

DIGI XBEE RR ZIGBEE 3.0

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

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

Digi XBee RR 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 RR modules can be easily configured, monitored 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. 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 RR Series is engineered to accelerate development and deployment.

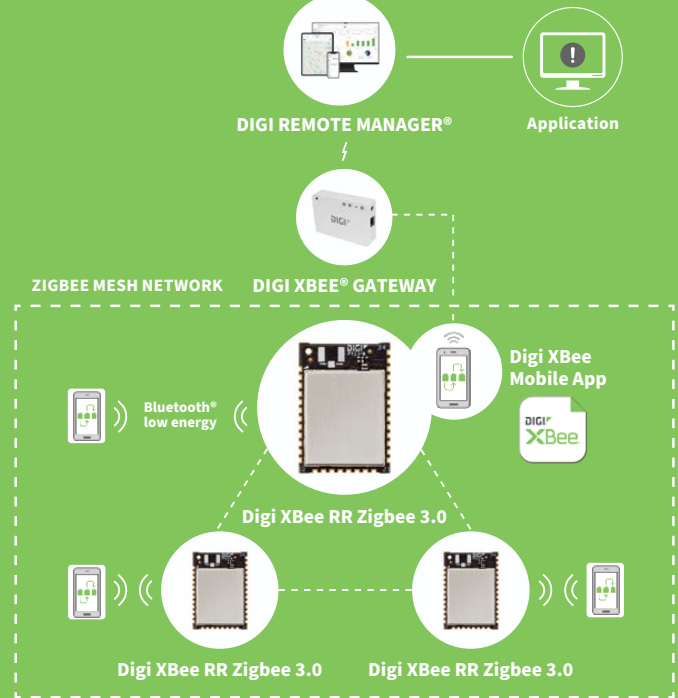
SIZE AND FLEXIBILITY

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



SPECIFICATIONS

Digi XBee® RR Zigbee 3.0

Digi XBee® RR PRO Zigbee 3.0

ZIGBEE 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	

BLUETOOTH® PERFORMANCE

TRANSCEIVER CHIPSET	Silicon Labs EFR32MG SoC	
BLE VERSION	Supports BLE 4.2 (slave only) and capable of interoperating with BLE 5.0 devices that support 1M PHY. Hardware is software upgradable to 5.0, but not yet enabled except payload extensions (future release).	
MAXIMUM DATA RATE	1 Mbps	
INDOOR/URBAN RANGE*	Up to 15 m (49 ft)	
OUTDOOR/RF LINE-OF-SIGHT RANGE*	Up to 300 m (984 ft)	
TRANSMIT POWER	+8 dBm	
RECEIVER SENSITIVITY (1% PER)	-95 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	13
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)
MEMORY	1 MB / 96 kB RAM

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

*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.

SPECIFICATIONS

Digi XBee® RR Zigbee 3.0

Digi XBee® RR PRO Zigbee 3.0

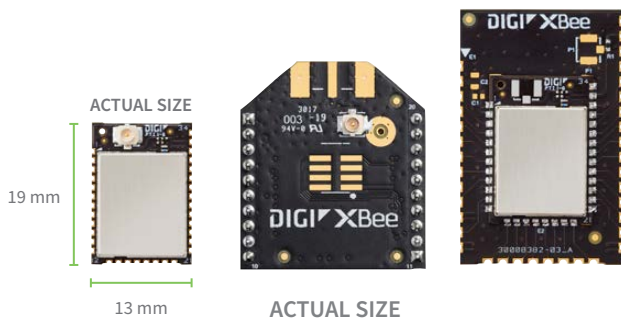
POWER REQUIREMENTS

SUPPLY VOLTAGE	1.72 to 3.8 V	
TRANSMIT CURRENT	30 mA @ 8 dBm	195 mA @ 19 dBm
RECEIVE CURRENT	14.5 mA	
POWER-DOWN CURRENT	8 micro Amps @ 25° C (77° F)	

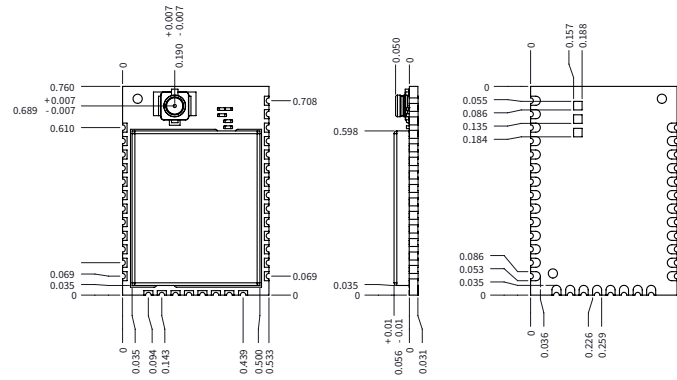
REGULATORY APPROVALS

FCC, IC (NORTH AMERICA)	Yes	Yes
ETSI (EUROPE)	Yes	No

PRODUCT DIMENSIONS



DIGI XBEE RR MICRO



PART NUMBERS**DESCRIPTION****DIGI XBEE RR ZIGBEE 3.0 MODULES**

XBRR-24Z8UM	Digi XBee RR PRO Zigbee 3.0, 2.4 GHz, U.FL ant, MMT, 1 MB flash, 96 kB RAM
XBRR-24Z8UM-J	Digi XBee RR Zigbee 3.0, 2.4 GHz, U.FL ant, MMT, 1 MB flash, 96 kB RAM
XBRR-24Z8RM	Digi XBee RR PRO Zigbee 3.0, 2.4 GHz, RF pad ant, MMT, 1 MB flash, 96 kB RAM
XBRR-24Z8RM-J	Digi XBee RR Zigbee 3.0, 2.4 GHz, RF pad ant, MMT, 1 MB flash, 96 kB RAM
XBRR-24Z8CM-J	Digi XBee RR Zigbee 3.0, 2.4 GHz, chip ant, MMT, 1 MB flash, 96 kB RAM
XBRR-24Z8UT	Digi XBee RR PRO Zigbee 3.0, 2.4 GHz, U.FL ant, through-hole, 1 MB flash, 96 kB RAM
XBRR-24Z8UT-J	Digi XBee RR Zigbee 3.0, 2.4 GHz, U.FL ant, through-hole, 1 MB flash, 96 kB RAM
XBRR-24Z8PT	Digi XBee RR PRO Zigbee 3.0, 2.4 GHz, PCB ant, through-hole, 1 MB flash, 96 kB RAM
XBRR-24Z8PT-J	Digi XBee RR Zigbee 3.0, 2.4 GHz, PCB ant, through-hole, 1 MB flash, 96 kB RAM

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