

## **FALCON IV® RF-9800W-EA**

High-capacity radiohead with CAMAN™  
cognitive networking MANET waveform

The L3Harris RF-9800W family changes the game for robust, wireless broadband connectivity across kinetic vehicular, airborne and maritime platforms. The RF-9800W-EA (radiohead) combines a groundbreaking cognitive MANET waveform with autonomous spectrum sensing, maximized throughput and ultra-low latency to keep communications flowing through today's contested and congested environments.



**RF-9800W-EA**  
HIGH-CAPACITY MANET RADIO

The RF-9800W-EA meets the challenges presented by the rapidly evolving modern battlespace, delivering advanced capabilities you won't find in competitive radios while reducing cognitive burden on users.

A powerful combination of robust hardware, CAMAN — a cognitive MANET waveform and intelligent software — reduces stress and distraction at critical moments by automatically optimizing and reassigning frequencies without user input.

With the addition of autonomous spectrum sensing, Tx power control and optimized frequency selection, the RF-9800W-EA provides a resilient solution supporting hundreds of nodes.

The RF-9800W-EA's adaptable MANET provides instant infrastructure delivering a robust, agile network designed with the growing tactical internet of things (TIIoT) in mind. Node clusters can be created based on location or traffic patterns, improving throughput, reducing latency at the halt and on the move, and creating an efficient IP network.

Operating on an expanded continuous spectrum of 1.3-2.7 GHz or 4.4-5.9 GHz, the RF-9800W-EA provides a 2x2 MIMO channel for simultaneous operation across multiple licensed and unlicensed frequency bands, providing more spectrum than any competitive device.

Security of data and management traffic is supported through embedded or external device encryption.

Electronically beamed smart antenna elements are radio controlled, supporting the dynamic selection of a focused beam for consistent high-throughput connectivity to one or multiple radios. This radiohead is entirely plug and play and MIL-STD ruggedized against shock, vibration, sand, dust, salt fog, immersion and humidity.

### KEY BENEFITS

- > Send and receive more data, faster with Ethernet data rates over 300 Mbps
- > Maintain comms integrity in congested and contested environments
- > Get multiple clear, detailed, real-time ISR feeds
- > Combines a high-capacity radio, electronically steered antenna and front-end modules for unparalleled performance



GENERAL	
Frequency Range	RF-9800W-EA10x: 1.3-2.7 GHz RF-9800W-EA20x: 4.4-5.9 GHz
System Capability	LOS and non-LOS (OFDM)
Operating Modes	2x2 MIMO MANET
Software Architecture	Upgradeable via HTTPS interface
Max Ethernet Rate	Greater than 300 Mbps
Range	255 km clear LOS

POWER	
Power Requirements	PoE++ (802.3bt class 8)

SECURITY	
Encryption	FIPS 140-3 level 2 (future)
Interference Control	Optimized frequency selection, automatic transmit power control, adaptive modulation

PHYSICAL	
Dimensions	RF-9800W-EA10x: <17 D x <20 H in RF-9800W-EA20x: <15 D x <18 H in
Weight	RF-9800W-EA10x: <30 lbs RF-9800W-EA20x: <28 lbs

ENVIRONMENTAL	
Temperature	MIL-STD-810H: high/low temperature operation and storage, temperature shock
Vibration	MIL-STD-810H
Transit Drop	MIL-STD-810G
Altitude	MIL-STD-810H

NETWORK	
QOS	802.1p, DiffServ
VLAN	802.1Q
Network Connection	10/100/1000 BASE-T Ethernet
System Configuration	HTTPS internet browser interface, SNMP, SSH, isolated serial management interface
Network Management	SNMP v3, auto crossover (Ethernet), improved diagnostics (BIT), SNTP, Syslog

WIRELESS	
Wireless Transmission	OFDM, time division duplex (TDD) and time-frequency division multiple access (TFDMA), multiple input multiple output (MIMO)
Channel Width	5-40 MHz (1.2, 2.5 MHz future)
Channel Spacing	0.5 MHz
Max TX Power	Average transmit power of >45 dBm per polarization
Rx Sensitivity	-103 to -58 dBm
Modulation	QPSK to 256 QAM, 2x2 MIMO, spatial multiplexing

WAVEFORM	
Type	CAMAN, a time-frequency division multiple access (TFDMA) mobile ad hoc networking (MANET) mesh waveform
Characteristics	Self-forming, self-healing, self-optimizing MANET
Encryption	FIPS 197 advanced encryption standard (AES) with a 256-bit key
Data Rates	Greater than 300 Mbps
Channel Access	Time division duplex (TDD)

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1025 W. NASA Boulevard  
Melbourne, FL 32919

[L3Harris.com](https://www.l3harris.com)