

# DIGI XBEE 3 ZIGBEE 3.0

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

Digi XBee® 3 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 XBee 3 modules offer the flexibility to switch between multiple frequencies and wireless protocols as needed.

Digi XBee 3 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 XBee 3 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 XBee 3 Series is engineered to accelerate development and deployment.

## SIZE AND FLEXIBILITY

- At 13 mm x 19 mm, the new Digi XBee® 3 micro form factor allows for more compact and portable applications
- Digi XBee 3 is one module for all protocols including: Zigbee, 802.15.4, DigiMesh® and BLE, all configurable via Digi XCTU

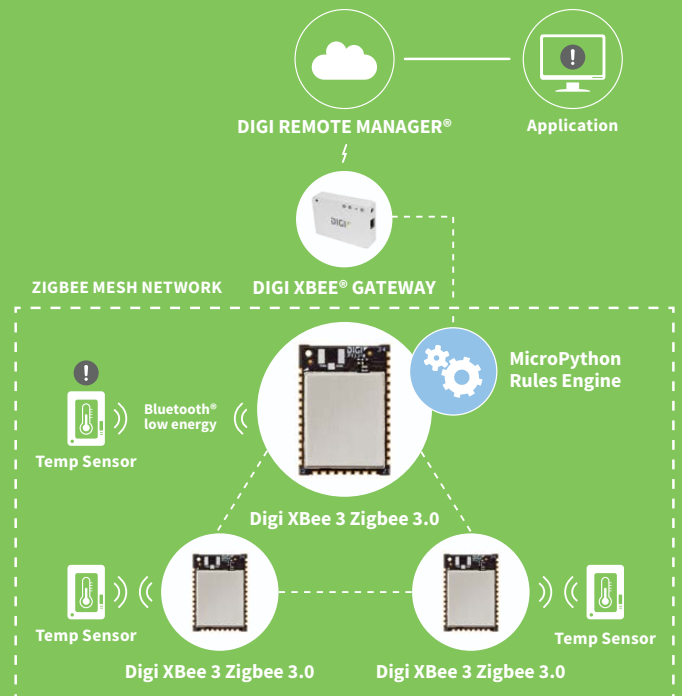
## PROGRAMMABILITY

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

## SECURITY

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

## APPLICATION EXAMPLE



## RELATED PRODUCTS AND SERVICES



## SPECIFICATIONS

## Digi XBee 3 Zigbee 3.0

## Digi XBee 3 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 60 m (200 ft)              | Up to 90 m (300 ft)    |
| OUTDOOR/RF LINE-OF-SIGHT RANGE* | Up to 1200 m (4000 ft)           | Up to 3200 m (2 miles) |
| 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 (-40° F to 185° F)                                                                                                                            |  |
| DIMENSIONS (L X W X H) | Through-hole: 2.438 x 2.761 cm (0.960 x 1.087 in)<br>SMT: 2.199 x 3.4 x 0.305 cm (0.866 x 1.33 x 0.120 in)<br>Micro: 13 x 19 x 2 mm (0.533 x 0.76 x 0.087 in) |  |

## PROGRAMMABILITY

|        |                                                        |  |
|--------|--------------------------------------------------------|--|
| MEMORY | 1 MB / 128 KB RAM (32KB are available for MicroPython) |  |
|--------|--------------------------------------------------------|--|

## 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 3.6 V                |                 |
| TRANSMIT CURRENT   | 40 mA @ 8 dBm               | 135 mA @ 19 dBm |
| RECEIVE CURRENT    | 17 mA                       |                 |
| POWER-DOWN CURRENT | 2 micro Amp @ 25° C (77° F) |                 |

## REGULATORY APPROVALS

|                         |     |     |
|-------------------------|-----|-----|
| FCC, IC (NORTH AMERICA) | Yes | Yes |
| ETSI (EUROPE)           | Yes | No  |
| RCM (AUSTRALIA)         | Yes | Yes |
| ANATEL (BRAZIL)         | Yes | Yes |
| TELECK MIC (JAPAN)      | Yes | No  |
| KCC (SOUTH KOREA)       | Yes | No  |

