

XBee® and XBee-PRO® ZigBee

ZigBee® RF Modules for OEMs

Embedded ZigBee modules provide OEMs with a simple way to integrate mesh technology into their application.



Overview

XBee and XBee-PRO ZigBee RF modules provide cost-effective wireless connectivity to electronic devices. They are interoperable with other ZigBee PRO feature set devices, including devices from other vendors*.

XBee and XBee-PRO ZigBee modules are ideal for applications in the energy and controls markets where manufacturing efficiencies are critical. The Serial Peripheral Interface (SPI) provides a high-speed interface and optimizes integration with embedded microcontrollers, lowering development costs and reducing time to market. Features like binding and multicasting also allow for simple integration into a Home Automation device.

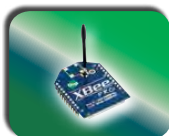
Products in the XBee family require no configuration or additional development. Programmable versions of the XBee and XBee-PRO ZigBee module make customizing applications easy. Programming directly on the module eliminates the need for a separate processor. Because the wireless software is isolated, applications can be developed with no risk to RF performance or security.

*Interoperability requires the ZigBee Feature Set or ZigBee PRO Feature Set to be deployed on all devices. Contact Digi Support for details.

Related Products



XBee Gateways



Modules



Adapters



Development Kits

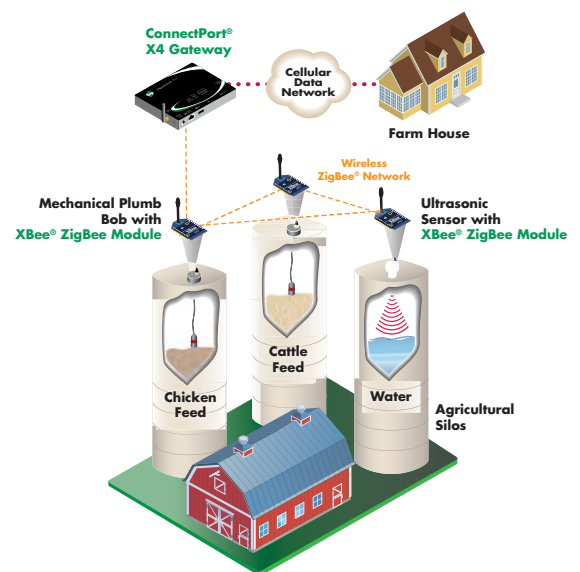


Network Extenders



Digi Remote Manager

Application Highlight



Features/Benefits

- Interoperable with other ZigBee compliant devices*
- Programmable versions with on-board microprocessor enable custom ZigBee application development
- Supports binding and multicasting, for easy integration into a Home Automation platform
- Through-Hole and Surface Mount form factors enable flexible design options
- 15 general-purpose I/O lines
- Link budgets of 110 dB for XBee and 119 dB for XBee-PRO ZB
- Industry leading sleep current of sub 1uA
- Firmware upgrades via UART, SPI or over the air



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| Platform | XBee® ZigBee | | XBee-PRO® ZigBee | |
|-----------------------------------|---|---------------------------------------|--|-------------------------|
| | Standard | Programmable | Standard | Programmable |
| Performance | | | | |
| Data Rate | RF 250 Kbps, Serial up to 1 Mbps | | | |
| Indoor/Urban Range | 200 ft (60 m) | | 300 ft (90 m) | |
| Outdoor/RF Line-of-Sight Range | 4000 ft (1200 m) | | 2 miles (3200 m) | |
| Transmit Power | 3.1 mW (+5 dBm) / 6.3 mW(+8 dBm) boost mode | | 63 mW (+18 dBm) | |
| Receiver Sensitivity (1% PER) | -100 dBm / -102 dBm boost mode | | -101 dBm | |
| Features | | | | |
| Serial Data Interface | UART, SPI | | | |
| Configuration Method | API or AT commands, local or over-the-air | | | |
| Frequency Band | ISM 2.4 GHz | | | |
| Form Factor | Through-Hole, Surface Mount | | | |
| Interference Immunity | DSSS (Direct Sequence Spread Spectrum) | | | |
| ADC Inputs | (4) 10-bit ADC inputs | | | |
| Digital I/O | 15 | | | |
| Antenna Options | Through-Hole: PCB Antenna, U.FL Connector, RPSMA Connector, or Integrated Wire SMT: RF Pad, PCB Antenna, or U.FL Connector | | | |
| Operating Temperature | -40° C to +85° C | | | |
| Dimensions (L x W x H) and Weight | Through-Hole: 0.960 x 1.087 in (2.438 x 2.761 cm) SMT: 0.866 x 1.33 x 0.120 in (2.199 x 3.4 x 0.305 cm) | | Through-Hole: 0.960 x 1.297 in (2.438 x 3.294 cm) SMT: 0.866 x 1.33 x 0.120 in (2.199 x 3.4 x 0.305 cm) | |
| Programmability | | | | |
| Memory | N/A | 32 KB Flash / 2 KB RAM | N/A | 32 KB Flash / 2 KB RAM |
| CPU/Clock Speed | N/A | HCS08 / up to 50.33 MHz | N/A | HCS08 / up to 50.33 MHz |
| Networking and Security | | | | |
| Protocol | ZigBee PRO 2007, HA-Ready with support for binding/multicasting | | | |
| Encryption | 128-bit AES | | | |
| Reliable Packet Delivery | Retries/Acknowledgements | | | |
| IDs | PAN ID and addresses, cluster IDs and endpoints (optional) | | | |
| Channels | 16 channels | | 15 channels | |
| Power Requirements | | | | |
| Supply Voltage | 2.1 to 3.6V | | 2.7 to 3.6V | |
| Transmit Current | 33 mA @ 3.3 VDC / 45 mA boost mode | 47 mA @ 3.3 VDC / 59 mA boost mode | 120 mA @ 3.3 VDC | 120 mA @ 3.3 VDC |
| Receive Current | 28 mA @ 3.3 VDC / 31 mA boost mode | 42 mA @ 3.3 VDC / 45 mA boost mode | 31 mA @ 3.3 VDC | 45 mA @ 3.3 VDC |
| Power-Down Current | <1 uA @ 25° C | 1.5 uA @ 25° C | <1 uA @ 25° C | 1.5 uA @ 25° C |
| Regulatory Approvals | | | | |
| FCC, IC (North America) | | | Yes | |
| ETSI (Europe) | Yes | | No | |
| C-TICK (Australia) | | | Yes | |
| TELEC (Japan) | Yes | | No | |

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