DIGI XBEE³ ZIGBEE 3.0

Easy-to-add connectivity in a compact, low-power, low-profile footprint.

Digi XBee3™ modules accelerate time to market for designers, OEMs and solution providers by quickly enabling wireless connectivity and easy-to-add functionality. Building on industry-leading technology, pre-certified Digi XBee3™ modules offer the flexibility to switch between multiple frequencies and wireless protocols as needed.

Digi XBee3™ ZigBee 3.0 offers a fully interoperable ecosystem covering all vertical markets including building automation, smart energy, digital health, intelligent lighting, and others.

With Digi Remote Manager®, Digi XBee3™ modules can be easily configured and controlled from a simple, central platform. Built-in Digi TrustFence® security, identity and data privacy features use more than 175 controls to protect against new and evolving cyber threats. MicroPython and XCTU software tools simplify adding functionality, configuration and testing.

From edge computing to future migration, Digi XBee modules offer size, weight, power and performance advantages ideal for scalable device connectivity. A versatile addition to the expanding Digi XBee Ecosystem of wireless modules, adapters and software, the Digi XBee3™ Series is engineered to accelerate development and deployment.

SIZE AND FLEXIBILITY

- At 13 mm x 19 mm, the new Digi XBee3™ micro form factor allows for more compact and portable applications
- Digi XBee3™ is one module for all protocols including: ZigBee, 802.15.4, DigiMesh and BLE, all configurable via Digi XCTU

PROGRAMMABILITY

- Eliminate the need for an external microcontroller and create smart end nodes and low-end gateways using MicroPython

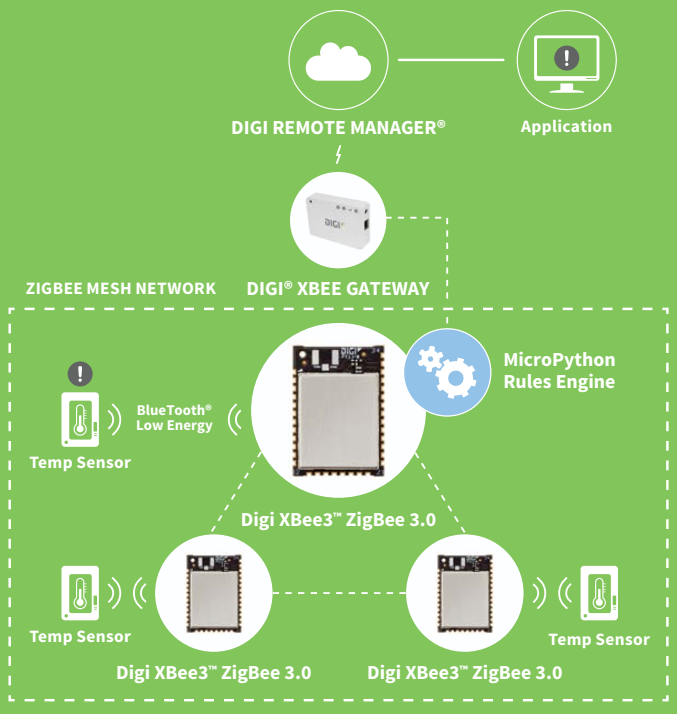
SECURITY

- Intrinsic IoT security with Digi TrustFence®, a layered approach securing the edge device, through the gateway, into and out of the IoT

RELATED PRODUCTS AND SERVICES

Development Kits | Digi XCTU | Digi TrustFence® | Digi Remote Manager® | Digi Design Services

