

DIGI XBEE 3 DIGIMESH 2.4

Wireless connectivity using the innovative and easy-to-deploy DigiMesh® protocol

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.

These modules use the DigiMesh® networking protocol using a globally deployable 2.4 GHz transceiver. This peer-to-peer mesh network offers users added network stability through self-healing, dense network operation, extending the operational life of battery dependent networks and provides an upgrade path to IEEE 802.15.4 or Zigbee mesh protocols, if desired.

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 Digi 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
- Bluetooth® Low Energy for beaconing, connecting to Bluetooth sensors and local configuration using the Digi XBee Mobile app

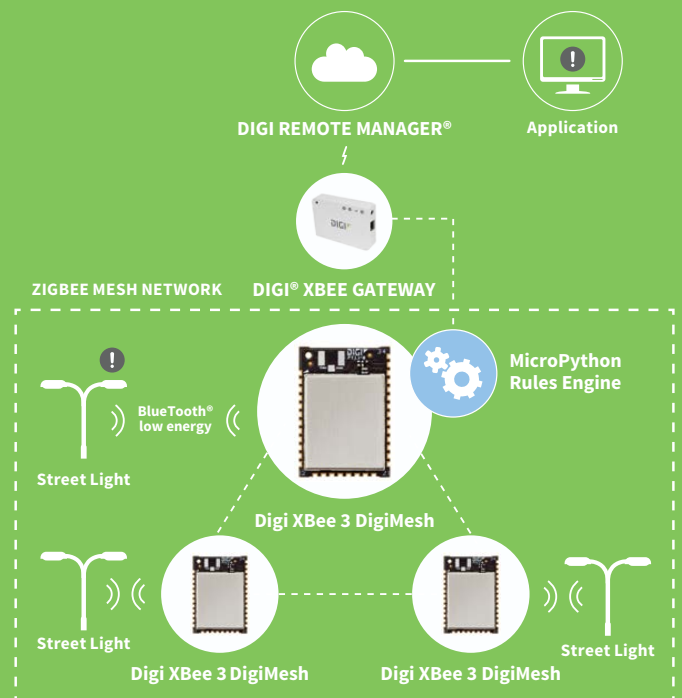
SECURITY

- 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



APPLICATION EXAMPLE



SPECIFICATIONS

Digi XBee 3 DigiMesh®

Digi XBee 3 DigiMesh® PRO

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 ² 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 SMT: RF Pad, PCB Antenna, or U.FL Connector 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) SMT: 2.199 x 3.4 x 0.305 cm (0.866 x 1.33 x 0.120 in) Micro: 13 x 19 x 2 mm (0.533 x 0.76 x 0.087 in) | |

PROGRAMMABILITY

| | | |
|-----------------|-------------------------|--|
| MEMORY | 1 MB / 128 KB RAM | |
| CPU/CLOCK SPEED | HCS08 / up to 50.33 MHz | |

NETWORKING AND SECURITY

| | | |
|--------------------------|--|--|
| PROTOCOL | 802.15.4 | |
| 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 | 135 mA @ 19 dBm | |
| RECEIVE CURRENT | 17 mA | |
| POWER-DOWN CURRENT | 2 micro Amp @ 25° C (77° F) | |

