DIGI XBEE 3 802.15.4

Low-cost, easy-to-deploy modules for critical end-point device and sensor connectivity

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 3 802.15.4 modules are ideal for applications requiring low latency and predictable communication timing. Providing quick, robust communication in point-to-point, peer-to-peer, and multipoint/star configurations, Digi XBee 3 enables robust end-point connectivity with ease.

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

APPLICATION EXAMPLE
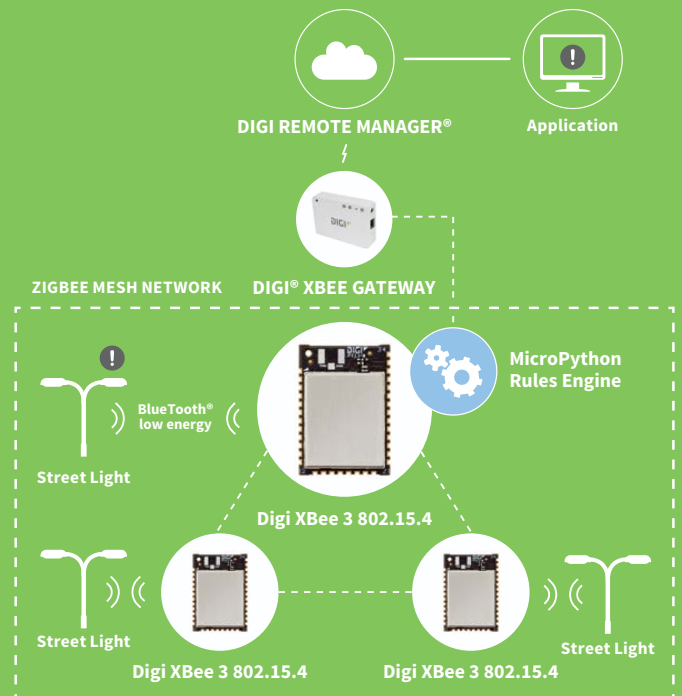
RELATED PRODUCTS AND SERVICES

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

SPECIFICATIONS	Digi XBee® 3 802.15.4	Digi XBee® 3 PRO 802.15.4
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, I²C	
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.

DIGI®

PART NUMBERS	DESCRIPTION
XB3-24ARM-J	Digi XBee 3, 2.4 Ghz, 802.15.4, Micro, RF Pad Ant, MMT
XB3-24AUM-J	Digi XBee 3, 2.4 Ghz, 802.15.4, Micro, U.FL Ant, MMT
XB3-24ACM-J	Digi XBee 3, 2.4 Ghz, 802.15.4, Micro, Chip Ant, MMT
XB3-24AUS-J	Digi XBee 3, 2.4 Ghz, 802.15.4, SMT U.FL
XB3-24APS-J	Digi XBee 3, 2.4 Ghz, 802.15.4, SMT PCB ANT
XB3-24ARS-J	Digi XBee 3, 2.4 Ghz, 802.15.4, SMT RF Pad
XB3-24AUT-J	Digi XBee 3, 2.4 Ghz, 802.15.4, TH U.FL
XB3-24APT-J	Digi XBee 3, 2.4 Ghz, 802.15.4, TH PCB ANT
XB3-24AST-J	Digi XBee 3, 2.4 Ghz, 802.15.4, TH RPSMA
XB3-24ARM	Digi XBee 3 PRO, 2.4 Ghz, 802.15.4, Micro, RF Pad Ant, MMT
XB3-24AUM	Digi XBee 3 PRO, 2.4 Ghz, 802.15.4, Micro, U.FL Ant, MMT
XB3-24ACM	Digi XBee 3 PRO, 2.4 Ghz, 802.15.4, Micro, Chip Ant, MMT
XB3-24AUS	Digi XBee 3 PRO, 2.4 Ghz, 802.15.4, U.FL Antenna, SMT
XB3-24APS	Digi XBee 3 PRO, 2.4 Ghz, 802.15.4, PCB Antenna, SMT
XB3-24ARS	Digi XBee 3 PRO, 2.4 Ghz, 802.15.4, RF Pad Antenna, SMT
XB3-24AUT	Digi XBee 3 PRO, 2.4 Ghz, 802.15.4, U.FL Antenna, TH
XB3-24APT	Digi XBee 3 PRO, 2.4 Ghz, 802.15.4, PCB Antenna, TH
XB3-24AST	Digi XBee 3 PRO, 2.4 Ghz, 802.15.4, SMA Antenna, TH
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
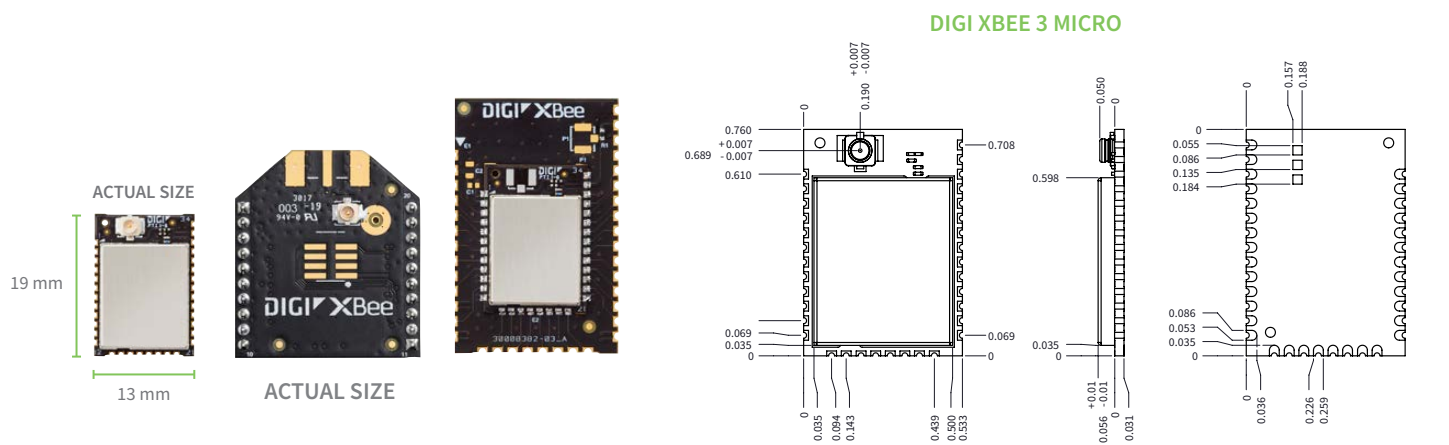
DIGI XBEE 3 MICRO

ACTUAL SIZE

19 mm

13 mm

ACTUAL SIZE

91004235
B2/221

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