DIGI
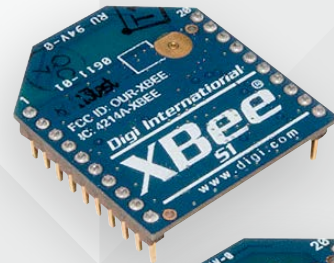®

DIGI XBEE® S1 802.15.4 RF MODULES

Easy-to-deploy modules provide critical end-point connectivity to devices and sensors

Digi XBee RF modules provide OEMs with a common footprint shared by multiple platforms, including multipoint and ZigBee/Mesh topologies, and both 2.4 GHz and 900 MHz solutions. OEMs deploying the Digi XBee can substitute one Digi XBee for another, depending upon dynamic application needs, with minimal development, reduced risk and shorter time-to-market.

Digi XBee 802.15.4 RF modules are ideal for applications requiring low latency and predictable communication timing. Providing quick, robust communication in point-to-point, peer-to-peer, and multipoint/star configurations, Digi XBee
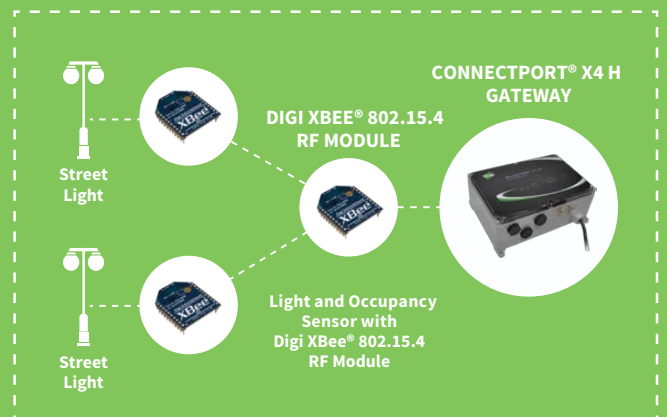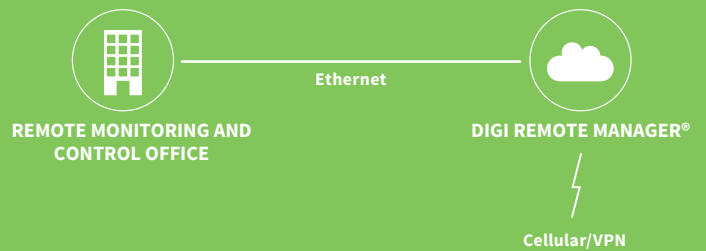
802.15.4 products enable robust end-point connectivity with ease. Whether deployed as a pure cable replacement for simple serial communication, or as part of a more complex hub-and-spoke network of sensors, Digi XBee 802.15.4 RF modules maximize performance and ease of development.

Digi XBee 802.15.4 modules seamlessly interface with compatible gateways, device adapters and range extenders, providing developers with true beyond-the-horizon connectivity.

BENEFITS

– Simple, out-of-the-box RF communications, no configuration needed
– Point-to-multipoint network topology
– 2.4 GHz for worldwide deployment
– Common Digi XBee footprint for a variety of RF modules
– Low-power sleep modes
– Multiple antenna options

