



1 WATT/900 MHZ
OEM RF MODULES



XTEND[®] OEM RF MODULES

Long-range wireless modules enable communication from UART serial data with peer-to-peer, point-to-multipoint, repeater and DigiMesh[®] networking topologies

The XTend OEM RF module provides unprecedented range in a low-cost wireless data solution. The module is easy to use, requires minimal power, provides reliable delivery of critical data between devices, and its small form factor saves valuable board space.

The XTend module utilizes FHSS (Frequency Hopping Spread Spectrum) agility to avoid interference by hopping to a new frequency on every packet transmission or re-transmission. Its transmit power is software adjustable from 1 mW to 1 W—the maximum output power allowable by governments that use 900 MHz as a license-free band. The XTend module is approved

for use in the United States, Canada, Australia and other countries (contact Digi for a complete listing).

Innovations stamped in its design enable the XTend module to supply two- to eight-times the range of other modules operating within the unlicensed 900 MHz frequency band. The range gained by OEMs and integrators is due to proprietary technologies embedded into each module, including superior RX (receiver) sensitivity, interference immunity, modulation/demodulation techniques, and others.

BENEFITS

- Indoor/urban range up to 3000 feet
- Outdoor line-of-sight range up to 40 miles (with high gain antenna)
- Outstanding receiver sensitivity (-110 dBm @ 9600 bps)
- Peer-to-peer, point-to-multipoint, repeater and DigiMesh[®] networking topologies
- Adjustable power output from 1 mW to 1 W; up to 4 W EIRP (with 6 dBi antenna)
- Low power consumption for power-sensitive applications
 - Pin, serial port and cyclic sleep modes available
- Fully interoperable with Digi's other drop-in networking products, including extenders and XTend-PKG modems
- RPSMA and MMCX antenna options

RELATED PRODUCTS



XTend[®]
RF Modem



ConnectPort[®]
X2



XBee[®] 900HP
RF Modem



XBee-PRO[®]
900HP Module



XCTU

APPLICATION EXAMPLE



PC INSIDE
SHIPPING YARD

Ethernet



XTEND[®]
RF MODEM



XTEND[®]
900 MHZ MODULE



Embedded into
GPS/Datalogger

SPECIFICATIONS

XTend® OEM RF Module

PERFORMANCE

FREQUENCY RANGE	ISM 902 – 928 MHz
INDOOR/URBAN RANGE	Up to 3000 feet (900 m) with 2.1 dB dipole antenna
OUTDOOR RF LINE-OF-SIGHT RANGE	Up to 40 miles (64 km) with high gain antenna; Up to 14 miles (22 km) with 2.1 dB dipole antenna
TRANSMIT POWER (SOFTWARE SELECTABLE)	1 mW - 1 W (0 - 30 dBm)
INTERFACE DATA RATE	1,200 - 230,400 bps (including non-standard baud rates)
RECEIVER SENSITIVITY (1% PER)	-110 dBm (@9,600 bps throughput data rate), -100 dBm (@115,200 bps)
THROUGHPUT DATA RATE (SOFTWARE SELECTABLE)	9,600 or 115,200 bps
RF DATA RATE	10,000 bps (@9,600 bps throughput data rate), 125,000 bps (@115,200 bps)

NETWORKING AND SECURITY

SPREAD SPECTRUM	FHSS (Frequency Hopping Spread Spectrum)
MODULATION	FSK (Frequency Shift Keying)
SUPPORTED NETWORK TOPOLOGIES	Point-to-Point, Point-to-Multipoint, Repeater, Mesh (Mesh networking and 256-bit AES Encryption capabilities are currently only available in separate releases)
CHANNEL CAPACITY	10 hop sequences share 50 frequencies
ENCRYPTION	256-bit / 128-bit AES

POWER REQUIREMENTS

SUPPLY VOLTAGE	2.8 – 5.5 VDC
RX CURRENT	80 mA
TRANSMIT CURRENT	See chart below
SHUTDOWN MODE POWER DOWN	5 µA typical
PIN SLEEP POWER DOWN	147 µA
CYCLIC SLEEP (IDLE CURRENT)	0.3 – 0.8 mA (16 sec cyclic sleep)

