XStream® OEM RF Modules

900 MHz and 2.4 GHz Embedded RF Modules for OEMs

Embedded RF modules provide outstanding range (up to 20 miles) in a low-cost wireless solution.
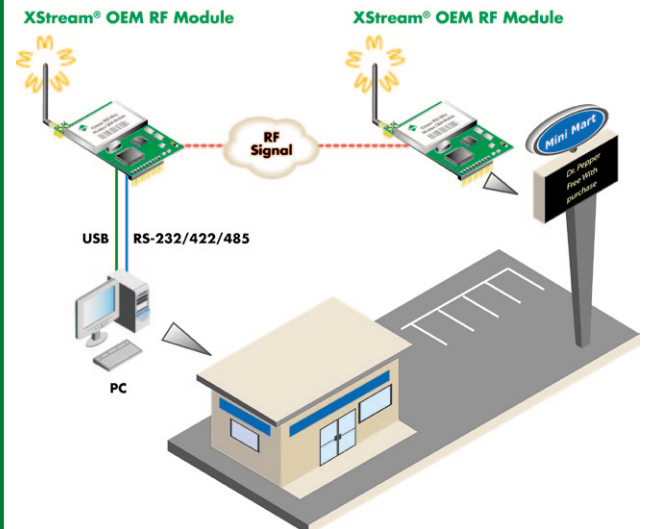

Overview

Digi's XStream embedded RF modules enable easy and reliable serial wireless connectivity between devices with minimal development out-of-the-box. With 900 MHz and 2.4 GHz configurations, XStream RF modules provide transmission ranges of up to 20 miles in a low-cost wireless solution.

Innovations stamped in their design enable XStream RF modules to yield two- to eight-times the range of competing RF devices. This allows OEMs and integrators to cover more ground with fewer devices, with increased reliability. Additionally, XStream RF modules are easy to use, thereby reducing the complexity of data system development and time to market.

Available in a variety of configurations, including Commercial or Industrial temperature ratings, and multiple antenna variants, XStream RF modules can wirelessly connect a variety of devices across many applications including remote monitoring, building automation/security, industrial automation/SCADA, fleet management/asset tracking and sensor data capture in embedded systems.

Application Highlight

Features/Benefits

- **Indoor/Urban range up to 1500 feet (900 MHz model)**
  - **Outdoor line-of-sight range up to 20 miles (with high gain antenna)**
- **7 frequency hopping channels each with 65K available addresses**
- **Outstanding receiver sensitivity (-110 dB @ 9600 bps)**
- **Low-power features for power-sensitive applications**
  - **Pin, serial port and cyclic sleep modes available**
- **Performs retries and acknowledgments for reliable packet delivery**
- **Multiple antenna options (Wire Whip, MMCX, RPSMA)**
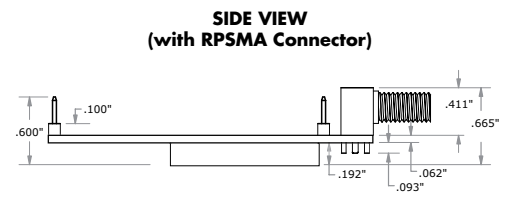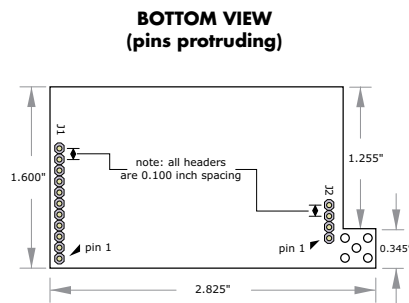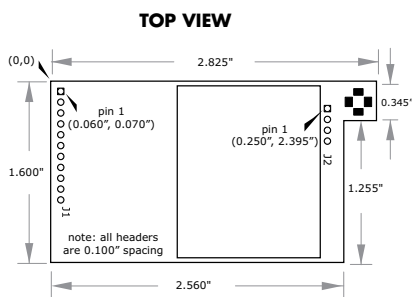- **Commercial (0° C to 70° C) and Industrial temperature ratings (-40° C to 85° C)**

Specifications	9XStream® (900 MHz)		24XStream® (2.4 GHz)	
Performance				
Indoor/Urban Range (w/ 2.1 dB dipole antenna)	Up to 1500 ft (450 m)		Up to 600 ft (180 m)	
Outdoor RF Line-of-Sight Range (w/ 2.1 dB dipole antenna)	Up to 7 miles (11 km)		Up to 3 miles (5 km)	
Outdoor RF Line-of-Sight Range (w/ high-gain antenna)	Up to 20 miles (32 km)		Up to 10 miles (16 km)	
Transmit Power Output	100 mW (20 dBm)		50 mW (17 dBm)	
Interface Data Rate (software selectable)	10 - 57600 bps (including non-standard baud rates)		10 - 57600 bps (including non-standard baud rates)	
Throughput Data Rate	9,600 bps	19,200 bps	9,600 bps	19,200 bps
RF Data Rate	10,000 bps	20,000 bps	10,000 bps	20,000 bps
Receiver Sensitivity	-110 dBm	-107 dBm	-105 dBm	-102 dBm
Power Requirements				
Supply Voltage	5V (± 0.25V) regulated		5V (± 0.25V) regulated	
Receive Current	50 mA		80 mA	
Transmit Current	140 mA		150 mA	
Power-down Current	< 26 µA		< 26 µA	
General				
Dimensions (L x W x H)	1.600 in x 2.825 in x 0.350 in (4.06 cm x 7.18 cm x 0.89 cm)		1.600 in x 2.825 in x 0.350 in (4.06 cm x 7.18 cm x 0.89 cm)	
Weight	0.8 oz (24 g)		0.8 oz (24 g)	
Operating Temperature	0º C to 70º C (commercial) or -40º C to 85º C (industrial)		0º C to 70º C (commercial) or -40º C to 85º C (industrial)	
Antenna Options	RPSMA, MMCX or Wire Antenna		RPSMA, MMCX or Wire Antenna	
Networking & Security				
Operating Frequency	ISM 902 - 928 MHz		ISM 2.4000 - 2.4835 GHz	
Supported Network Topologies	Peer-to-Peer (no master/slave dependencies), Point-to-Point, Point-to-Multipoint, Multidrop		Peer-to-Peer (no master/slave dependencies), Point-to-Point, Point-to-Multipoint, Multidrop	
Number of Channels (software selectable)	7 Frequency Hopping Channels		7 Frequency Hopping Channels	
Network Filtration Layers	VID, Channel, Destination Address		VID, Channel, Destination Address	
Agency Approvals				
FCC Part 15.247	OUR9XSTREAM		OUR-24XSTREAM	
Industry Canada (IC)	4214A-9XSTREAM		4214A 12008	
Europe	N/A		ETSI	

TOP VIEW

BOTTOM VIEW (pins protruding)

SIDE VIEW (with RPSMA Connector)

Visit www.digi.com for part numbers.

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