

# RadioLinx Frequency Hopping Serial

## RLX-FHS



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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 64 data channels allow multiple networks to operate in the same area.

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## Features and Benefits

- Supports up to 1000 addressed devices with 2000 radios and 78 repeaters per network
- 64 user-selectable data channels for multiple network operation
- Active antenna diversity
- 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
- 15+ mile range with high-gain antennas (longer with repeaters)
- Remote diagnostics without interrupting data communications
- Three year standard warranty

## Specifications

| Radio                      |   |
|----------------------------|---|
| Frequency                  | 2400 to 2483.5 MHz (varies by country)  |
| Protocols                  | All standard IEEE 802.3 protocols   |
| Encryption                 | ARC4 (40 or 128 bit)  |
| Network Topology           | Peer-to-Peer, store and forward repeater, Point-to-Point, Point-to-Multipoint |
| Hop Patterns               | 64 independent, non-interfacing networks                                      |
| Error Detection            | 32-bit CRC and ARQ (Automatic Re-Send Query)                                  |
| Radio Type                 | Frequency Hopping Spread Spectrum   |
| Output power               | 1mW to 250mW, programmable (varies by country)                                |
| Channel data rates         | 250 Kbps  |
| Receiver sensitivity       | -96 dBm @ 10 <sup>-6</sup> BER  |
| Channels - user selectable | 64 North America (varies by country)  |
| Adjacent Channel Rejection | >40 dB  |
| Spurious Rejection         | >50 dB  |
| Typical indoor range       | 500 to 1500 ft (150 to 450 meters)  |
| Outdoor range              | 15 + miles line of sight with high-gain antennas                              |
| Security                   | ARC4 (40 or 128 bit)  |

## Physical

|                 |  |
|-----------------|--|
| Enclosure       | Extruded aluminum with DIN and panel mount             |
| Size            | 4.10" x 3.71" x 2.05" (104.1 mm x 94.23 mm x 52.07 mm) |
| Vibration Shock | IEC 60068-2-6<br>IEC 60068-2-27                        |

|               |   |
|---------------|---|
| Ports         | RS-232, DB-9<br>RS-422 and RS-485<br>Asynchronous half-duplex/full-duplex<br>2400 bps to 115.2 Kbps full duplex |
| Antenna ports | (2) RP-SMA connectors, automatic antenna diversity  |
| Weight        | 1 lbs /454g   |

### Environmental

|                       |                                       |
|-----------------------|---------------------------------------|
| Operating temperature | -40 °C to +75 °C (-40 ° F to 167 ° F) |
| Humidity              | To 90% RH, non-condensing             |
| External power        | 10 to 24 VDC                          |
| Average power         | <4W                                   |

### Regulatory Approvals

#### Type Approvals

|                 |   |
|-----------------|---|
| FCC             | FCC Part 15.247   |
| Industry Canada | RSS 210   |
| Europe / CE     | LVD EN 50850-2000<br>RF Safety EN 50364-2001<br>EMC EN 301 489-1, EN 301 489-17<br>Spectrum EN 300 328 v1.4.1 |
| Mexico          | Nom 121 SCT1 2 or 1   |
| Australia       | AS/NZS 4771   |
| Brazil          | 365 / 2004 e<br>238 / 2000  |
| Malaysia        | SIRIM   |

#### Hazardous Locations

|             |   |
|-------------|---|
| UL          | UL 1604 Class 1 Division 2, Groups A, B, C, D Temp Code T4A |
| CSA/cUL     | C22.2 No. 213-1987  |
| ATEX Zone 2 | ATEX II 3 G EEx nC IIC                                      |

Visit our web site for the latest certification information.

### Additional Products

ProSoft Technology offers a full complement of hardware and software solutions for a wide variety of industrial communication platforms.

Visit our web site at <http://www.prosoft-technology.com> for a complete list of products.

### Ordering Information

Use the following Ordering Information to identify the radio product needed for your region. If you are unsure which radio to select, please contact your local distributor.

#### **RadioLinx 2.4 GHz Wireless Ethernet Switches (FHE, FHS, and FHES)**

| Country   | Catalog #   | Frequency          |
|-----------|-------------|--------------------|
| Australia | RLX-FHxx-AU | 2400 to 2483.5 MHz |
| Brazil    | RLX-FHxx-US | 2400 to 2483.5 MHz |

| Country        | Catalog #   | Frequency          |
|----------------|-------------|--------------------|
| China          | RLX-FHxx-CN | 2400 to 2483.5 MHz |
| Europe         | RLX-FHxx-EU | 2400 to 2483.5 MHz |
| France         | RLX-FHxx-FR | 2400 to 2454 MHz   |
| India          | RLX-FHxx-UK | 2400 to 2483.5 MHz |
| Malaysia       | RLX-FHxx-UK | 2400 to 2483.5 MHz |
| Mexico         | RLX-FHxx-MX | 2450 to 2483.5 MHz |
| Saudi Arabia   | RLX-FHxx-SA | 2413 to 2439 MHz   |
| Singapore      | RLX-FHxx-SG | 2400 to 2483.5 MHz |
| South Africa   | RLX-FHxx-EU | 2400 to 2483.5 MHz |
| South Korea    | RLX-FHxx-EU | 2400 to 2483.5 MHz |
| United Kingdom | RLX-FHxx-UK | 2400 to 2483.5 MHz |
| USA            | RLX-FHxx-US | 2400 to 2483.5 MHz |
| Venezuela      | RLX-FHxx-VE | 2400 to 2483.5 MHz |

| Country        | RF Power    | Power Supply |
|----------------|-------------|--------------|
| Australia      | 4W          | AU           |
| Brazil         | 4W          | US           |
| China          | 500 mW EIRP | EU           |
| Europe         | 100 mW EIRP | EU           |
| France         | 100 mW EIRP | EU           |
| India          | 100 mW EIRP | UK           |
| Malaysia       | 100 mW EIRP | UK           |
| Mexico         | 650 mW EIRP | US           |
| Saudi Arabia   | 100 mW EIRP | US           |
| Singapore      | 100 mW EIRP | UK           |
| South Africa   | 100 mW EIRP | EU           |
| South Korea    | 100 mW EIRP | EU           |
| United Kingdom | 100 mW EIRP | UK           |
| USA            | 4W          | US           |
| Venezuela      | 4W          | US           |