DIGI XBEE® SENSOR

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

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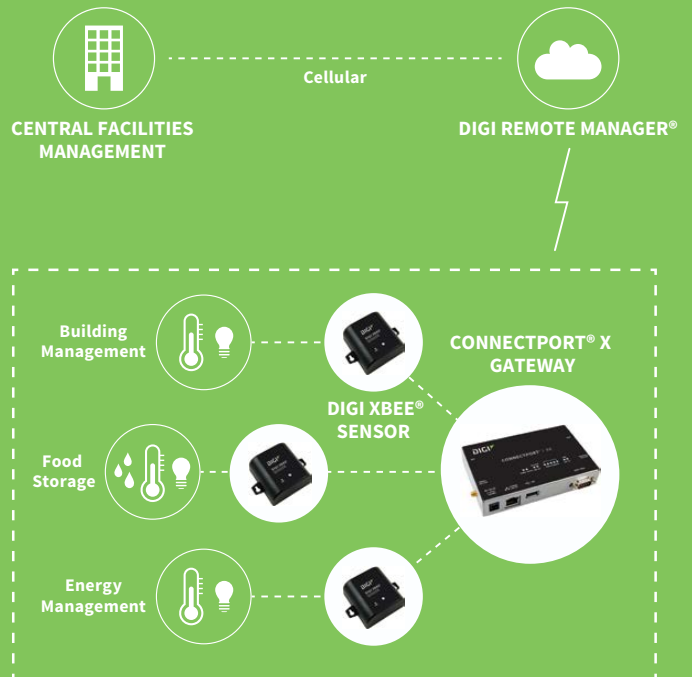
Installation is a snap. Simply insert batteries, add the Digi XBee sensor to the ZigBee network, and configure the update interval. Next, mount the device in an out-of-the way location and start communicating.

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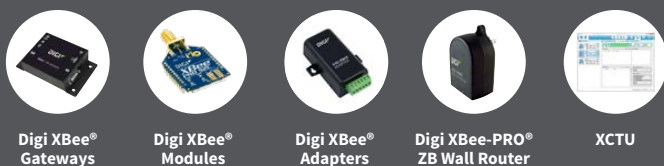
BENEFITS

– ZigBee wireless sensors for temperature, humidity, light
– Small form factor can be mounted anywhere
– Long battery life
– Easy to install/configure
– Easy to integrate with Digi's XBee ZigBee 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 and food storage management
  - Freight/vehicle monitoring

APPLICATION EXAMPLE

CENTRAL FACILITIES MANAGEMENT — Cellular — DIGI REMOTE MANAGER®

Building Management

Food Storage

Energy Management

DIGI XBEE® SENSOR

CONNECTPORT® X GATEWAY

RELATED PRODUCTS

Digi XBee® Gateways | Digi XBee® Modules | Digi XBee® Adapters | Digi XBee-PRO® ZB Wall Router | XCTU

SPECIFICATIONS — Digi XBee® Sensor

PERFORMANCE

FREQUENCY BAND	ISM 2.4 GHz
RF DATA RATE	250,000 bps
INDOOR/URBAN RANGE*	Up to 133 ft (40 m)
OUTDOOR RF LINE-OF-SIGHT RANGE*	Up to 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 Digi 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

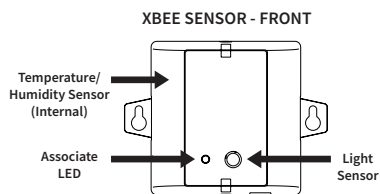|	
DUTY CYCLE/BATTERY LIFE ESTIMATE	1 read per 30 sec / 1.5 years 1 read per minute / 2.5 years 1 read per hour (or less frequent) / 6 years Assumptions based on: Cyclic sleep enabled with single transmit per wake cycle; Ambient temperature at 21° C

REGULATORY APPROVALS - PENDING

EMISSIONS/IMMUNITY	FCC Part 15 Class B, EN55022 Class B, EN55024
ROHS COMPLIANT	Yes

PART NUMBERS — DESCRIPTION

XS-Z16-CB2R	Digi XBee Sensor - ZigBee - Battery-powered, temperature, humidity and light

XBEE SENSOR - FRONT

Temperature/Humidity Sensor (Internal)

Associate LED

Light Sensor

XBEE SENSOR - TOP/BOTTOM

*Range figure estimates are based on free-air terrain with limited sources of interference. Actual range will vary based on transmitting power, orientation of transmitter and receiver, height of transmitting antenna, height of receiving antenna, weather conditions, interference sources in the area, and terrain between receiver and transmitter, including indoor and outdoor structures such as walls, trees, buildings, hills, and mountains.

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