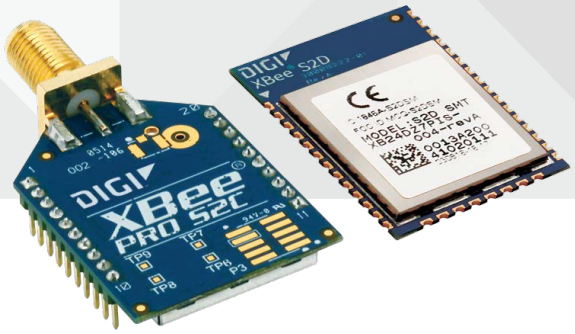
ZIGBEE RF MODULES
FOR OEMS



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.

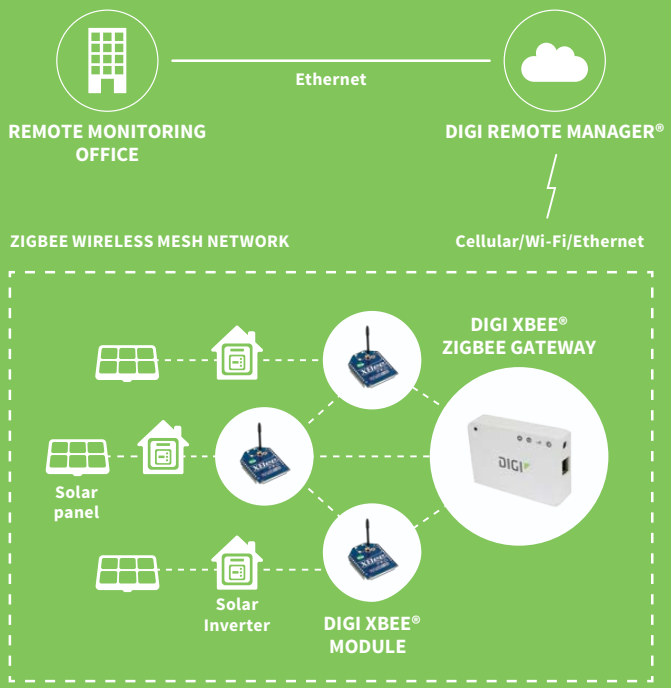
Digi's Zigbee compatible module is based on the Ember EM35x (EM357 and EM3587) system on chip (SoC) radio ICs from Silicon Labs, utilizing 32-bit ARM® Cortex® M3 processor.

*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		
TRANSCEIVER CHIPSET	Silicon Labs EM357 SoC	
DATA RATE	RF 250 Kbps, serial up to 1 Mbps	
INDOOR/URBAN RANGE*	Up to 60 m (200 ft)	
OUTDOOR/RF LINE-OF-SIGHT RANGE*	Up to 1200 m (4000 ft)	
TRANSMIT POWER	3.1 mW (+5 dBm) / 6.3 mW (+8 dBm) boost mode	
RECEIVER SENSITIVITY (1% PER)	-100 dBm / -102 dBm boost mode	
FEATURES		
SERIAL DATA INTERFACE	UART, SPI	
CONFIGURATION METHOD	API or AT commands, local or over-the-air (OTA)	
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 (-40° F to 185° CF)	
DIMENSIONS (L X W X H) AND WEIGHT	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		
MEMORY	N/A	32 KB flash / 2 KB RAM
CPU/CLOCK SPEED	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	
POWER REQUIREMENTS		
SUPPLY VOLTAGE	2.1 to 3.6 V	
TRANSMIT CURRENT	33 mA @ 3.3 VDC / 45 mA boost mode	47 mA @ 3.3 VDC / 59 mA boost mode
RECEIVE CURRENT	28 mA @ 3.3 VDC / 31 mA boost mode	42 mA @ 3.3 VDC / 45 mA boost mode
POWER-DOWN CURRENT	<1 µA @ 25° C (77° F)	1.5 µA @ 25° C (77° F)
REGULATORY APPROVALS		
FCC, IC (NORTH AMERICA)	Yes	
ETSI (EUROPE)	Yes	
RCM (AUSTRALIA AND NEW ZEALAND)	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
S2C MODULES	
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
S2C KIT	
XKB2-Z7T-WZM	Digi XBee ZigBee Mesh Kit, worldwide

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