	Windows-based programming application

MODES AND WAVEFORMS	
Narrowband Waveforms	Fix Frequency, 2G ALE (MIL-STD-188-141A), 3G ALE (STANAG 4538 FLSU, MIL-STD-188-141B App A, App B Linking Protection AL-1), Serial Tone ECCM Falcon II® Interoperable, VHF FM
Wideband Waveforms	MIL-STD-188-110D
Voice Modes	HF: CLR, LPC-10-52E (600/2400), MELP 600/1200/2400, Last Ditch Voice (LDV), VHF: CVSD
Telephony	Embedded SIP (Session Initiation Protocol, VoIP)

PHYSICAL	
Dimensions	3.3 H x 7.9 W x 9.2 D in (8.3 H x 20 W x 23.4 D cm)
Volume	239.8 in ³ (3884 cm ³)
Weight	8.7 lbs (3.9 kg) without batteries
Color/Finish	CARC Green, tan and black

ENVIRONMENTAL	
Temperature	-40°F to +160°F (-40°C to +71°C)
Immersion	1 meter of water (3 ft)
Shock and Vibration/Sand/ Dust/Salt/Fog/Rain	Per MIL-STD-810G

INTERFACES	
Data	RS-232 Serial, USB, Ethernet with adapter
Audio	Microphone and balanced
Antenna Port	BNC connector and whip antenna base
Programming	Front panel, fill loader or Communications Programming Application (CPA)
Function Knob	OFF, PT (Plain Text), CT (Cypher Text), LD (Load), Z (Zeroize) and CLR Clear
Remote Control	ASCII, SNMP

STANDARD ACCESSORIES	
10515-0413-4200	Operator's Manual
10515-0413-4000	Operator's Card
10515-0413-4100	Field Reference Guide
RF-7800H-SW001	Communications Programming Application
RF-6705	Tactical Chat IP
12006-0117-08	GPS Antenna
10372-0240-02	OE-505 Manpack Antenna Kit
10372-1270-01	Dismount Dipole Adapter
10075-1399	H-250/U Lightweight Handset (Modified)
12043-4800-01	Battery Box
10303-1008-01	Ground Stake Kit
12043-2850-A006	Cable Assembly Program/Data (USB)

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