



2.4 GHZ EMBEDDED RF  
MODULES FOR OEMS



# XSTREAM<sup>®</sup> OEM RF MODULES

Embedded RF modules provide outstanding range (up to 10 miles) in a low-cost wireless solution

Digi's XStream embedded RF modules enable easy and reliable serial wireless connectivity between devices with minimal development out-of-the-box. XStream RF modules provide transmission ranges of up to 10 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

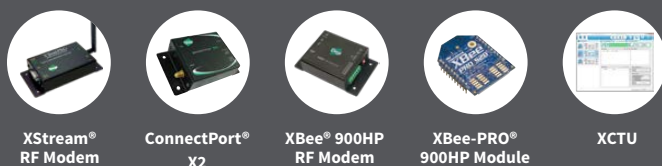
reducing the complexity of data system development and time to market.

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.

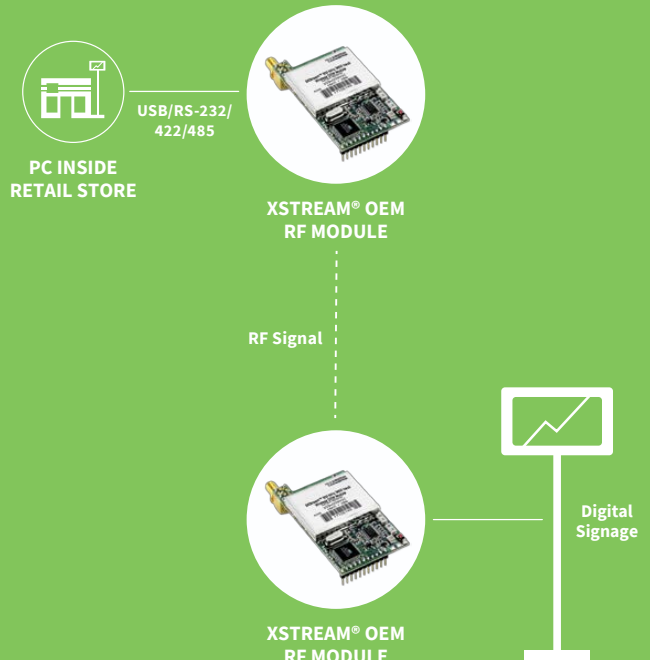
## BENEFITS

- 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 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)

## RELATED PRODUCTS



## APPLICATION EXAMPLE



# SPECIFICATIONS

# 24XStream® (2.4 GHz)

## PERFORMANCE

<b>INDOOR/URBAN RANGE</b> (W/ 2.1 DB DIPOLE ANTENNA)	Up to 600 ft (180 m)
<b>OUTDOOR RF LINE-OF-SIGHT RANGE</b> (W/ 2.1 DB DIPOLE ANTENNA)	Up to 3 miles (5 km)
<b>OUTDOOR RF LINE-OF-SIGHT RANGE</b> (W/ HIGH-GAIN ANTENNA)	Up to 10 miles (16 km)
<b>TRANSMIT POWER OUTPUT</b>	50 mW (17 dBm)
<b>INTERFACE DATA RATE</b> (SOFTWARE SELECTABLE)	10 - 57600 bps (including non-standard baud rates)
<b>THROUGHPUT DATA RATE</b>	9,600 bps
<b>RF DATA RATE</b>	9.6 or 19.2 Kbps
<b>RECEIVER SENSITIVITY</b>	-105 dBm (@ 9600 bps)

## POWER REQUIREMENTS

<b>SUPPLY VOLTAGE</b>	5V (± 0.25V) regulated
<b>RECEIVE CURRENT</b>	80 mA
<b>TRANSMIT CURRENT</b>	150 mA
<b>POWER-DOWN CURRENT</b>	< 26 µA

## GENERAL

<b>DIMENSIONS (L X W X H)</b>	1.600 in x 2.825 in x 0.350 in (4.06 cm x 7.18 cm x 0.89 cm)
<b>WEIGHT</b>	0.8 oz (24 g)
<b>OPERATING TEMPERATURE</b>	0° C to 70° C (commercial) or -40° C to 85° C (industrial)
<b>ANTENNA OPTIONS</b>	RPSMA, MMCX or Wire antenna

