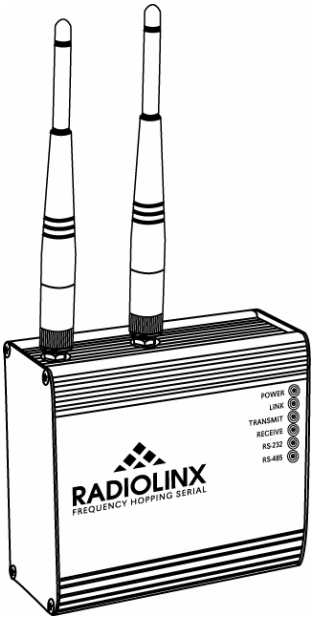
RadioLinx Frequency Hopping Serial Modem

RLX-FHS



Product Applications

The RadioLinx RLX-FHS wireless radio modem provides the ultimate in performance and reliability.

The RLX-FHS provides integrated support for Modbus ASCII, Modbus RTU, DF1 and ASCII protocols and supports your industrial application's RS-232, RS-422, or RS-485 serial interfaces.

The RLX-FHS is the ideal solution for:

- *Distributed I/O*
- *Industrial Automation*
- *Oil and Gas Field Monitoring*
- *SCADA*
- *Water and Wastewater*
- *Real-time access to remote, difficult to reach, and/or mobile data*

Product Description

The RadioLinx RLX-FHS industrial grade wireless radio modem uses advanced digital signal processing (DSP) to provide the ultimate in performance and reliability. The versatility of the DSP core and small DIN rail-mountable form factor make the RLX-FHS ideally suited for industrial and utility wireless applications.

The RLX-FHS operates in the license-free 2.4 GHz ISM band and can be used throughout the world with no site licenses or monthly leased line/wireless service fees.

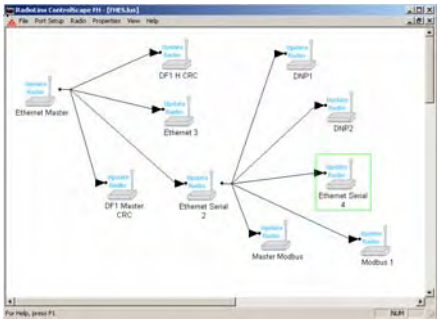
The RLX-FHS is designed to operate in high interference environments by combining advanced frequency hopping and digital signal processing technology with outstanding receiver sensitivity and antenna diversity. This combination results in exceptional noise and interference rejection.

Multiple device networks can be designed to share the same RF network (channel) allowing different protocols to share a common repeater. Remote RLX-FHS can be programmed to operate as store and forward repeaters to extend network range.

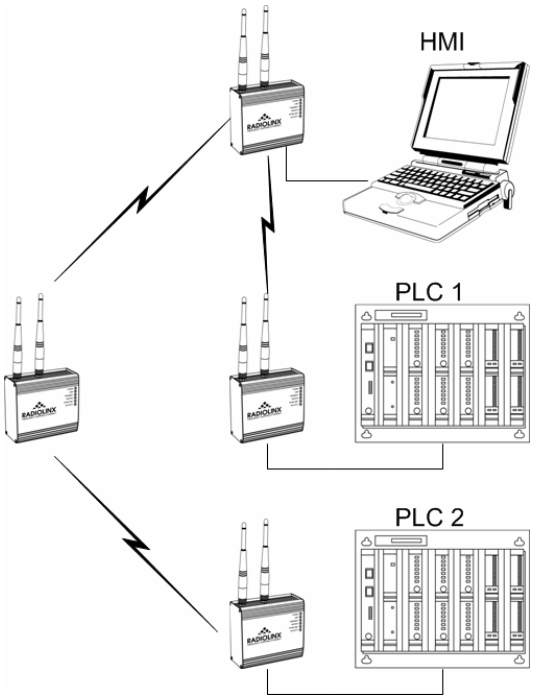
The RLX-FHS operates in point-to-point, point-multipoint or peer-to-peer modes. Addressable multi-drop RS-485 operation is built into the module. The RF output levels are user-configurable and 32 data channels allow multiple networks to operate in the same area.

Ease of Use

The Windows-based graphical user interface makes the RLX-FHS easy to install and operate. Troubleshooting is simplified with remote diagnostics and an extensive context-sensitive online help system. The RadioLinx Startup Guide gets your wireless Serial modems installed and communicating in 5 easy steps. Our Application Connection Guides make connecting your wireless modems to network devices quick and easy.



A low latency switch enabled by the user with the Setup software can be used for industrial protocols such as DF1, to provide faster response times and a reduction in latency.



