



50 MW/2.4 GHZ STAND-  
ALONE RADIO MODEMS

# XSTREAM® RF MODEMS

2.4 GHz stand-alone RF modems provide outstanding range (up to 10 miles) in a low-cost wireless solution

Digi's XStream RF modems can be configured in minutes to provide low-cost serial cable replacement between all types of electronic devices. XStream-PKG modems provide transmission ranges of up to 10 miles in a low-cost wireless solution. The modems are coupled with a DIP-switchable RS-232/422/485 interface board and regularly outperform more expensive RF modems.

Innovations stamped in their design enable XStream modems to yield two- to eight-times the range of competing modems. This allows OEMs and integrators to cover more ground with fewer devices.

Additionally, XStream-PKG modems are easy to use, thereby reducing the complexity of data system development.

Available in a variety of data interface options, including RS-232/422/485 serial, USB and telephone, XStream-PKG modems 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.



## BENEFITS

- Indoor/Urban range up to 600 feet (180 m)
- Outdoor line-of-sight range up to 10 miles (16 km) (with high gain antenna)
- 7 frequency hopping channels, each with 65K available addresses
- Outstanding receiver sensitivity (-105 dBm @ 9600 bps)
- Low power consumption for power-sensitive applications
  - Pin, serial port and cyclic sleep modes available
- Performs retries and acknowledgments for reliable packet delivery
- Easy out-of-the-box operation — no configuration necessary
- Durable industrial grade enclosure

## RELATED PRODUCTS



XStream® OEM  
RF Module



XTend®  
RF Modem



XBee® 900HP  
RF Modem

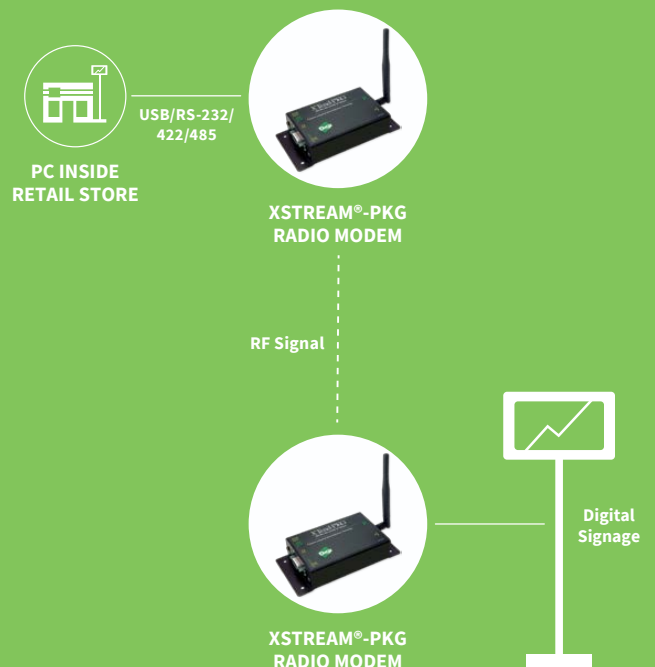


XBee-PRO®  
900HP Module



XCTU

## APPLICATION EXAMPLE



## SPECIFICATIONS

## XStream®-PKG-R

## | XStream®-PKG-U

### PERFORMANCE

INDOOR/URBAN RANGE (W/ 2.1 DB DIPOLE ANTENNA)	Up to 600 ft (180 m)
OUTDOOR RF LINE-OF-SIGHT RANGE (W/ 2.1 DB DIPOLE ANTENNA)	Up to 3 miles (5 km)
OUTDOOR RF LINE-OF-SIGHT RANGE (W/ HIGH-GAIN ANTENNA)	Up to 10 miles (16 km)
TRANSMIT POWER OUTPUT	50 mW (17 dBm)
INTERFACE DATA RATE (SOFTWARE SELECTABLE)	10 - 57600 bps (including non-standard baud rates)
THROUGHPUT DATA RATE	9,600 bps or 19,200 bps
RF DATA RATE	10,000 bps (@9,600 bps throughput data rate) or 20,000 bps (@19,200 bps)
RECEIVER SENSITIVITY	-105 dBm (@9,600 bps throughput data rate), -102 dBm (@19,200 bps)

### POWER REQUIREMENTS

SUPPLY VOLTAGE	7 - 18V	5 - 12V
RECEIVE CURRENT	90 mA @ 2.4 GHz	115 mA @ 2.4 GHz
TRANSMIT CURRENT	180 mA @ 2.4 GHz	200 mA @ 2.4 GHz
POWER-DOWN CURRENT	< 1 mA	50 mA

### GENERAL

CONNECTION OPTIONS	RS-232/485 DB-9	USB
DIMENSIONS (L X W X H)	2.75 in x 5.50 in x 1.12 in (4.06 cm x 7.18 cm x 0.89 cm)	
WEIGHT	7.10 oz (200.00 g)	
OPERATING TEMPERATURE	0° C to 70° C (commercial) or -40° C to 85° C (industrial)	
ANTENNA OPTIONS	RPSMA (Reverse Polarity SMA)	
IMPEDANCE	50 ohms unbalanced	

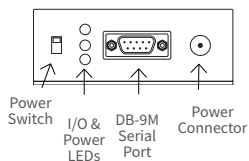
### NETWORKING & SECURITY

OPERATING FREQUENCY	ISM 2.4000 - 2.4835 GHz
SPREAD SPECTRUM	FHSS (Frequency Hopping Spread Spectrum)
MODULATION	FSK (Frequency Shift Keying)
SUPPORTED NETWORK TOPOLOGIES	Peer-to-Peer (no master/slave dependencies), Point-to-Point, Point-to-Multipoint, Multidrop
NUMBER OF CHANNELS (SOFTWARE SELECTABLE)	7 Frequency Hopping Channels
NETWORK FILTRATION LAYERS	VID, Hopping Channel, Destination Address

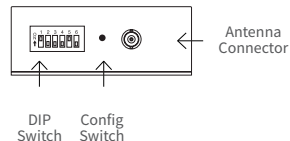
### AGENCY APPROVALS

FCC PART 15.247	OUR-24XSTREAM
INDUSTRY CANADA (IC)	4214A 12008

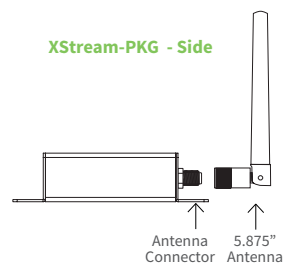
XStream-PKG-R - Front



XStream-PKG-R - Back



XStream-PKG - Side



PART NUMBERS	DESCRIPTION
X24-009PKC-U	XStream-PKG 2.4 GHz, 9600 baud, commercial, USB, no accessories
X24-009PKC-UA	XStream-PKG 2.4 GHz, 9600 baud, commercial, USB
X24-009PKI-R	XStream-PKG 2.4 GHz, 9600 baud, industrial, RS-232, no accessories
X24-009PKI-RA	XStream-PKG 2.4 GHz, 9600 baud, industrial, RS-232
X24-019PKC-U	XStream-PKG 2.4 GHz, 19200 baud, commercial, USB, no accessories
X24-019PKC-UA	XStream-PKG 2.4 GHz, 19200 baud, commercial, USB
X24-019PKI-R	XStream-PKG 2.4 GHz, 19200 baud, industrial, RS-232, no accessories
X24-019PKI-RA	XStream-PKG 2.4 GHz, 19200 baud, industrial, RS-232

FOR MORE INFORMATION  
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