

L3HARRIS FALCON III® **RF-7850S SPR™**

Advanced Wideband Secure Personal Radio (SPR)

The L3Harris Falcon III RF-7850S SPR provides the ultimate integration of radio, edge device, GPS and application software in a single, compact and lightweight platform.



Equipped with the unique L3Harris Soldier-TDMA Networking Waveform (S-TNW), the radio delivers team-based voice, fully networked platoon-wide communication and reliable position reports, ensuring every soldier stays connected. It provides both wideband and narrowband operation modes and meets specific needs of soldier-level communications with multiple talk groups, ad-hoc mesh networking and multi-hop forwarding.

Engineered to meet the challenges of today's digital battlefield, the RF-7850S SPR's simple, robust web-based user interface can be viewed with a supported web browser on any edge device. Because it comes with the easy-to-use L3Harris Ground Force Tracker, it puts battle-management systems capability into the hands of every soldier, whatever device is used. This allows soldiers to download maps and see the location of all on the network.

The RF-7850S SPR is interoperable with legacy L3Harris SPR and Falcon III radio families. Plus, its Software Defined Radio architecture supports simplified in-field configuration and upgrades to new capabilities.



POWERFUL CONNECTIVITY FOR EVERY SOLDIER

KEY BENEFITS

- > Ultimate integration of radio, edge device, GPS and application software in a single platform
- > Every soldier stays connected with unique soldier-specific waveform delivering wideband and narrowband operation
- > Enhanced sharing of intelligence with multiple talk groups, ad-hoc mesh networking and multi-hop forwarding
- > Battle-management systems capability brought to soldier level through L3Harris Ground Force Tracker

GENERAL	
RT Nomenclature	RF-7850S
Frequency Range	TGW2 and S-TNW 225-2500 MHz LOS/FSK 225-512 MHz TNW 225-511.975 MHz
Channel Spacing/Bandwidth	Wideband modes: 500, 1.2 MHz, 5.0 MHz Narrowband mode: 25 kHz Channel spacing: 25 kHz
Net Presets	13
GPS	Built-in GPS with automatic position reporting
Management Tool	Communication Planning Application (RF-7850SH-CD001)
Frequency Tuning	10 Hz
Frequency Stability	± 1.0 ppm
Alerts	Audible status, optional foreign language prompts
Voice Operations	Full duplex audio Multiple, concurrent talk-groups with multiple Push-To-Talk (PTT) operation Stereo audio capable Selectable PTT activation

TRANSMITTER	
Power Output	3.2 W
Audio output	Stereo and mono audio output

RECEIVER	
Sensitivity	-116 dBm @ 12 dB SINAD
Adjacent Channel Rejection	1.2 MHz (HB) +/- 2.4 MHz 40 dB 5 MHz (HB) +/- 10 MHz 50 dB
Squelch	Noise or Tone
Noise Floor (NF)	≤ -148 dBc/Hz
Audio input	1k Ohms +/- 10%

POWER	
Power Input	8.5 V to 16.9 VDC
Battery Types	Rechargeable Hi-Cap Lithium-Ion HH Battery

SECURITY	
Encryption	256-bit Advanced Encryption Standard (AES) 256-bit Citadel® encryption algorithm

MODES AND WAVEFORMS	
Narrowband Waveforms	TDMA Networking Waveform: <ul style="list-style-type: none"> Narrowband communication mode Optimized voice and guaranteed GPS reporting Frequency hopping (ECCM) operation VHF-UHF Line-Of-Sight: <ul style="list-style-type: none"> Narrowband communication mode Interoperable with L3Harris radio systems

MODES AND WAVEFORMS	
Wideband Waveforms	Soldier-TDMA Networking Waveform: <ul style="list-style-type: none"> Advanced wideband communication for team, squad or platoon-level deployments Simultaneous voice and data IP data up to 1.5 Mbps Multiple talk groups Guaranteed position reports from every soldier Ad-hoc mesh networking protocols
Talk Group Wideband Waveform (TGW2)	<ul style="list-style-type: none"> TDMA-based advanced wideband communication (TGW2) for team-level deployments Simultaneous voice and data, up to 240 kbps Frequency 225 MHz to 2.5 GHz
Voice and Data Modes	MELPe and CVSD Voice
Telephony	Embedded SIP

PHYSICAL	
Dimensions	~ 8.3 H x 3.1 W x 2 D in (21.0 H x 8.0 W x 5.0 D cm) with standard battery
Weight	< 1.8 lbs. (0.81 kg) w/battery
Volume	Approx. 475 cc
Color	Green/Black/Tan CARC Paint

ENVIRONMENTAL	
Temperature	-22°F to +131°F (-30°C to +55°C)
Immersion	2 meters for 30 minutes
Shock and Vibration	Ground portable
Sand/Dust/Salt Fog/Rain	MIL-STD-810G, Test Methods 510.5, 509.5 and 506.5
Humidity	MIL-STD-810G, Test Method 507.5

INTERFACES	
Data	USB 2.0, IP over USB, RS232
Audio	9-pin SPR Fischer connector for stereo audio and multiple PTT control
Antenna Port	TNC connector
Function Knob	16-position knob
Remote Control	ASCII and Web API optional
Wireless Personal Area Network (WPAN optional)	Embedded Wi-Fi, Bluetooth, Bluetooth Low Energy
Embedded Applications	Web User Interface with built-in Ground Force Tracker, compatible with standard internet browsers
GPS Antenna Port	SMA female connector

STANDARD KIT	
12121-2730-01 (225-450 MHz, 1250-1390 MHz, and 1755-1850 MHz)	Tri-Band Antenna
12041-2400-0X	Rechargeable Battery
RF-7850SH-CD001	Communications Programming Application
10515-0474-4100	Field Reference Guide

See L3Harris Product Catalog for accessories

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