

FALCON III® RF-7850M-V51X

Multiband Networking Vehicular Radio

The L3Harris RF-7850M-V51X is engineered for space-constrained platforms that require increased power for high-speed, long-range tactical communications. Equipped with enhanced Falcon III® wideband and narrowband capabilities, this multiband solution is also interoperable with the L3Harris Falcon II® radio family and the L3Harris RF-7800I Tactical Networking Intercom System.



The RF-7850M-V51X is ideal for traditional Combat Net Radio missions, ground-to-air, and Company and Below voice and data communications. It leverages the TDMA Networking Waveform family for true simultaneous voice and data services over wideband, narrowband and ECCM channels.

This waveform family is also available in the Falcon III Multiband, airborne, and soldier radios to support seamless communications across the battlefield.

The Multiband Networking Vehicular Radio's large multilingual display and built-in WebUI applications deliver maximum mission flexibility. Now, capabilities such as text and file transfer can be accessed directly from the radio, further reducing soldier payload.

The optional WebUI provides additional applications including friendly force tracking, video streaming, remote control and others for use at all levels of the battlefield.



LONG-RANGE WIDEBAND NETWORKING

KEY BENEFITS

- > High-speed wideband and narrowband networking, and SATCOM capable
- > Secured with L3Harris Citadel® and AES encryption
- > 50 W power VHF, 20 W power UHF
- > High-rate ECCM and Free Channel Search
- > L3Harris Falcon II and Falcon III interoperability
- > Software Defined Radio architecture
- > Available ARROW™ waveform enables resilient interoperability with L3Harris RF-7800V, RF-7850A/D, AN/PRC-158, AN/PRC-163 and AN/PRC-167 radios

GENERAL	
RT Nomenclature	RF-7850M-V51X
Frequency Range	Narrowband: 30-512 MHz Wideband: 225-512 MHz AM: 108-512 MHz
Channel Spacing/Bandwidth	8.33 kHz (AM only), 12.5 kHz (AM only), 25 kHz, 75 kHz*, 1.2 MHz*
Net Presets	25 total
GPS	Internal GPS Accepts external GPS input

TRANSMITTER	
Power Output	30-108 MHz: 5 W, 20 W, 50 W (user selectable) 108-512 MHz: 5 W, 10 W 20 W (user selectable) UHF SATCOM: 5 W, 20 W, 50 W (user selectable)
Audio Output	Variable and fixed levels
Frequency Stability	±1 parts per million

RECEIVER	
Sensitivity	VHF FM: -112 dBm @ 12 dB SINAD UHF FM: -118 dBm @ 12 dB SINAD UHF AM: -103.5 dBm @ 10 dB SINAD
Squelch	Selectable: Noise, tone, CTCSS, digital
IF Rejection	> 70 dB
Image Rejection	> 70 dB

POWER	
Power Input	20 VDC - 32 VDC
Power Consumption	Max 450 W

SECURITY	
Encryption	128 and 256 bit L3Harris proprietary Citadel® AES 128 and 256 Customer Algorithm Modification

MODES AND WAVEFORMS	
Voice and Data Modes	AM/FM Analog Voice FSK/ASK MELP Voice FSK/ASK CVSD Voice FSK/TCM Data GMSK/QPSK Data* ECCM
ECCM	Quicklook 1A, 2, 3 and Quicklook-Wide*
Narrowband Networking	TDMA Networking Waveform (TNW) 25K* and 75K*
Wideband Networking	M-TNW*, ANW2°C
Optional Waveforms	SINGARS with Pavilion encryption Satellite Tactical Communications (STC) HAVEQUICK I/II APCO P25 Phase 1 conventional mode ARROW

PHYSICAL	
Dimensions	7.87 H x 7.48 W x 13.5 D in (20.0 H x 19.0 W x 34.3 D cm)
Weight	< 28.0 lbs (< 13.6 kg)
Color/Finish	CARC Green CARC Black CARC Tan

ENVIRONMENTAL																	
Temperature	Storage: -22°F to +158°F (-30°C to +70°C) Operation: -22°F to +140°F (-30°C to +60°C)																
Immersion	1 meter																
MIL-STD 810G	<table border="0"> <tr> <td>Altitude Storage</td> <td>Altitude Operation</td> </tr> <tr> <td>Rapid Decompression</td> <td>Thermal Shock</td> </tr> <tr> <td>Solar Radiation</td> <td>Blowing Rain</td> </tr> <tr> <td>Humidity</td> <td>Salt Fog</td> </tr> <tr> <td>Sand and Dust</td> <td>Explosive Atmosphere</td> </tr> <tr> <td>Vibration</td> <td>Functional Shock</td> </tr> <tr> <td>Shock, Crash Hazard</td> <td>Icing/Freezing Rain</td> </tr> <tr> <td>Fungus</td> <td></td> </tr> </table>	Altitude Storage	Altitude Operation	Rapid Decompression	Thermal Shock	Solar Radiation	Blowing Rain	Humidity	Salt Fog	Sand and Dust	Explosive Atmosphere	Vibration	Functional Shock	Shock, Crash Hazard	Icing/Freezing Rain	Fungus	
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INTERFACES	
Data	IP, USB RNDIS, Serial and WPAN
Audio	Standard 6 Pin, IP
Antenna Port	BNC; 50 Ohms
Programming	USB, Ethernet
Remote Control	IP, Serial
Web UI	IP, Web Browser (Chrome, FireFox, Safari)

STANDARD KIT INCLUDES	
12112-6027-01	Mounting Plate Assembly
10570-0720-01	Install Kit with DC Power Cable
10515-0366-4200	System Install & Maintenance Manual

*Indicates RF-7850M-SW002 software option

See L3Harris Product Catalog for accessories.

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