APPLICATION EXAMPLE



SPECIFICATIONS	Digi XBee3™ ZigBee 3.0	Digi XBee3™ PRO ZigBee 3.0
PERFORMANCE		
TRANSCEIVER CHIPSET	Silicon Labs EFR32MG SoC	
DATA RATE	RF 250 Kbps, Serial up to 1 Mbps	
INDOOR/URBAN RANGE*	Up to 200 ft (60 m)	Up to 300 ft (90 m)
OUTDOOR/RF LINE-OF-SIGHT RANGE*	Up to 4000 ft (1200 m)	Up to 2 miles (3200 m)
TRANSMIT POWER	+8 dBm	+19 dBm
RECEIVER SENSITIVITY (1% PER)	-103 dBm Normal Mode	
FEATURES		
SERIAL DATA INTERFACE	UART, SPI, I^2C	
CONFIGURATION METHOD	API or AT commands, local or over-the-air (OTA)	
FREQUENCY BAND	ISM 2.4 GHz	
FORM FACTOR	Micro, 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 SMT: RF Pad, PCB Antenna, or U.FL Connector Micro: U.FL Antenna, RF Pad, Chip Antenna	
OPERATING TEMPERATURE	-40° C to +85° C	
DIMENSIONS (L X W X H)	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) Micro: 0.533 x 0.76 x 0.087 in (13 x 19 x 2 mm)	
PROGRAMMABILITY		
MEMORY	1 MB / 128 KB RAM	
CPU/CLOCK SPEED	HCS08 / up to 50.33 MHz	
NETWORKING AND SECURITY		
PROTOCOL	ZigBee® 3.0	
ENCRYPTION	128/256 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 3.6V	
TRANSMIT CURRENT	40 mA @ 8 dBm	135 mA @ 19 dBm
RECEIVE CURRENT	15 mA	
POWER-DOWN CURRENT	1.7 micro Amp @ 25 degrees C	
REGULATORY APPROVALS		
FCC, IC (NORTH AMERICA)	Yes	Yes
ETSI (EUROPE)	Yes	No

*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
XB3-24Z8RM-J	Digi XBee3 ZigBee 3.0, 2.4 GHz, Micro, RF Pad Ant, MMT
XB3-24Z8UM-J	Digi XBee3 ZigBee 3.0, 2.4 GHz, Micro, U.FL Ant, MMT
XB3-24Z8CM-J	Digi XBee3 ZigBee 3.0, 2.4 GHz, Micro, Chip Ant, MMT
XB3-24Z8RM	Digi XBee3 PRO ZigBee 3.0, 2.4 GHz, Micro, RF Pad Ant, MMT
XB3-24Z8UM	Digi XBee3 PRO ZigBee 3.0, 2.4 GHz, Micro, U.FL Ant, MMT
XB3-24Z8CM	Digi XBee3 PRO ZigBee 3.0, 2.4 GHz, Micro, Chip Ant, MMT
XB3-24Z8ST-J	Digi XBee3, 2.4 Ghz ZB 3.0, SMA Ant, TH MT
XB3-24Z8UT-J	Digi XBee3, 2.4 Ghz ZB 3.0, U.FL Ant, TH MT
XB3-24Z8PT-J	Digi XBee3, 2.4 Ghz ZB 3.0, PCB Ant, TH MT
XB3-24Z8ST	Digi XBee3 PRO, 2.4 Ghz ZB 3.0, SMA Ant, TH MT
XB3-24Z8UT	Digi XBee3 PRO, 2.4 Ghz ZB 3.0, U.FL Ant, TH MT
XB3-24Z8PT	Digi XBee3 PRO, 2.4 Ghz ZB 3.0, PCB Ant, TH MT
XB3-24Z8RS-J	Digi XBee3, 2.4 Ghz ZB 3.0, RF Pad Ant, SMT
XB3-24Z8US-J	Digi XBee3, 2.4 Ghz ZB 3.0, U.FL Ant, SMT
XB3-24Z8PS-J	Digi XBee3, 2.4 Ghz ZB 3.0, PCB Ant, SMT
XB3-24Z8RS	Digi XBee3 PRO, 2.4 Ghz ZB 3.0, RF Pad Ant, SMT
XB3-24Z8US	Digi XBee3 PRO, 2.4 Ghz ZB 3.0, U.FL Ant, SMT
XB3-24Z8PS	Digi XBee3 PRO, 2.4 Ghz ZB 3.0, PCB Ant, SMT

PRODUCT DIMENSIONS

ACTUAL SIZE

DIGI XBEE3 MICRO