Digi XBee XR 900

The Digi XBee XR family operates in the 902 to 928 MHz range, delivering superior performance and interference immunity at 900 MHz

The **Digi XBee® XR 900** module is a compact and reliable solution supporting deployment of long-range connectivity applications. The pre-certified module operates between 902 and 928 MHz in compliance with standards.

Secure, robust and reliable

The Digi XBee XR 900 modules can be configured easily using Digi's easy-to-use **XCTU®** software or via Digi's simplified AT or API command sets. They are pre-certified for use in multiple countries and include integrated antennas, removing the burden of RF development/ support costs and enabling fast time to market for OEM designs. The utilization of Frequency Hopping Spread Spectrum (FHSS) on the XBee XR along with an industrial temperature range of −40 °C to 85 °C (−40 °F to 185 °F) make it ideal for applications in noisy, challenging environments.

The module supports both point-to-point and mesh networking protocols (**DigiMesh®**), with a line-of-sight range up to 17 kilometers. It is well suited for agriculture and energy applications where long-distance communication is required.

The Digi XBee XR 900 RF module is a complete hardware and software solution that works directly out of the box. Development kits along with Digi XBee Tools support the complete IoT application lifecycle, from evaluation, testing and prototyping through manufacturing and deployment to long-term network management.

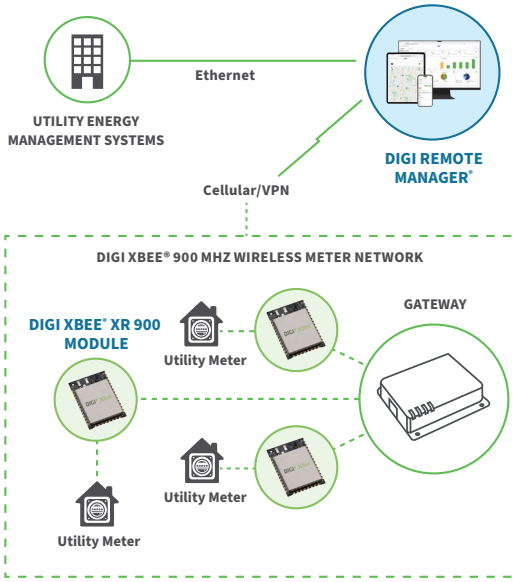
Related Digi devices

Modules | Development Kits | Gateways | Digi XCTU | Digi Remote Manager

Key features, benefits and applications

- Fully certified for use in unlicensed 900 MHz band
- RF module based on Silicon Labs EFR32 microcontroller
- Design includes SAW filter for optimal performance in noisy RF environments
- 256-bit AES encryption for secure data communication
- **DigiMesh** networking topology for redundancy and reliability
- Simple configuration using **Digi XCTU** accelerates time to market
- **Digi XBee Tools** to simplify tasks and get to market faster

Application example



Need custom gateway engineering support?
Contact Digi Wireless Design Services.

