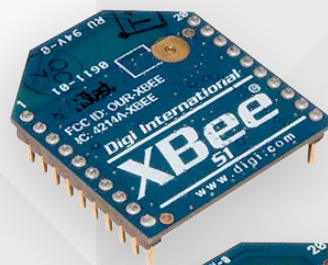




EMBEDDED RF  
MODULES FOR OEMS



# XBEE® S1 802.15.4 RF MODULES

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

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 XBee can substitute one XBee for another, depending upon dynamic application needs, with minimal development, reduced risk and shorter time-to-market.

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, 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, XBee 802.15.4 RF modules maximize performance and ease of development.

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

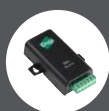
## BENEFITS

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

## RELATED PRODUCTS



ConnectPort®  
X4/X4H Gateways



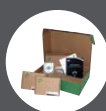
XBee®  
Adapters



XCTU

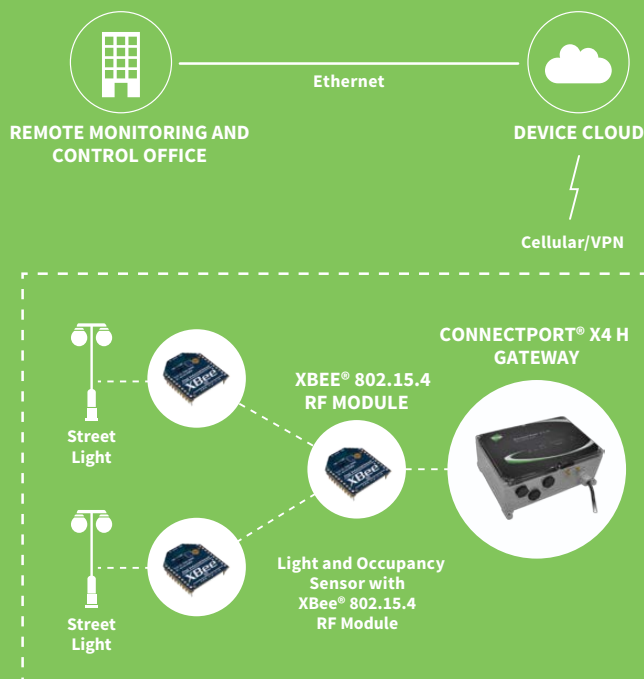


Digi Device  
Cloud<sup>SM</sup>



Development  
Kits

## APPLICATION EXAMPLE



## SPECIFICATIONS

Legacy XBee® S1 802.15.4

| Legacy XBee-PRO® S1 802.15.4

### 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

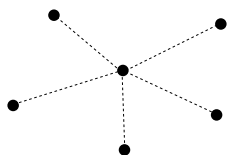
### POWER REQUIREMENTS

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	

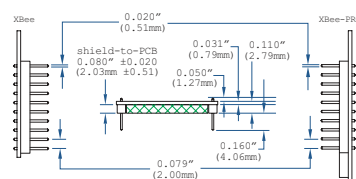
### REGULATORY APPROVALS

FCC (USA)	OUR-XBEE	OUR-XBEEPRO
IC (CANADA)	4214A-XBEE	4214A-XBEEPRO
ETSI (EUROPE)	Yes	Yes - Max TX 10 mW
C-TICK AUSTRALIA	Yes	
TELEC (JAPAN)	Yes	

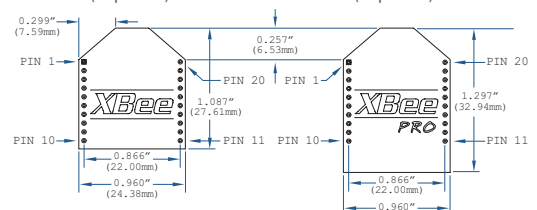
802.15.4 - Star



(Side Views)



(Top View)



PART NUMBERS	DESCRIPTION
KITS	
XKB2-AT-WWC	Wireless Connectivity Kit w/ Legacy XBee 802.15.4
XKB2-AT-WWG	XBee / Arduino Compatible Coding Platform w/ Legacy XBee 802.15.4
MODULES	
XB24-AWI-001	XBee S1 802.15.4 low-power module w/ wire antenna
XB24-API-001	XBee S1 802.15.4 low-power module w/ PCB antenna
XB24-AUI-001	XBee S1 802.15.4 low-power module w/ U.fl connector
XB24-ASI-001	XBee S1 802.15.4 low-power module w/ RPSMA connector
XBP24-AWI-001	XBee-PRO S1 802.15.4 extended-range module w/ wire antenna
XBP24-AWI-001J	XBee-PRO S1 802.15.4 extended-range module w/ wire antenna (International)
XBP24-AUI-001	XBee-PRO S1 802.15.4 extended-range module w/ U.fl connector
XBP24-AUI-001J	XBee-PRO S1 802.15.4 extended-range module w/ U.fl connector (International)
XBP24-ASI-001	XBee-PRO S1 802.15.4 extended-range module w/ RPSMA connector
XBP24-ASI-001J	XBee-PRO S1 802.15.4 extended-range module w/ RPSMA connector (International)
XBP24-API-001	XBee-PRO S1 802.15.4 extended-range module w/ PCB antenna
XBP24-API-001J	XBee-PRO S1 802.15.4 extended-range module w/ PCB antenna (International)

FOR MORE INFORMATION  
PLEASE VISIT [WWW.DIGI.COM](http://WWW.DIGI.COM)

**DIGI SERVICE AND SUPPORT** / You can purchase with confidence knowing that Digi is always available to serve you with expert technical support and our industry leading warranty. For detailed information visit [www.digi.com/support](http://www.digi.com/support).

© 1996-2016 Digi International Inc. All rights reserved.  
All trademarks are the property of their respective owners.

91001412  
C2/416

**DIGI INTERNATIONAL WORLDWIDE HQ**  
877-912-3444 / 952-912-3444 / [www.digi.com](http://www.digi.com)

**DIGI INTERNATIONAL FRANCE**  
+33-1-55-61-98-98 / [www.digi.fr](http://www.digi.fr)

**DIGI INTERNATIONAL JAPAN**  
+81-3-5428-0261 / [www.digi-intl.co.jp](http://www.digi-intl.co.jp)

**DIGI INTERNATIONAL SINGAPORE**  
+65-6213-5380

**DIGI INTERNATIONAL CHINA**  
+86-21-50492199 / [www.digi.com.cn](http://www.digi.com.cn)

