L3HARRIS FALCON III® RF-7800H-MP

Wideband HF/VHF Tactical Radio System

The L3Harris Falcon III RF-7800H-MP is the smallest, lightest and fastest Type 3 wideband HF manpack available today. Engineered for advanced security and performance, the Wideband HF/VHF Tactical Radio System leverages Falcon II® interoperability along with breakthrough high-speed data.

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. The system’s wideband waveform supports data transmission at rates up to 120 kbps in bandwidths from 3 to 24 kHz. Wideband capabilities can also be employed for synchronous and IP applications including L3Harris Wireless Messaging Terminal, Tactical Chat IP® and hC2™ Patrol.

Embedded Citadel® and AES encryption ensure secure communications. High-performance Automatic Link Establishment and data link protocols support fast, reliable and error-free data transfer—even under the most challenging channel conditions. This tactical system also extends range by operating over degraded communication channels. Ultra-robust 3G waveforms support Last Ditch Voice and SMS messaging in channels where legacy waveforms are inoperable.

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**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**: $\pm 1 \times 10^{-6}$

**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

**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-5590BU Non-rechargeable LiSO2 battery
  - BA-5390U Non-rechargeable LiMnO2 battery
  - BB-2590U Rechargeable Li Ion battery

**Security**
- **Encryption**: Citadel, CAM (Customer Algorithm Modification), AES, AVS (Analog Voice Security)
- **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
- **Wideband Waveforms**: MIL-STD-188-110C Appendix D, DTE synchronous data and IP data
- **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 in³ (3884 cm³)
- **Weight**: 8.7 lbs (3.9 kg) without batteries
- **Color/Finish**: CARC Green, tan and black

**Environmental**
- **Temperature**: -40° F to +159.8° 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**
- **10515-0413-6000**: RF-7800H e-Pub CD documentation
- **10515-0413-4200**: Operator’s Manual
- **10515-0413-4000**: Operator’s Card
- **10515-0413-4100**: Field Reference Guide
- **10515-6648**: Instruction Sheet, Dismount Dipole Adapter
- **10515-0413-6000**: Communications Programming Application
- **RF-6551H**: Tactical Chat Communications Software
- **12006-0017-02**: GPS Antenna
- **10372-0240-02**: QE-505 Manpack Antenna Kit
- **10372-1260-01**: 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)