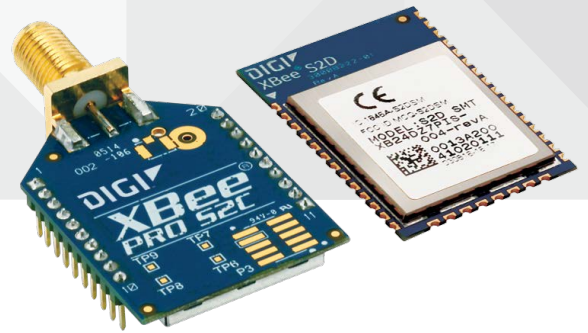




ZIGBEE RF MODULES FOR OEMS



# DIGI XBEE ZIGBEE

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

Digi XBee® and Digi 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\*. **Digi Zigbee Development Kits** are the perfect way to begin **Zigbee application development**.

Digi XBee and Digi 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.

Products in the **Digi XBee family** require little to no configuration or additional development. Programmable versions of the Digi XBee 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.

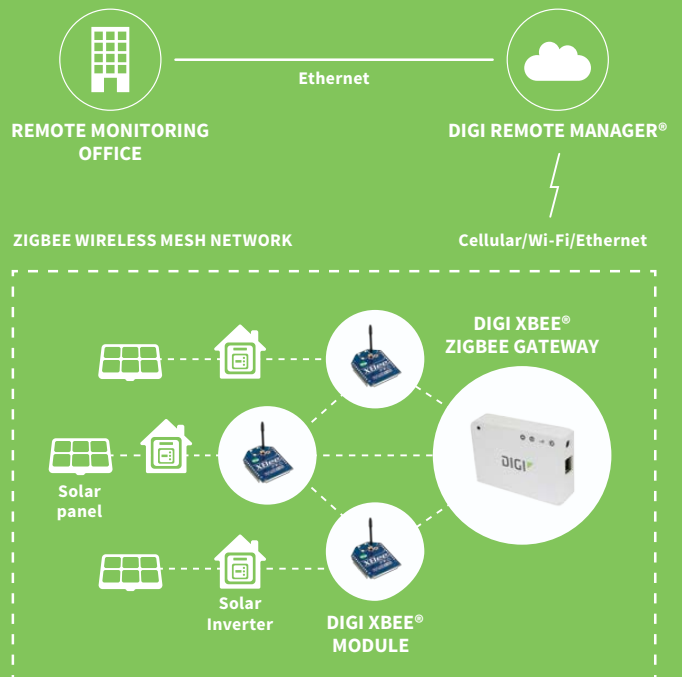
Digi's Zigbee compatible module is based on the Ember EM35x (EM357 and EM3587) system on chip (SoC) radio ICs from Silicon Labs, utilizing 32-bit ARM® Cortex® M3 processor.

\*Interoperability requires the Zigbee feature set to be deployed on all devices. Contact Digi Support for details.

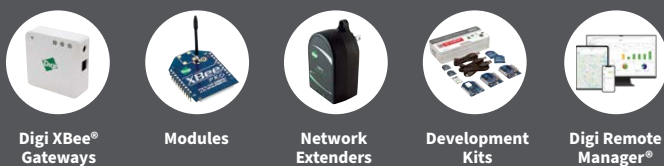
## BENEFITS

- Programmable versions with on-board microprocessor enable custom **Zigbee application development**
- Through-hole and surface mount form factors enable flexible design options
- Industry-leading sleep current
- Firmware upgrades via UART, SPI or over the air (OTA)
- Turnkey development available from **Digi WDS**

## APPLICATION EXAMPLE



## RELATED PRODUCTS



## SPECIFICATIONS

Digi XBee® S2C Zigbee  
Standard

| Programmable

### PERFORMANCE

<b>TRANSCEIVER CHIPSET</b>	Silicon Labs EM357 SoC
<b>DATA RATE</b>	RF 250 Kbps, serial up to 1 Mbps
<b>INDOOR/URBAN RANGE*</b>	Up to 60 m (200 ft)
<b>OUTDOOR/RF LINE-OF-SIGHT RANGE*</b>	Up to 1200 m (4000 ft)
<b>TRANSMIT POWER</b>	3.1 mW (+5 dBm) / 6.3 mW (+8 dBm) boost mode
<b>RECEIVER SENSITIVITY (1% PER)</b>	-100 dBm / -102 dBm boost mode

