

FALCON III[®] RF-7850S SPR[™]

Advanced wideband Secure Personal Radio (SPR)

The L3Harris Falcon III[®] RF-7850S SPR integrates radio, edge device, GPS and application software into a single, compact and lightweight platform.

Equipped with the unique L3Harris Soldier-TDMA Networking Waveform (S-TNW), the radio delivers team-based voice communications, platoon-wide networking and reliable position reporting, ensuring every soldier remains connected. It provides both wideband and narrowband operation modes and meets the demands 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 in any supported web browser on an edge device. Because it comes with the easy-to-use L3Harris Ground Force Tracker, battle-management capabilities are in the hands of every soldier, regardless of the device. This allows soldiers to download maps and view the location of all personnel on the network.



The RF-7850S SPR is interoperable with legacy L3Harris SPR and Falcon III radio families. Plus, its software-defined radio (SDR) architecture supports simplified in-field configuration and capability upgrades.



POWERFUL CONNECTIVITY FOR EVERY SOLDIER

KEY BENEFITS

- > Equipped with Type 3 ANW2[®]C standard and long-range modes — increasing wideband interoperability, range and mission flexibility
- > Long-range, wideband interoperability and high-speed IP-networked data and Full Motion Video (FMV) enhance situational awareness and tactical ISR
- > Integrated radio, edge device, GPS and application software in a single platform
- > Soldier-specific waveform ensures continuous connectivity with both wideband and narrowband operation
- > Enhanced sharing of intelligence with multiple talk groups, ad hoc mesh networking and multi-hop forwarding
- > Battle-management systems capability delivered at the soldier level via L3Harris Ground Force Tracker
- > Primed for Soldier Systems integration with L3Harris and commercial off-the-shelf (COTS) devices

GENERAL	
RT Nomenclature	RF-7850S
Frequency Range	ANW2C* 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 MHz Narrowband mode: 25 kHz Channel spacing: 25 kHz
Network 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 outputs

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 CONTINUED	
Video TDMA Networking Waveform (V-TNW*)	Advanced Warfighter Video Waveform: > Provides video streaming 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
STNW	Supports both 1.2 and 5 MHz bandwidths. Designed for platoon-wide communication architecture with reliable voice and PLI
ANW2C*	Supports both 1.2 and 5 MHz bandwidths
Vanguard™ and Vapor™**	> Resilient tactical edge waveforms with hopping and high-speed IP data > VaporX is available for long range, point-to-point, asymmetric, data-only use cases to the Vanguard and Vapor description
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, RS-232
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®, 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 | *Optional add-on

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