Network Flexibility

- Up to 1000 addressed devices with 2000 radios and 78 repeaters per network
- 32 user-selectable data channels for multiple network operation
- Dual transmit and receive antenna support for maximum performance, networking flexibility, and reliability

General Specifications

General specifications include:

- 2.4 GHz frequency hopping spread spectrum (FHSS) technology
- Intelligent routing of DF1, DNP 3.0 and Modbus messages
- Secure wireless communications with data encryption, proprietary radio protocol, and 2.4 GHz FHSS physical layer
- Industrial temperature range
- Compact, rugged DIN rail mountable
- Automatic antenna diversity
- Up to 16 mile range with high-gain antennas (longer with repeaters)
- Remote diagnostics

RadioLinx Security

Network Architecture Security
The RLX-FHS uses a proprietary RF protocol and 158 unique hopping patterns to prevent unwarranted interception of RadioLinx data transmission.

Hardware Based Encryption
Data is encrypted in the RadioLinx hardware using proven algorithms and 40 or 128-bit encryption keys. Encrypted data never reaches another device, eliminating the means most often used to crack the encryption key and decipher data.

Functional Specifications

Data Interface

Ports:	RS-485, RS-422, and RS-232
Communications:	Asynchronous half-duplex/full-duplex
I/O Data Rate:	2400 bps to 115.2 Kbps full duplex
Encryption:	ARC4 (40 or 128 bit)
Network Topology:	Point-to-Point, store and forward repeater, point-to-multipoint; peer-to-peer
Hop Patterns:	32 independent, non-interfering networks
Error Detection/Correction	32-bit CRC and ARQ (Automatic Re-Send Query
Latency	<20ms

Transceiver Characteristics

Frequency:	2.4 – 2.4835; varies per country.*
Radio Type:	Frequency hopping spread-spectrum (FHSS)
# of Frequency Channels:	79 for USA; varies per country.
Output Power:	1mW – 250mW, programmable. Varies per country *
Channel Data Rate	250 Kbps
Receiver Sensitivity	-96 dBm @ 10^{-6} BER
Adjacent Channel Rejection	>40 dB
Spurious Rejection	>50 dB
* See Ordering Information for details	

Hardware Specifications

Supply Voltage	10 – 24 VDC (-15%/+20%)
Power (average)	<4W
Size	4.10 in. W x 3.71 in. H x 2.05 in. D (104.1 mm W x 94.23 mm H x 52.07 mm D)
Weight	~1 lb (454 g)
Operating Temperature	-40°F to 167°F (-40°C to +75°C)
Humidity	To 90% RH (non-condensing)
Antenna	Two reverse polarity SMA connectors; automatic antenna diversity
Typical Indoor Range	500 – 1500 ft (150 – 450 meters)
Typical Outdoor Range	Up to 16 miles (25 kilometers) line of sight with high gain antennas
Software	Windows-based user setup, diagnostic, and communication software

Documentation

A CD is included with the product that includes User Manuals, Conformance Documents, etc. The CD's contents are all available from the web site as well.

Certifications

FCC	FCC Part 15.247
Industry Canada	RSS 210
Europe	ETSI 300.328, ETSI 300.826, EN60950
UL	UL 1604 Class 1 Division 2, Groups A, B, C, D Temp Code T4A
CSA/cUL	C22.2 No. 213-1987
CE/Europe	ETSI 300 328, ETSI 301 489, EN 60950 ATEX Pending
Mexico	Nom_121_SCT1_2 or 1
Australia	AS/NZS 4771
South Korea	MIC RRL
Singapore	IDA TS SSS

Visit our web site for the latest certification information.

Additional Products

ProSoft Technology, Inc offers a full compliment of accessories for the RadioLinx line of wireless switches. Visit our web site or contact the factory for a complete and up-to-date list of available RadioLinx products.

Ordering Information

To order this product, please use the following:

RadioLinx 2.4 GHz Wireless Ethernet Switch

Country	Catalog #	Frequency	RF Power	Power Supply
Australia	RLX-FHS-AU	2400-2483.5 MHz	4 W	EU
China	RLX-FHS-CN	2400-2483.5 MHz	500 mW EIRP	EU
Europe	RLX-FHS-EU	2400-2483.5 MHz	100 mW EIRP	EU
France	RLX-FHS-FR	2400-2454 MHz	100 mW EIRP	EU
Israel	RLX-FHS-IL	2418-2457 MHz	100 mW EIRP	EU
Mexico	RLX-FHS-MX	2450-2483.5 MHz	650 mW EIRP	US
Saudi Arabia	RLX-FHS-SA	2413-2439 MHz	100 mW EIRP	US
Singapore	RLX-FHS-SG	2400-2483.5 MHz	100 mW EIRP	EU
United Kingdom	RLX-FHS-UK	2400-2483.5 MHz	100 mW EIRP	EU
USA	RLX-FHS-US	2400-2483.5 MHz	4 W	US

Power Supplies **US** – 120VAC to 12VDC 60 Hz
EU – 250VAC to 12VDC 50 Hz

To place an order, contact your ProSoft Technology product distributor. To locate the authorized ProSoft Technology product distributor nearest you, visit our web site.

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For pricing and availability
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