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FAST. FORWARD.

FALCON® IV RF-9820S-ER EMBEDDABLE MODULAR RADIO

Single channel, small form factor embeddable modular radio powered by the Wraith™ fast-hopping, anti-jam resilient waveform

The single channel RF-9820S-ER Embeddable Modular Radio delivers robust voice and data capabilities for missions on the move. This multi-mission solution gives warfighters the flexibility of tactical mobile ad-hoc network (MANET) control for Group 1+ UAVs.

Ease of integration is critical for every embeddable device to ensure our communications payload can be successful on any platform. The RF-9820S-ER delivers that and more, with a resilient waveform — Wraith — that makes it ideal for mobile, tactical edge operations in close proximity to adversarial interference such as jamming.
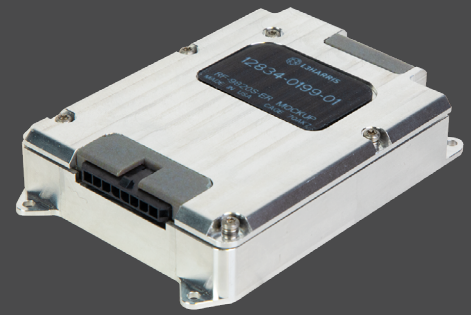
Wraith is a self-healing, frequency-hopping MANET waveform optimized for sharing wideband voice, data and position location information (PLI) across a variety of platforms. It provides connectivity for ground-to-air, air-to-air, beyond line-of-sight and other applications using advanced techniques that reduce the effectiveness of enemy electronic warfare attack and detection activities including targeting, interception and jamming.

Wraith can support up to 140 nodes on a single network with multiple data streams and up to 16 talk groups. It is configurable for low latency, high throughput mission sets across a variety of use cases from high-quality video relay to coordinated SWARM control, advantage node range extension and a variety of UAV to UAS MANET-enabled autonomy scenarios.

Users can reduce the probability of detection or interception by choosing from a wide range of power outputs, ranging from 3.2 W all the way down to 50 mW. Wraith operates from 225 MHz to 450 MHz and from 1.3 GHz to 2.6 GHz with selectable 1.25, 5 and 20 MHz bandwidths.

A key benefit of the RF-9820S-ER is that it is based upon our currently fielded AN/PRC-171 technology. This means that the RF-9820S-ER is fully interoperable with fielded AN/PRC-171, AN/PRC-163, and AN/PRC-167 radios across the DOD and with international allies. Any of these fielded ground radios can provide direct UAS control via the Wraith waveform. The RF-9820S-ER is also capable of hosting third party waveforms though the dual-boot capability.

The RF-9820S-ER is size, weight and power optimized for Group 1 and Group 2 UAS platforms. It features commercially available connectors, offers world class AES-256 encryption and can operate as a non-CCI high-assurance relay. The radio hardware is capable of continuous RF frequency coverage from 225 MHz to 2.6 GHz.

KEY BENEFITS

> Maintain network integrity in congested and contested environments with resilient Wraith waveform

> Easy to use, integrate and upgrade using provided programming tools and commercial connectors

> Interoperable with fielded L3Harris Falcon IV radios; allows for UAV control through fielded radios

> Software-defined radio capable of being field upgraded and storing multiple waveforms

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

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GENERAL

Frequency Ranges	**Wraith** 225-450 MHz and 1.3-2.6 GHz **ULOS** 225-512 MHz AM/ASK, 762-870 MHz FM/FSK and 225-2.6GHz L/S
Supported Waveforms	**Wraith** 1.2 MHz, 5 MHz, and 20 MHz **ULOS** 25 KHz ***TSM™** (optional) 1.2 MHz, 3.6 MHz, 10 MHz, 20 MHz and 40 MHz
GPS	Internal GPS
Management Tools	Windows® based communication planning application (CPA), Wraith™ CPA Plug-in Wizard, WebMMI for networking monitoring, remote management and *TrellisWare™ Management Tool
Frequency Tuning	10 Hz
Encryption	AES-256
Unmanned Aerial Systems Solutions	Group 1+
Power	Input: 9-32 VDC Output: User selectable from 50 mW to 3.2 W

ENVIRONMENTAL (INTEGRATION DEPENDENT)

Operating Temperature	-30ºC to +55ºC (operational)
Emissions	RE102
MIL-STD-810G	Vibration High temperature (operational) High altitude (operational)

PHYSICAL (INTEGRATION DEPENDENT)

Dimensions	3.82 H x 2.66 W x 0.76 D in (9.7 H x 6.8 W x 1.9 D cm)
Volume	7.72 in^3
Weight	182 g

CONNECTORS / INTERFACES (CUSTOMIZABLE)

Primary I/O	Audio, Ethernet, USB (USB-OTG, USB-H1, serial RNDIS 232, serial UART)
Power	Direct to PWB
Antenna Port	Direct to PWB
GPS	Direct to PWB
Mounting Plate	Optional

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