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FAST. FORWARD.

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, battle-management systems capabilities are in the hands of every soldier, whatever device is used. This allows soldiers to download maps and see the location of all soldiers 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

> Primed for Soldier Systems integration with both L3Harris and COTS devices

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GENERAL

RT Nomenclature	RF-7850S
Frequency Range	TGW2 and S-TNW 225-2500 MHz LOS/FSK 225-512 MHz TNW 25K & 75K 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 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: • Narrowband communication mode • Optimized voice and guaranteed GPS reporting • Frequency hopping (ECCM) operation • TNW 25 and TNW 75 VHF-UHF Line-Of-Sight: • Narrowband communication mode • Interoperable with L3Harris radio systems
Talk Group Wideband Waveform (TGW2)	• 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

MODES AND WAVEFORMS

Video TDMA Networking Waveform (V-TNW*) *optional add-on*	Advanced Warfighter Video Waveform: • Offers video streaming capability at the tactical edge • Optimized to support multiple video streams to provide battlefield SA and intelligence • Supports up to two talk groups if needed to confirm video intelligence
Vanguard™ and Vapor™ *optional add-on*	Enhanced, resilient tactical edge waveforms that deliver hopping capability along with high speed IP data
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
10515-0474-4100	Field Reference Guide

See L3Harris Product Catalog for accessories

Non-Export Controlled Information

L3Harris Technologies is the Trusted Disruptor in the defense industry. With customers' mission-critical needs always in mind, our 50,000 employees deliver end-to-end technology solutions connecting the space, air, land, sea and cyber domains in the interest of national security.

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