

XStream™ Wireless OEM Modules

900 MHz & 2.4 GHz FREQUENCY HOPPING SPREAD SPECTRUM TRANSCEIVERS



LONG RANGE

- 110 dBm receiver sensitivity (industry avg. only -93 dBm)
- Up to 1500 ft. (450 m) indoor/urban (900 MHz)
- Up to 7 mi. (11 km) line-of-sight w/ dipole
- Up to 20 mi. (32 km) line-of-sight w/ high gain

LOW POWER

- 150 mA transmit / 50 mA receive current
- Power down current to <26 μ A



ADDITIONAL FEATURES

- Plug-and-communicate (no configuration required)
- Transparent operation supports existing software & systems
- Simple configuration using software & standard AT commands
- Retries & acknowledgements for guaranteed packet delivery
- RS-232/422/485 protocol & multi-drop bus support
- Peer-to-peer, point-to-point & point-to-multipoint networks
- Up to 65,000 network addresses available
- Allows up to 7 Frequency Hopping Spread Spectrum independent pairs (networks) to operate in close proximity
- Low power modes for current consumption as low as 1 mA
- Host interface baud rates from 1200 bps to 57600 bps
- XON / XOFF or hardware flow control
- Signal strength reporting for link quality monitoring & debugging
- Support for multiple data formats (7/8 bits, Even/Odd/No Parity)

Options

- 900 MHz or 2.4 GHz license-free ISM bands
- 9600 bps or 19200 bps over-the-air data rates
- Integrated wire antenna or antenna connector (RPSMA or MMCX)
- Commercial (0° to +70° C) or industrial (-40° to +85° C) grades

APPLICATIONS

Monitoring of
remote systems



Production reporting
of active systems



Home automation &
building control



Supervisory control
& data acquisition



Vehicle management
& asset tracking



XStream™ OEM RF Modules were designed to provide product designers with a transparent and easy to design-in wireless serial communication link.

No configuration is required. Simply output serial data from any microcontroller or RS-232 port into the XStream modules to send FCC & ETSI approved, frequency hopping spread spectrum data.

The XStream modules can be configured to integrate quickly and seamlessly into any new or existing design requiring advanced networking. Configurations can include point-to-point, point-to-multipoint, multi-drop/peer-to-peer (default) communications.

The 9XStream has the best sensitivity in the industry, making it one of the longest range, low cost radio modems available to date.

The 24XStream can provide high performance and dependable operation for deployment throughout the world (visit MaxStream.net for more details).

These radios are perfect for applications in automatic meter reading (AMR), supervisory control and data acquisition (SCADA), home automation, security, instrument monitoring and point of sale (POS) systems among many others.

MaxStream also offers XStream stand-alone radio modems and wireless development kits. The entire family of XStream wireless products provide long range, low power performance at low cost.



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Specifications	9XStream (900 MHz)	24XStream (2.4 GHz)
(Transmit-only version available at 9600 bps)		
General		
Frequency	902-928 MHz	2.4000-2.4835 GHz
Spreading Spectrum Type	Frequency hopping, direct FM	Frequency hopping, direct FM
Network Topology	Point-to-multipoint, point-to-point multi-drop transparent	Point-to-multipoint, point-to-point multi-drop transparent
Channel Capacity	7 hop sequences share 25 frequencies	7 hop sequences share 25 frequencies
Serial Data Interface	RS-232/422/485	RS-232/422/485
Interface Data Rate	Software selectable 1200-57,600 bps	Software selectable 1200-57,600 bps
Power Requirements		
Supply Voltage	5 VDC regulated	5 VDC regulated
Transmit Current	150 mA	150 mA
Receive Current	50 mA	50 mA
Power Down Current	26 µA	26 µA
Physical Properties		
Module Board Size	1.6" x 2.825" x 0.35" (4.06 cm x 6.86 cm x 0.89 cm)	1.6" x 2.825" x 0.35" (4.06 cm x 6.86 cm x 0.89 cm)
Weight	0.8 oz (24 g)	0.8 oz (24 g)
Connector	11-pin & 4-pin 0.1" spaced male Berg-type headers	11-pin & 4-pin 0.1" spaced male Berg-type headers
Operating Temperature	0° to +70° C (commercial) -40° to +85° C (industrial)	0° to +70° C (commercial) -40° to +85° C (industrial)
Antenna		
Integrated Wire (optional)	1/4 wave monopole	1/4 wave monopole
Integrated Wire Gain	1.9 dBi	1.9 dBi
Integrated Wire Length	3" (7.62 cm) integrated wire	3" (7.62 cm) integrated wire
Connector (optional)	Reverse-polarity SMA or MMCX	Reverse-polarity SMA or MMCX
Impedance	50 ohms unbalanced	50 ohms unbalanced
Certifications		
FCC Part 15.247	OUR9XSTREAM	OUR-24XSTREAM
Industry Canada	4214A-9XSTREAM	4214A 12008
Europe	N/A	ETSI
Performance		
Indoor/Urban Range	Up to 1500' (457 m)	Up to 600' (183 m)
Outdoor LOS Range	Up to 7 mi. (11 km) w/ dipole Up to 20 mi. (32 km) w/ high-gain	Up to 3 mi. (5 km) w/ dipole Up to 10 mi. (16 km) w/ high-gain
Throughput Data Rate	1,200 bps 9,600 bps 19,200 bps	9,600 bps 19,200 bps
RF Data Rate	1,280 bps 10,000 bps 20,000 bps	10,000 bps 20,000 bps
Transmit Power Output	100 mW (20 dBm) 100 mW (20 dBm) 100 mW (20 dBm)	50 mW (17 dBm) 50 mW (17 dBm)
Receiver Sensitivity	-114 dBm -110 dBm -107 dBm	-105 dBm -102 dBm