

# DIGI XBEE<sup>3</sup> ZIGBEE 3.0

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

Digi XBee3<sup>®</sup> 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<sup>™</sup> 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<sup>®</sup>, Digi XBee3 modules can be easily configured and controlled from a simple, central platform. Built-in Digi TrustFence<sup>®</sup> 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

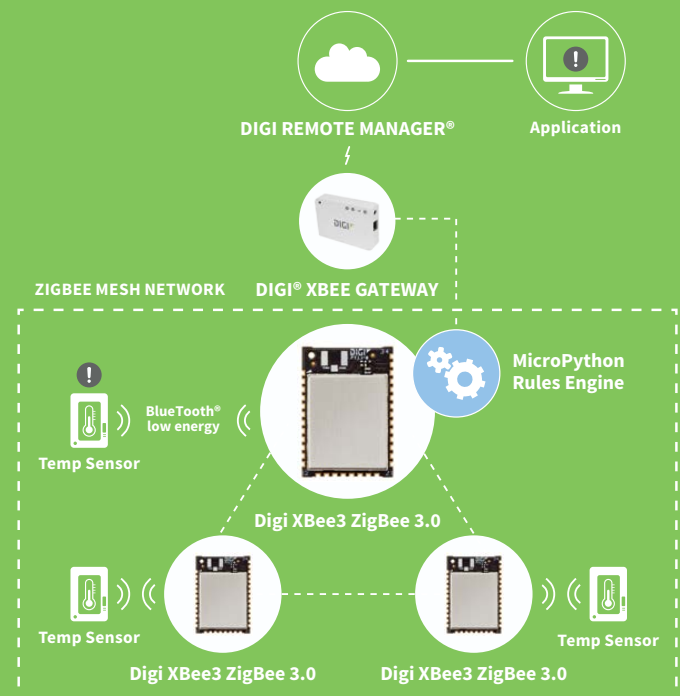
## PROGRAMMABILITY

- Eliminate the need for an external microcontroller and create smart end nodes using MicroPython
- Dual-mode radio for local configuration over Bluetooth<sup>®</sup> low energy using the Digi XBee Mobile app

## SECURITY

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

## APPLICATION EXAMPLE



## RELATED PRODUCTS AND SERVICES



Development  
Kits



Digi XCTU



Digi  
TrustFence<sup>®</sup>



Digi Remote  
Manager<sup>®</sup>



Digi Design  
Services

| 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 <sup>2</sup> C                                                                                                                                   |                           |
| 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<br>SMT: RF Pad, PCB Antenna, or U.FL Connector<br>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)<br>SMT: 0.866 x 1.33 x 0.120 in (2.199 x 3.4 x 0.305 cm)<br>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                 | MicroPython programming environment / up to 40 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.

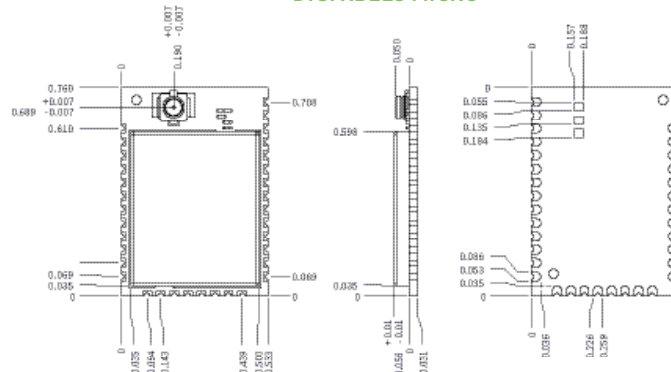
| PART NUMBERS | DESCRIPTION                                                |
|--------------|------------------------------------------------------------|
| XB3-24Z8RM-J | Digi XBee3 ZigBee 3.0, 2.4 GHz, Micro, RF Pad Ant, MMT     |
| XB3-24Z8UM-J | Digi XBee3 ZigBee 3.0, 2.4 GHz, Micro, U.FL Ant, MMT       |
| 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



FOR MORE INFORMATION  
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