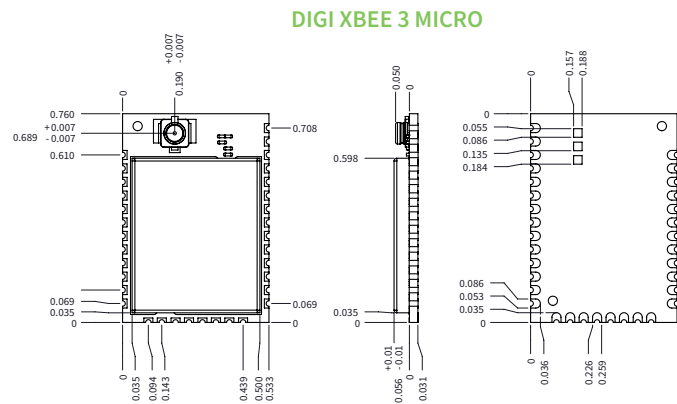
\*Range figure estimates are based on free-air terrain with limited sources of interference. Actual range will vary based on transmitting power, orientation of transmitter and receiver, height of transmitting antenna, height of receiving antenna, weather conditions, interference sources in the area, 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 XBee 3 Zigbee 3.0, 2.4 GHz, Micro, RF Pad Ant, MMT                 |
| XB3-24Z8UM-J  | Digi XBee 3 ZigBee 3.0, 2.4 GHz, Micro, U.FL Ant, MMT                   |
| XB3-24Z8CM-J  | Digi XBee 3 ZigBee 3.0, 2.4 GHz, Micro, Chip Ant, MMT                   |
| XB3-24Z8RM    | Digi XBee 3 PRO ZigBee 3.0, 2.4 GHz, Micro, RF Pad Ant, MMT             |
| XB3-24Z8UM    | Digi XBee 3 PRO ZigBee 3.0, 2.4 GHz, Micro, U.FL Ant, MMT               |
| XB3-24Z8CM    | Digi XBee 3 PRO ZigBee 3.0, 2.4 GHz, Micro, Chip Ant, MMT               |
| XB3-24Z8ST-J  | Digi XBee 3, 2.4 Ghz Zigbee 3.0, SMA Ant, TH MT                         |
| XB3-24Z8UT-J  | Digi XBee 3, 2.4 Ghz Zigbee 3.0, U.FL Ant, TH MT                        |
| XB3-24Z8PT-J  | Digi XBee 3, 2.4 Ghz Zigbee 3.0, PCB Ant, TH MT                         |
| XB3-24Z8ST    | Digi XBee 3 PRO, 2.4 Ghz Zigbee 3.0, SMA Ant, TH MT                     |
| XB3-24Z8UT    | Digi XBee 3 PRO, 2.4 Ghz Zigbee 3.0, U.FL Ant, TH MT                    |
| XB3-24Z8PT    | Digi XBee 3 PRO, 2.4 Ghz Zigbee 3.0, PCB Ant, TH MT                     |
| XB3-24Z8RS-J  | Digi XBee 3, 2.4 Ghz Zigbee 3.0, RF Pad Ant, SMT                        |
| XB3-24Z8US-J  | Digi XBee 3, 2.4 Ghz Zigbee 3.0, U.FL Ant, SMT                          |
| XB3-24Z8PS-J  | Digi XBee 3, 2.4 Ghz Zigbee 3.0, PCB Ant, SMT                           |
| XB3-24Z8RS    | Digi XBee 3 PRO, 2.4 Ghz Zigbee 3.0, RF Pad Ant, SMT                    |
| XB3-24Z8US    | Digi XBee 3 PRO, 2.4 Ghz Zigbee 3.0, U.FL Ant, SMT                      |
| XB3-24Z8PS    | Digi XBee 3 PRO, 2.4 Ghz Zigbee 3.0, PCB Ant, SMT                       |
| A24-HABUF-P5I | Antenna - 2.4 GHz, half wave dipole, 2.1 dBi, U.FL female, articulating |
| A24-HASM-450  | Antenna - 2.4 GHz, half wave dipole, 2.1 dBi, RPSMA male, articulating  |
| A24-HASM-525  | Antenna - 2.4 GHz, half wave dipole, 2.1 dBi, RPSMA male, articulating  |
| DC-ANT-24DT   | Antenna - Wi-Fi, table-top mount, 2450 Mhz, 0.5 m cable                 |

## PRODUCT DIMENSIONS



ACTUAL SIZE



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