L3HARRIS®
FAST. FORWARD.

FALCON® III RF-7850A-ER EMBEDDABLE MODULAR RADIO

Single Channel, Small Form Factor Embeddable Modular Radio Powered by Optional Fast-Hopping, Anti-Jam Resilient Waveforms

Designed for unmanned aerial deployment, the RF-7850A-ER provides resilient connectivity to Group 1+ low-payload UAVs. This embeddable radio delivers advanced Intelligence, Surveillance and Reconnaissance (ISR) and communications relay capabilities with resilient, high-speed data and video transmission for improved Situational Awareness (SA) and decision making.

The RF-7850A-ER provides flexible capabilities to support modern Concept of Operations (CONOPS) at the tactical edge, including robust and resilient transmission of voice, data, video and position location information (PLI). The proven, leading-edge technology in this low SWaP, software-defined embeddable is derived from and interoperable with the L3Harris Falcon III line of radios for secure, reliable communications.

The RF-7850A-ER offers a number of mission-critical options, including the Vapor™ fast-hopping, anti-jam resilient waveform. With it, teams can stay connected and in control even in contested, congested and EW-challenged environments. Its resilience enables a robust, reliable ISR video downlink from air-to-ground, delivering mission-critical information to decision makers right when it is needed.

The RF-7850A-ER is also equipped with the combat-proven TNW 75 waveform—a resilient, narrow band networking waveform that features advanced capability to evade adversarial EW detection.

With the RF-7850A-ER embedded as part of your Group 1 and 2 unmanned aerial systems, you can create a network for system control, high-throughput and low latency ISR, communications relay extension, or SWARM control at a moment's notice. The radio operates between 225-2500 MHz, with a maximum throughput of 4Mbps.

Whether for UxV control, video dissemination, Mobile Ad Hoc Network (MANET) or advantage node range extension, the RF-7850A-ER provides a highly integrated, secure communication link that significantly expands current tactical network capabilities in support of fast-evolving missions.

EXTENDED RANGE AND ADVANCED AERIAL ISR

KEY BENEFITS

> Provides high-speed networked data and video via 4 Mbps Video TDMA Networking Waveform (V-TNW)

> Fulfills evolving mission needs for ISR, close combat support and joint operations with ground troops

> Available with resilient, jam-resistant Vanguard™ and Vapor™ waveforms

> Improves and expands battlefield communications with an interoperable airborne relay node

> Based on combat-proven L3Harris Falcon III® technology

> Full compatibility with legacy narrowband

> Designed to easily integrate into a wide variety of Group 1+ UAV platforms

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GENERAL

RT Nomenclature	L3Harris Falcon III® RF-7850A-ER
Frequency Range	225 MHz to 2.5 GHz
Future-proof	Software Defined Radio
GPS	Internal GPS; supports external GPS devices
Bandwidth	25 kHz 1.2 MHz 5 MHz 75kHz 500kHz
Voice	MELPe

TRANSMITTER

Operating Voltage	0.25, 1.0, or 3.2 W User-selectable levels

SECURITY

Encryption	AES-128 AES-256 Citadel 128 Citadel 256

POWER

Power Input	10.6 – 34 VDC

ENVIRONMENTAL

Shock and Vibration	Designed to MIL-STD-810G
Temperature	Operating: -30°C to +55°C Storage: -40°C to +85°C
EMI/RFI	Designed to MIL-STD-461F

PHYSICAL

Dimensions	3.4 H x 2.5 W x 1 D in (8.63 H x 6.35 W x 2.54 D cm)
Volume	4.4 in^3 (72.1 cm^3)
Weight	160 grams

MODES AND WAVEFORMS

Narrowband Waveforms	**TDMA Networking Waveform:** • Narrowband communication mode • Optimized voice and guaranteed GPS reporting • Frequency hopping (ECCM) operation **UHF Line-Of-Sight:** • Narrowband communication mode • Interoperable with L3Harris radio systems
Wideband Waveforms	M-TNW or ANW2®C S-TNW
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
Video TDMA Networking Waveform (V-TNW) Optional add-on	**Advanced Warfighter Video Waveform:** • Offers video streaming capability at the tactical edge and in the sky • 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

INTERFACES

Antenna Port	SMPM
Programming	USB
Power Connector	Deans connector

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