XBee® Sensor

Compact Battery Powered Sensor with Integrated ZigBee®

XBee sensors easily integrate into ZigBee networks, featuring long battery life and small size for unobtrusive installation anywhere.

Overview

ZigBee technology enables low-cost, low-power networking of sensors, controllers and other devices in self-configuring, self-healing wireless mesh networks. Part of Digi's Drop-in Networking solutions, XBee sensors offer the ability to provide real-time data from a variety of sensors (e.g., temperature, humidity, light) in a single solution for wireless communication across a ZigBee infrastructure.

Their small form factor and long battery life power make XBee sensors easy to integrate with Digi's Drop-in Networking solutions to provide reliable, unobtrusive communications. Applications include building automation and security, energy management, food storage management, freight/vehicle monitoring and many more.
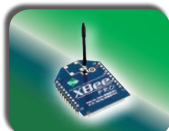
Installation is a snap. Simply insert batteries, add the XBee sensor to the ZigBee network, and configure the update interval. Next, mount the device in an out-of-the way location and start communicating.

If using the same ZigBee protocol, XBee sensors can be used with ConnectPort® X gateways, XBee embedded modules, XBee adapters or XBee wall routers to drop-in end-to-end device networks – without the need for a wired network infrastructure.

Related Products
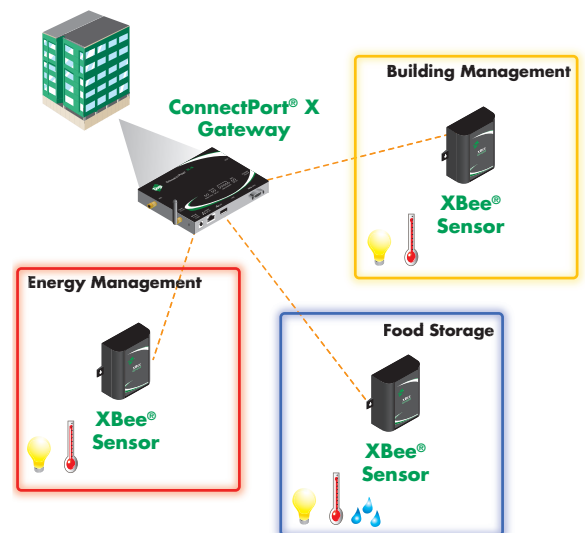

ConnectPort® X Gateways

XBee® Modules

XBee® Adapters

XBee® Wall Router

Application Highlight

ConnectPort® X Gateway

Building Management

XBee® Sensor

Energy Management

XBee® Sensor
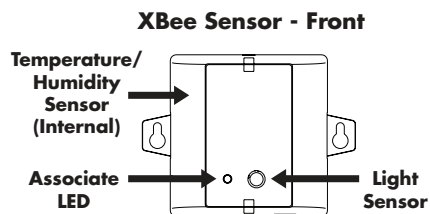
Food Storage

XBee® Sensor

Features/Benefits

- **ZigBee wireless sensors**
  - **Temperature, humidity, light**
- **Small form factor can be mounted anywhere**
- **Long battery life**
- **Easy to install/configure**
- **Easy to integrate with Digi's Drop-in Networking family of gateways, adapters and modules on a ZigBee network**
  - **Integrate with custom Python® development environment for events, triggers and data logging**
- **Applications include:**
  - **Building automation and security**
  - **Energy management**
  - **Food storage management**
  - **Frieght/vehicle monitoring**

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Platform	XBee® Sensor
Performance	
Frequency Band	ISM 2.4 GHz
RF Data Rate	250,000 bps
Indoor/Urban Range	133 ft (40 m)
Outdoor RF Line-of-sight Range	400 ft (120 m)
Transmit Power	1.25 mW (+1 dBm) normal mode; 2 mW (+3 dBm) boost mode
Receiver Sensitivity (1% PER)	-96 dBm boost mode; -95 dBm normal mode
Features	
Interfaces	ZigBee: Integrated XBee ZB module supports ZigBee PRO Feature Set
LEDs	Power: Solid when powered and not associated to network; Associate: Blinks when unit is associated to network
Push Button	Device reset; Configuration reset to factory defaults; Identification/Commissioning mode
Antenna Options	Internal
Integrated Sensors	
Temperature Sensor	Range: -18° C to +55° C (-0.4° F to +131° F); Accuracy: +/- 2° C
Ambient Light Sensor	Range of spectral bandwidth: 360 to 970 nm (similar to human eye); Wavelength of peak sensitivity: 570 nm
Humidity Sensor	Range: 0 to 100% RH; Interchangeability: +/-5%RH(0%RHto59%RH), +/-8%RH(60%RHto100%RH); Accuracy: +/- 3.5% RH
Networking & Security	
Networking Topologies	Mesh, Point-to-point, Point-to-multipoint
Number of Channels	16 (Direct Sequence Spread Spectrum)
Filtration Options	PAN ID, Channel, 64-bit Addresses
General	
Dimensions (L x W x H)	2.70 in x 2.50 in x 1.30 in (6.85 cm x 6.35 cm x 3.30 cm)
Weight	0.35 lb (0.158 kg) w/batteries, 0.20 lb (0.091 kg) without batteries
Operating Temperature	-18° C to +55° C (-0.4° F to +131° F)
Power Requirements	3 x AA alkaline 1.5V batteries (batteries not included)
Battery Life	
Duty Cycle/Battery Life Estimate	1 read per 30 sec / 1.5 years 1 read per minute / 2.5 years 1 read per hour (or less frequent) / 6 years Assumptions based on: Cyclic sleep enabled with single transmit per wake cycle; Ambient temperature at 21° C
Regulatory Approvals - Pending	
Emissions/Immunity	FCC Part 15 Class B, EN55022 Class B, EN55024
RoHS Compliant	Yes

XBee Sensor - Front

Temperature/
Humidity
Sensor
(Internal)

Associate
LED

Light
Sensor

XBee Sensor - Top/Bottom

Visit www.digi.com for part numbers.

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