ENVIRONMENTAL

OPERATING TEMPERATURE	-40° C to 85° C (Industrial)
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CERTIFICATIONS

FCC ID (U.S. CERTIFICATION PART 15.247)	OUR-9XTEND
IC ID (CANADA)	4214A-9XTEND
C-TICK (AUSTRALIA)	Approved (XTH9)

SPECIFICATIONS

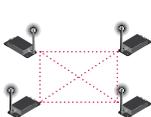
Power Requirements (Relative to Each Transmit Power Output Option)

TRANSMIT POWER OUTPUT	1 mW	10 mW	100 mW	500 mW	1 W
SUPPLY VOLTAGE	2.8 - 5.5 VDC	2.8 - 5.5 VDC	2.8 - 5.5 VDC	3.0 - 5.5 VDC	4.75 - 5.5 VDC
TRANSMIT CURRENT (5V) TYPICAL	110 mA	140 mA	270 mA	500 mA	730 mA
TRANSMIT CURRENT (3.3V) TYPICAL	90 mA	100 mA	260 mA	600 mA	N/A

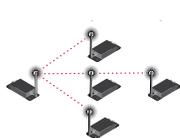
Point-to-Point



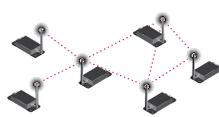
Peer-to-Peer



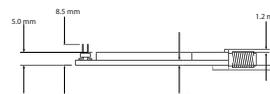
Point-to-Multipoint & Repeater



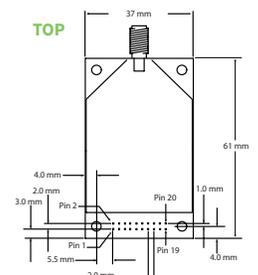
Mesh



SIDE



TOP



PART NUMBERS	DESCRIPTION
XT09-DK	XTend Development Kit - 900 MHz, 1W, 115 Kbps, (1) MMCX & (1) RPSMA connector, industrial grade (-40° C to 85° C)
XT09-DK-MESH	XTend Development Kit - 900 MHz, 1W, 115 Kbps, (2) MMCX & (2) RPSMA connector modules, with mesh, industrial grade (-40° C to 85° C)
XTH9-DK-128	XTend Development Kit - 900 MHz, 1W, 115 Kbps, (1) MMCX & (1) RPSMA connector, industrial grade (-40° C to 85° C), for Australia (International)
XT09-MI	9XTend - 1W transceiver, w/MMCX connector, 115000 bps, industrial grade (-40° C to 85° C), N. America only
XT09-MI-MESH	9XTend - 1W transceiver, w/MMCX connector, 115000 bps, with mesh, industrial grade (-40° C to 85° C), N. America only
XT09-MT	9XTend - 1W transceiver, w/ MMCX connector, 115000 bps, tested grade, N. America only
XT09-SI	9XTend - 1W transceiver, w/RPSMA connector, 115000 bps, industrial grade (-40° C to 85° C), North America only
XT09-SI-MESH	9XTend - 1W transceiver, w/RPSMA connector, 115000 bps, with mesh, industrial grade (-40° C to 85° C), North America only
XT09-ST	9XTend - 1W transceiver, w/RPSMA connector, 115000 bps, tested grade, North America only
XTH9-MI-128	9XTend - 1W transceiver, w/MMCX connector, 128-bit encryption, industrial grade (-40° C to 85° C), for Australia
XTH9-SI-128	9XTend - 1W transceiver, w/RPSMA connector, 128-bit encryption, industrial grade (-40° C to 85° C), Australia
XT09-MI-NA	9XTend - 1W transceiver, w/MMCX connector, 128-bit AES encryption, industrial grade (-40° C to 85° C), International
XT09-SI-NA	9XTend - 1W transceiver, w/RPSMA connector, 128-bit AES encryption, industrial grade (-40° C to 85° C), International

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