DIGI XBEE XR 900

Specifications

SPECIFICATIONS	DIGI XBEE XR 900
HARDWARE	
PROCESSOR	EFR32FG13P231F512 transceiver at 40 MHz
FREQUENCY BAND	902 MHz – 928 MHz
ANTENNA OPTIONS	Dipole antennas with U.FL connector, RF pad
AVAILABLE FORM FACTORS	Micro (MMT), surface mount (SMT) and through-hole (TH)
WEIGHT	MMT: 1.2 grams (0.042 oz) SMT: 3.0 grams (0.106 oz) TH: 3.1 grams (0.109 oz)
DIMENSIONS	MMT: 13 mm x 19 mm x 2 mm (0.533 in x 0.76 in x 0.087 in) SMT: 2.199 cm x 3.4 cm x 0.305 cm (0.866 in x 1.33 x 0.120 in) TH: 2.438 cm x 2.761 cm (0.960 in x 1.087 in)
PERFORMANCE	
RF DATA RATE	Low data rate: 10 kbps; middle data rate: 110 kbps; high data rate: 250 kbps
UART DATA RATE	Up to 921.6 kbps
SPI DATA RATE	Up to 5 Mbps
LINE-OF-SIGHT RANGE*	Up to 17 km (10.5 mi) rural, up to 3 km (1.8 mi) urban
INDOOR RANGE	Up to 140 m (460 ft)
TRANSMIT POWER	Up to 19 dBm ERP
RECEIVER SENSITIVITY	Low data rate: −113 dBm; middle data rate: −108 dBm; high data rate: −104 dBm
RECEIVER BLOCKING	Below 900 MHz and above 930 MHz; >70 dB
FEATURES	
DIGITAL I/O	15
AVAILABLE CHANNEL FREQUENCIES	Low and middle data rate: 101**; high data rate: 50
ANALOG INPUTS	(4) 10-bit ADC inputs
OPERATING TEMPERATURE	−40 °C to 85 °C (−40 °F to 185 °F)
NETWORKING TOPOLOGIES	Point-to-point/point-to-multipoint, DigiMesh
SECURITY	256-bit AES encryption
POWER	
SUPPLY VOLTAGE	2.1 – 3.6 VDC, 3.3 VDC typical
TRANSMIT CURRENT	110 mA
RECEIVE CURRENT	28 mA
SLEEP CURRENT	1.2 uA
REGULATORY APPROVALS**	
FCC (USA)	Yes
ISED (CANADA)	Yes
ROHS	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.

Visit **digi.com/resources/certifications for latest updates.

DIGI XBEE XR 900

Digi XCTU and Digi XBee Tools

Digi XCTU

Digi XCTU is a free multi-platform application designed to enable developers to interact with Digi RF modules through a simple-to-use graphical interface. It includes a tool suite that makes it easy to set up, configure and test **Digi XBee RF modules**.

Learn more at digi.com/XCTU.

Next generation configuration platform for XBee / RF solutions

Digi XCTU includes all of the tools a developer needs to quickly get up and running with Digi XBee. This tool includes unique features like a graphical network view, which graphically represents the Digi XBee network along with the signal strength of each connection. The Digi XBee API frame builder intuitively helps to build and interpret API frames for Digi XBees being used in API mode. These and other features combine to make development on the Digi XBee platform easier than ever.

Features

- Digi XCTU is a **free, multi-platform** application compatible with Windows, MacOS and Linux.
- It provides a **Graphical Network View** for simple wireless network configuration and architecture.
- The **API Frame Builder** is a simple development tool for quickly building Digi XBee API frames.
- The **Firmware Release Notes Viewer** allows users to explore and read firmware release notes.

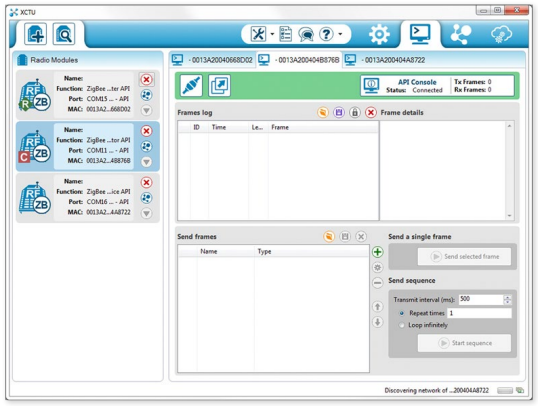
Digi XBee Tools

DEVELOP BUILD DEPLOY MANAGE

Digi XBee Tools support the complete IoT application lifecycle, from the evaluation, testing and prototyping phase through manufacturing and deployment to long-term network management.

Digi XBee Tools offer total lifecycle management from the moment you launch development of your IoT application, through production of your configured devices, on-site installation and monitoring and management of your deployed Digi XBee network.

Learn more at digi.com/xbee.