### FEATURES

<b>SERIAL DATA INTERFACE</b>	UART, SPI
<b>CONFIGURATION METHOD</b>	API or AT commands, local or over-the-air (OTA)
<b>FREQUENCY BAND</b>	ISM 2.4 GHz
<b>FORM FACTOR</b>	Through-hole, surface mount
<b>INTERFERENCE IMMUNITY</b>	DSSS (Direct Sequence Spread Spectrum)
<b>ADC INPUTS</b>	(4) 10-bit ADC inputs
<b>DIGITAL I/O</b>	15
<b>ANTENNA OPTIONS</b>	Through-hole: PCB antenna, U.FL connector, RPSMA connector, or integrated wire SMT: RF pad, PCB antenna, or U.FL connector
<b>OPERATING TEMPERATURE</b>	-40° C to 85° C (-40° F to 185° CF)
<b>DIMENSIONS (L X W X H) AND WEIGHT</b>	Through-hole: 2.438 x 2.761 cm (0.960 x 1.087 in) SMT: 2.199 x 3.4 x 0.305 cm (0.866 x 1.33 x 0.120 in)

### PROGRAMMABILITY

<b>MEMORY</b>	N/A	32 KB flash / 2 KB RAM
<b>CPU/CLOCK SPEED</b>	N/A	HCS08 / up to 50.33 MHz

### NETWORKING AND SECURITY

<b>PROTOCOL</b>	ZigBee PRO 2007, HA-Ready with support for binding/multicasting
<b>ENCRYPTION</b>	128-bit AES
<b>RELIABLE PACKET DELIVERY</b>	Retries/Acknowledgements
<b>IDS</b>	PAN ID and addresses, cluster IDs and endpoints (optional)
<b>CHANNELS</b>	16 channels

### POWER REQUIREMENTS

<b>SUPPLY VOLTAGE</b>	2.1 to 3.6 V	
<b>TRANSMIT CURRENT</b>	33 mA @ 3.3 VDC / 45 mA boost mode	47 mA @ 3.3 VDC / 59 mA boost mode
<b>RECEIVE CURRENT</b>	28 mA @ 3.3 VDC / 31 mA boost mode	42 mA @ 3.3 VDC / 45 mA boost mode
<b>POWER-DOWN CURRENT</b>	<1 µA @ 25° C (77° F)	1.5 µA @ 25° C (77° F)

### REGULATORY APPROVALS

<b>FCC, IC (NORTH AMERICA)</b>	Yes
<b>ETSI (EUROPE)</b>	Yes
<b>RCM (AUSTRALIA AND NEW ZEALAND)</b>	Yes

\*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.

PART NUMBERS	DESCRIPTION
<b>S2C MODULES</b>	
XB24CZ7PIT-004	Digi XBee ZigBee Through-Hole, PCB Antenna
XB24CZ7WIT-004	Digi XBee ZigBee Through-Hole, Wire Antenna
XB24CZ7UIT-004	Digi XBee ZigBee Through-Hole, U.FL
XB24CZ7SIT-004	Digi XBee ZigBee Through-Hole, RPSMA
XB24CZ7PITB003	Programmable Digi XBee ZigBee Through-Hole, PCB Antenna
XB24CZ7WITB003	Programmable Digi XBee ZigBee Through-Hole, Wire Antenna
XB24CZ7UITB003	Programmable Digi XBee ZigBee Through-Hole, U.FL
XB24CZ7SITB003	Programmable Digi XBee ZigBee Through-Hole, RPSMA
XB24CZ7PIS-004	Digi XBee ZigBee SMT, PCB Antenna
XB24CZ7RIS-004	Digi XBee ZigBee SMT, RF Pad
XB24CZ7UIS-004	Digi XBee ZigBee SMT, U.FL
XB24CZ7PISB003	Programmable Digi XBee ZigBee SMT, PCB Antenna
XB24CZ7RISB003	Programmable Digi XBee ZigBee SMT, RF Pad
XB24CZ7UISB003	Programmable Digi XBee ZigBee SMT, U.FL
<b>S2C KIT</b>	
XKB2-Z7T-WZM	Digi XBee ZigBee Mesh Kit, worldwide

FOR MORE INFORMATION  
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