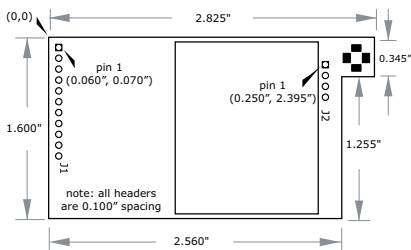
## NETWORKING & SECURITY

<b>OPERATING FREQUENCY</b>	ISM 2.4000 - 2.4835 GHz
<b>SUPPORTED NETWORK TOPOLOGIES</b>	Peer-to-Peer (no master/slave dependencies), Point-to-Point, Point-to-Multipoint, Multidrop
<b>NUMBER OF CHANNELS</b> (SOFTWARE SELECTABLE)	7 Frequency hopping channels
<b>NETWORK FILTRATION LAYERS</b>	VID, Channel, Destination address

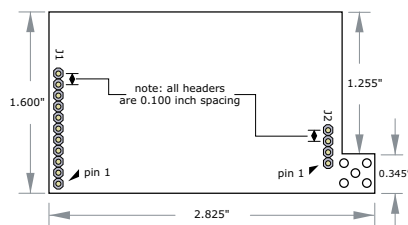
## AGENCY APPROVALS

<b>FCC PART 15.247</b>	OUR-24XSTREAM
<b>INDUSTRY CANADA (IC)</b>	4214A 12008

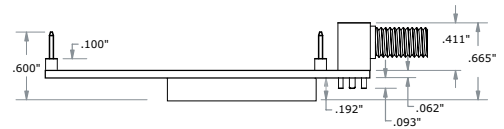
### TOP VIEW



### BOTTOM VIEW (pins protruding)



### SIDE VIEW (with RPSMA connector)



PART NUMBERS	DESCRIPTION
X24-009-DK	XStream Development Kit - 2.4 GHz, 50 mW, 9600 bps, 3" wire & RPSMA connector
X24-019-DK	XStream Development Kit - 2.4 GHz, 50 mW, 19.2 Kbps, 3" wire & RPSMA connector
X24-009NMC	24XStream - 50 mW transceiver, w/MMCX, 9600 bps, commercial grade (0° C to 70° C)
X24-009NMI	24XStream - 50 mW transceiver, w/MMCX, 9600 bps, industrial grade (-40° C to 85° C)
X24-009NSC	24XStream - 50 mW transceiver, w/RPSMA, 9600 bps, commercial grade (0° C to 70° C)
X24-009NSI	24XStream - 50 mW transceiver, w/RPSMA, 9600 bps, industrial grade (-40° C to 85° C)
X24-009NST	24XStream - 50 mW transceiver, w/RPSMA, 9600 bps, tested industrial grade (-40° C to 85° C)
X24-009WNC	24XStream - 50 mW transceiver, 3" wire antenna, 9600 bps, commercial grade (0° C to 70° C)
X24-009WNI	24XStream - 50 mW transceiver, 3" wire antenna, 9600 bps, industrial grade (-40° C to 85° C)
X24-019NMC	24XStream - 50 mW transceiver, w/MMCX, 19200 bps, commercial grade (0° C to 70° C)
X24-019NMI	24XStream - 50 mW transceiver, w/MMCX, 19200 bps, industrial grade (-40° C to 85° C)
X24-019NMT	24XStream - 50 mW transceiver, w/MMCX, 19200 bps, tested industrial grade (-40° C to 85° C)
X24-019NSC	24XStream - 50 mW transceiver, w/RPSMA, 19200 bps, commercial grade (0° C to 70° C)
X24-019NSI	24XStream - 50 mW transceiver, w/RPSMA, 19200 bps, industrial grade (-40° C to 85° C)
X24-019NST	24XStream - 50 mW transceiver, w/RPSMA, 19200 bps, tested industrial grade (-40° C to 85° C)
X24-019WNC	24XStream - 50 mW transceiver, 3" wire antenna, 19200 bps, commercial grade (0° C to 70° C)
X24-019WNI	24XStream - 50 mW transceiver, 3" wire antenna, 19200 bps, industrial grade (-40° C to 85° C)

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