APPLICATION EXAMPLE

REMOTE MONITORING AND CONTROL OFFICE

Ethernet

DIGI REMOTE MANAGER®

Cellular/VPN

Street Light

CONNECTPORT® X4 H GATEWAY

DIGI XBEE® 802.15.4 RF MODULE

Light and Occupancy Sensor with Digi XBee® 802.15.4 RF Module

Street Light

RELATED PRODUCTS

ConnectPort® X4/X4H Gateways

Digi XBee® Adapters

XCTU

Digi Remote Manager®
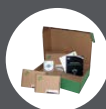
Development Kits

PERFORMANCE		
RF DATA RATE	250 kbps	250 kbps
INDOR/URBAN RANGE	100 ft (30 m)	300 ft (100 m)
OUTDOOR/RF LINE-OF-SIGHT RANGE	300 ft (100 m)	1 mi (1.6 km)
TRANSMIT POWER	1 mW (+0 dBm)	60 mW (+18 dBm)*
RECEIVER SENSITIVITY (1% PER)	-92 dBm	-100 dBm
DIGI HARDWARE	S1	
TRANSCEIVER CHIPSET	Freescale MC13212	
FEATURES		
SERIAL DATA INTERFACE	3.3V CMOS UART	
CONFIGURATION METHOD	API or AT Commands, local or over-the-air	
FREQUENCY BAND	2.4 GHz	
INTERFERENCE IMMUNITY	DSSS (Direct Sequence Spread Spectrum)	
SERIAL DATA RATE	1200 bps - 250 kbps	
ADC INPUTS	(6) 10-bit ADC inputs	
DIGITAL I/O	8	
ANTENNA OPTIONS	Chip, Wire Whip, U.FL, & RPSMA	
NETWORKING & SECURITY		
ENCRYPTION	128-bit AES	
RELIABLE PACKET DELIVERY	Retries/Acknowledgments	
IDS AND CHANNELS	PAN ID, 64-bit IEEE MAC, 16 Channels	
POWER REQUIREMENTS		
SUPPLY VOLTAGE	2.8 - 3.4VDC	2.8 - 3.4VDC
TRANSMIT CURRENT	45 mA @ 3.3VDC	215 mA @ 3.3VDC
RECEIVE CURRENT	50 mA @ 3.3VDC	55 mA @ 3.3VDC
POWER-DOWN CURRENT	<10 uA @ 25° C	
REGULATORY APPROVALS		
FCC (USA)	OUR-Digi XBee	OUR-Digi XBeePRO
IC (CANADA)	4214A-Digi XBee	4214A-Digi XBeePRO
ETSI (EUROPE)	Yes	Yes - Max TX 10 mW
C-TICK AUSTRALIA	Yes	
TELEC (JAPAN)	Yes	

802.15.4 – Star
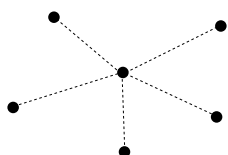
(Side Views)
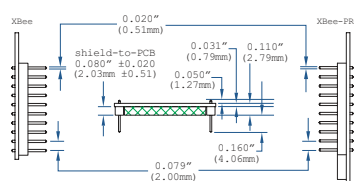
(Top View)   (Top View)
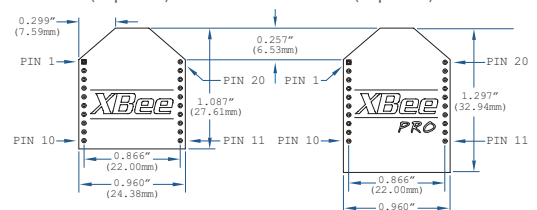
PART NUMBERS	DESCRIPTION
MODULES	
XB24-AWI-001	Digi XBee S1 802.15.4 low-power module w/ wire antenna
XB24-API-001	Digi XBee S1 802.15.4 low-power module w/ PCB antenna
XB24-AUI-001	Digi XBee S1 802.15.4 low-power module w/ U.fl connector
XB24-ASI-001	Digi XBee S1 802.15.4 low-power module w/ RPSMA connector
XBP24-AWI-001	Digi XBee-PRO S1 802.15.4 extended-range module w/ wire antenna
XBP24-AWI-001J	Digi XBee-PRO S1 802.15.4 extended-range module w/ wire antenna (International)
XBP24-AUI-001	Digi XBee-PRO S1 802.15.4 extended-range module w/ U.fl connector
XBP24-AUI-001J	Digi XBee-PRO S1 802.15.4 extended-range module w/ U.fl connector (International)
XBP24-ASI-001	Digi XBee-PRO S1 802.15.4 extended-range module w/ RPSMA connector
XBP24-ASI-001J	Digi XBee-PRO S1 802.15.4 extended-range module w/ RPSMA connector (International)
XBP24-API-001	Digi XBee-PRO S1 802.15.4 extended-range module w/ PCB antenna
XBP24-API-001J	Digi XBee-PRO S1 802.15.4 extended-range module w/ PCB antenna (International)

FOR MORE INFORMATION
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