DIGI XCTU

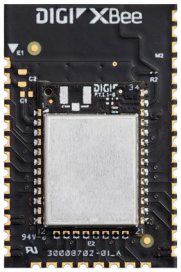
Additional highlights

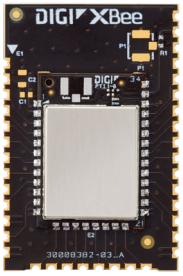
- You can manage and configure multiple RF devices, even remotely (over-the-air) connected devices.
- The firmware update process seamlessly restores your module settings, automatically handling mode and baud rate changes.
- Two specific API and AT consoles enable you to communicate with your radio devices.
- You can save your console sessions and load them in a different PC running Digi XCTU.
- Digi XCTU includes a set of embedded tools that can be executed without having any RF module connected:
  - Frames generator: Easily generate any kind of API frame to save its value.
  - Frames interpreter: Decode an API frame and see its specific frame values.
  - Recovery: Recover radio modules that have damaged firmware or are in programming mode.
  - Load console session: Load a console session saved in any PC running Digi XCTU.
  - Range test: Perform a range test between two radio modules of the same network.
  - Firmware explorer: Navigate through XCTU's firmware library.
- An update process allows you to automatically update the application itself and the radio firmware library without needing to download any extra files.
- Digi XCTU contains complete and comprehensive documentation which can be accessed at any time.

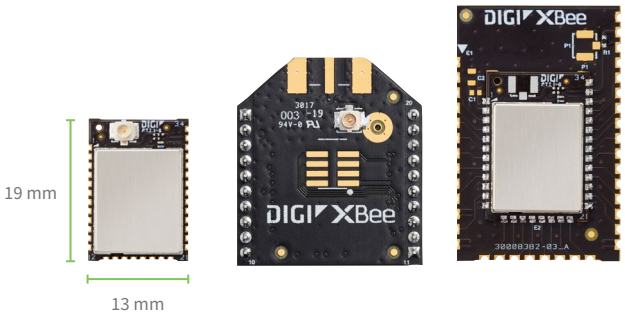
DIGI XBEE XR 900

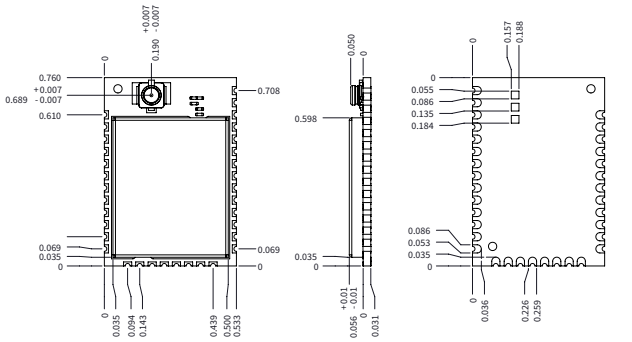
Photos

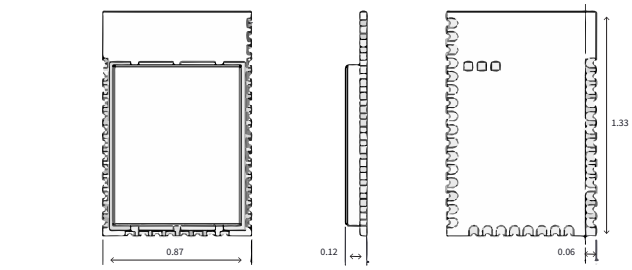
Digi XBee XR 900 images and dimensions

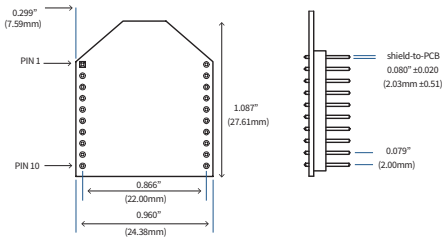












DIGI XBEE XR 900

Part Numbers

PART NUMBERS	DIGI XBEE XR 900
DIGI XBEE XR 900 MMT	
XB-9XR-DMRM-001	Digi XBee XR 900 MHz MMT with RF Pad antenna connection
XB-9XR-DMUM-001	Digi XBee XR 900 MHz MMT with dipole antenna, U.FL connector

PART NUMBERS	DIGI XBEE XR 900 DEVELOPMENT KIT
DIGI XBEE XR 900 DEVELOPMENT KIT	
XK-9XR-DMM-0	Digi XBee XR 900 Development Kit with Digi XBee XR 900 MHz MMT modules, dipole antennas with U.FL connector and Digi XBee XBIB-C Development Boards

For more information, visit digi.com.

For more information about Digi XBee XR 900, visit digi.com/xr900.

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