



**New!**

# Messenger 900XS Spread Spectrum Radio

*High performance, Encrypted, License Free Wireless Data Communications*

- Reliable wireless communications for industrial SCADA systems
- Point-to-Multipoint, Peer-to-Peer and Mesh operation
- High penetration 900MHz operation: outdoor range up to 20+ miles as well as in-plant applications
- 1 watt unlicensed spread spectrum radio, 100% compatible with Digi Xtend radios
- Secure AES-256 encrypted communications
- Store & Forward Repeater operation to extend radio range
- RS-232, RS-485 and USB Communications Interfaces
- Allen-Bradley (DF1), Modicon (Modbus) and Harris (DNP3) protocol support
- Low-power and smart power management for solar/battery backed applications
- 10Vdc to 30Vdc DC power
- Choice of MMCX or RPSMA antenna connections
- Compact DIN Rail Mounting
- Wide operating Temperature Range: -40°C to +70°C
- 3-year factory warranty on parts and labor



Secure Serial Data Radio  
(shown with RPSMA antenna connector option)

## License-free Wireless Communications

– Messenger 900XS radios operate in the 900MHz license-free ISM band, providing plug-and-play simplicity with extreme data integrity. By automatically hopping among 50 different frequencies, the radios avoid and reject interference from other wireless devices as well as spurious man-made and natural noise sources.

## High Security Data Encryption -

Messenger series radios encrypt all messages sent over the air. The AES encryption used is the same technology used for banking, national security and other critical applications. Built-in data encryption and decryption ensures that your data is kept out of unauthorized hands, yet the radios are easy to use since encryption is transparent to the sending and receiving equipment.

**Supported by most PLCs, RTUs & HMIs** Messenger series radios can be used with nearly any industrial control device with a standard serial port. No modem control signals are used and messages are transferred in error-checked packets, compatible with standard protocols including Modbus, DF1 and DNP3.

## Point-to-point, Peer-to-peer and Mesh Topologies

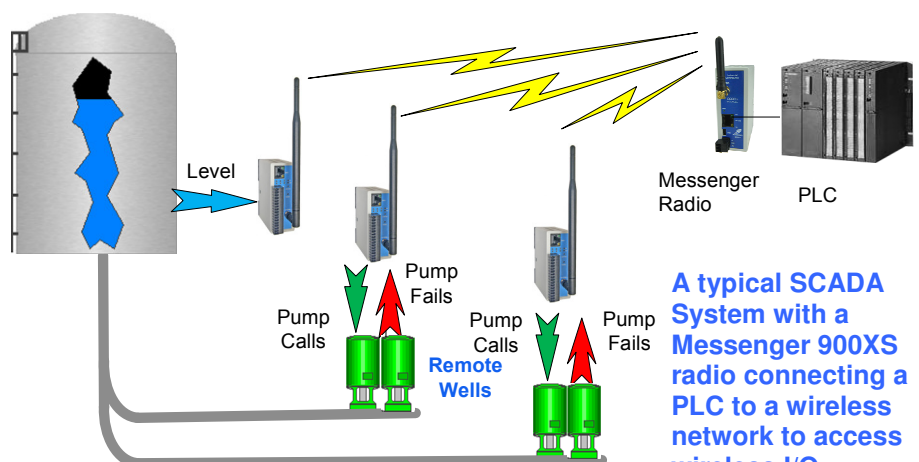
– Messenger 900XS radios provide true “masterless” operation, supporting peer-to-peer and mesh configurations that eliminate the single point-of-failure vulnerabilities of competing wireless solutions that do require a master radio for operation.

**Integral Repeater Functionality** – Any Messenger 900XS radios can also serve as repeaters, effectively extending the range of your wireless network when a reliable point-to-point link cannot be established.

## USB, RS-232 and RS-485 Interfaces–

Messenger Series radios offer three communications interfaces to simplify connection into nearly any system; RS-232 and RS-485 for use in legacy point-to-point and multi-drop configurations, and USB for more modern systems and PC computers.

**Rugged Reliability** – Messenger 900XS radios are 100% tested over an extended temperature range of -40 C to 70 C, and backed by an industry leading 3-year factory parts and labor warranty.



**A typical SCADA System with a Messenger 900XS radio connecting a PLC to a wireless network to access wireless I/O.**

## Specifications

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### RF Performance

Transmit Power	1 Watt nominal, 1mW to 1 Watt (user configurable)
Receiver Sensitivity	-110 dBm @ 9600bps data rate (10,000bps RF data rate) -100 dBm @ 115,200 bps data rate (125,000 bps RF data rate)
Operating Frequency	902MHz to 928MHz
Spread Spectrum	FHSS (Frequency Hopping Spread Spectrum)
Modulation	FSK (Frequency Shift Keying)
Channel Capacity	10 hop sequences share 50 frequencies

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### Communications

Supported Network Topologies	Peer-to-peer ("Master/Slave" relationship not required), Point-to-Point, Mesh
Encryption	256-bit or 128-bit AES Encryption (user configurable)
Serial Data Rate (RS-232/RS-485)	1200 baud or 230400bps (user configurable)

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### Certifications (partial list)

FCC Part 15.247	OUR-9XTEND
Industry Canada (IC)	4214A-9XTEND

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### Terminal Blocks (power)

Removable, 3.5mm (0.138"), 12 to 22AWG, 15A/contact maximum

### Antenna Connector

RPSMA (Reverse-polarity SMA) or MMCX (specify by part number), 50 ohms, unbalanced

### Mounting

35mm. DIN rail

### Dimensions

1.4"W x 3.7"H x 3.8"D (includes terminal block and elevation off panel on DIN rail)

### Environment

- 40°F(- 40°C) to 158°F (70 °C), 5%RH to 95% RH, non-condensing

### Power

10 to 30Vdc

#### Receive/Idle

0.45W

#### Transmitting

3.75W (1 Watt output)  
2.75W (0.5 Watt output)  
1.50W (100 mW output)

### Warranty

3 years, factory parts and labor

### Part Numbers

**98-1403** 900 MHz Messenger 900XS (Xtend) 1W Spread Spectrum Data Radio, MMCX Antenna Connector  
**98-1404** 900 MHz Messenger 900XS (Xtend) 1W Spread Spectrum Data Radio, RPSMA Antenna Connector

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## Represented by:

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