

XBee® Sensors

Compact Battery Powered Sensors with Integrated ZigBee®

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



Overview

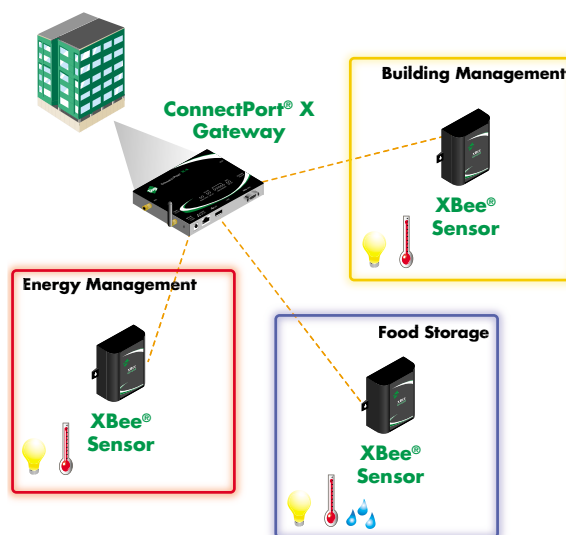
ZigBee technology enables low-cost, low-power networking of sensors, controllers and other devices in self-configuring, self-healing wireless mesh networks. Part of Digi's Drop-in Networking solutions, XBee sensors offer the ability to provide real-time data from a variety of sensors (e.g., temperature,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

Application Highlight



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 including:
 - Building automation and security
 - Energy management
 - Food storage management
 - Freight/vehicle monitoring



Features/Specifications

FEATURES

General

- Frequency: 2.4 GHz (ISM)
- Internal antenna

Performance

- Indoor/Urban range: 133 ft (40 m)
- Outdoor RF line-of-sight range: 400 ft (120 m)
- Transmit power output: 1.25 mW (+1 dBm) normal mode; 2 mW (+3 dBm) boost mode
- RF data rate: 250,000 bps
- Receiver sensitivity: -96 dBm boost mode; -95 dBm normal mode

Networking and 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

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

INTERFACES

- ZigBee:
 - Integrated XBee ZB module supports ZigBee PRO Feature Set

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% RH to 59% RH) +/- 8 % RH (60% RH to 100% RH)
- Accuracy: +/- 3.5% RH

ENVIRONMENTAL

- 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)

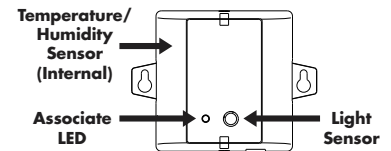
- FCC Part 15, Class B
- EN55022 Class B, EN 55024
- RoHS Compliant

DIMENSIONS

- Length: 2.70 in (6.85 cm)
- Width: 2.50 in (6.35 cm)
- Height: 1.30 in (3.30 cm)
- Weight: 0.35 lb (0.158 kg) w/batteries, 0.20 lb (0.091 kg) without batteries



XBee Sensor - Front



XBee Sensor - Top/Bottom



MODEL.....PART NUMBERS

Model

XBee Sensor - Battery powered temperature and light
XBee Sensor - Battery powered temperature, humidity and light

Worldwide

XS-Z14-CB1RB
XS-Z14-CB2RB

Visit www.digi.com for part numbers.

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- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



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