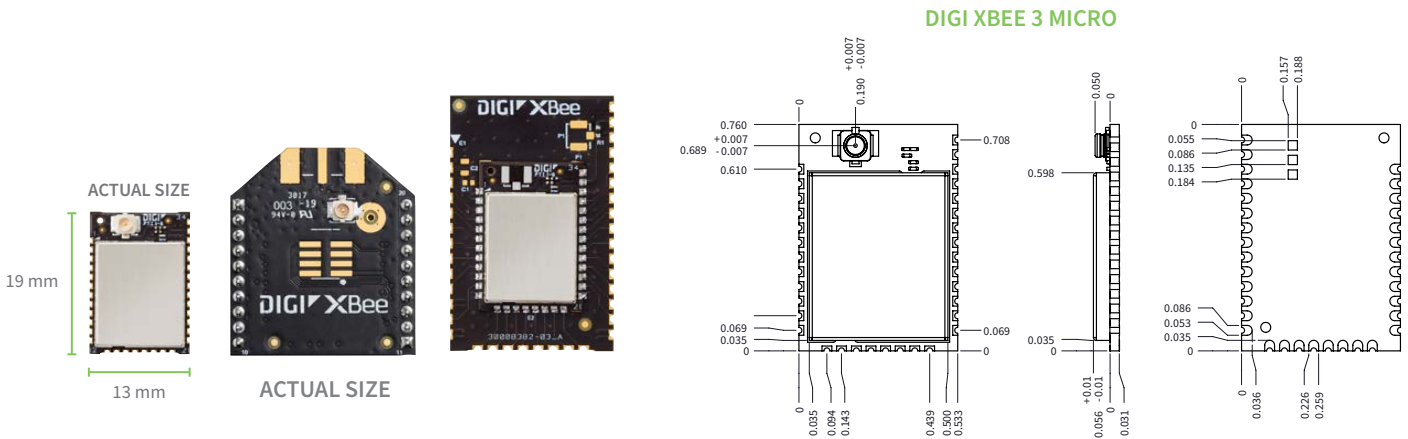
REGULATORY APPROVALS

| | | |
|-------------------------|-----|-----|
| 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 | 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 |
|---------------|---|
| XB3-24DMRM-J | Digi XBee 3, 2.4 Ghz, DigiMesh, Micro, RF Pad Ant, MMT |
| XB3-24DMUM-J | Digi XBee 3, 2.4 Ghz, DigiMesh, Micro, U.FL Ant, MMT |
| XB3-24DMCM-J | Digi XBee 3, 2.4 Ghz, DigiMesh, Micro, Chip Ant, MMT |
| XB3-24DMUS-J | Digi XBee 3, 2.4 Ghz, DigiMesh, SMT, U.FL |
| XB3-24DMPS-J | Digi XBee 3, 2.4 Ghz, DigiMesh, SMT, PCB ANT |
| XB3-24DMRS-J | Digi XBee 3, 2.4 Ghz, DigiMesh, SMT, RF Pad |
| XB3-24DMUT-J | Digi XBee 3, 2.4 Ghz, DigiMesh, TH, U.FL |
| XB3-24DMPT-J | Digi XBee 3, 2.4 Ghz, DigiMesh, TH, PCB ANT |
| XB3-24DMST-J | Digi XBee 3, 2.4 Ghz, DigiMesh, TH, RPSMA |
| XB3-24DMRM | Digi XBee 3 PRO, 2.4 Ghz, DigiMesh, Micro, RF Pad Ant, MMT |
| XB3-24DMUM | Digi XBee 3 PRO, 2.4 Ghz, DigiMesh, Micro, U.FL Ant, MMT |
| XB3-24DMCM | Digi XBee 3 PRO, 2.4 Ghz, DigiMesh, Micro, Chip Ant, MMT |
| XB3-24DMUS | Digi XBee 3 PRO, 2.4 Ghz, DigiMesh, U.FL Antenna, SMT |
| XB3-24DMPS | Digi XBee 3 PRO, 2.4 Ghz, DigiMesh, PCB Antenna, SMT |
| XB3-24DMRS | Digi XBee 3 PRO, 2.4 Ghz, DigiMesh, RF Pad Antenna, SMT |
| XB3-24DMUT | Digi XBee 3 PRO, 2.4 Ghz, DigiMesh, TH U.FL |
| XB3-24DMPT | Digi XBee 3 PRO, 2.4 Ghz, DigiMesh, TH PCB ANT |
| XB3-24DMST | Digi XBee 3 PRO, 2.4 Ghz, DigiMesh, TH RPSMA |
| 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



DIGI SERVICE AND SUPPORT / You can purchase with confidence knowing that Digi is always available to serve you with expert technical support and our industry leading warranty. For detailed information visit www.digi.com/support.

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