Digi XBee XR 868 Development Kit

Complete Digi XBee XR 868 development platform operates in the 863-870 MHz range, delivering superior performance and interference immunity

The **Digi XBee® XR 868 Development Kit** features Digi XBee XR 868 MHz micro-mount (MMT) modules, dipole antennas with U.FL connectors and Digi XBIB-C Development Boards. The pre-certified Digi XBee XR 868 module is a compact and reliable solution supporting deployment of long-range connectivity applications in the European region, and operates between 863 and 870 MHz in compliance with European standards.

The module enables both point-to-point and mesh networking protocols, with a line-of-sight range of over 14 kilometers. It is well suited for agriculture and energy applications where long-distance communication is required.

Intelligent interference management

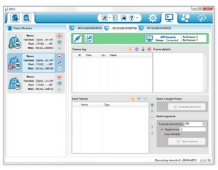
Digi XBee XR 868 also leverages 868 MHz and surrounding frequencies for LBT + AFA (Listen Before Talk and Adaptive Frequency Agility). This significantly reduces interference by listening to the radio environment before any transmission starts, and automatically shifts to a new channel when interference is detected. This patented frequency scan occurs automatically and in a matter of microseconds so as not to impact performance.

Accelerate development with Digi XCTU®

The Digi XBee XR 868 RF module is a complete hardware and software solution that works directly out of the box. **Digi XCTU**, Digi's easy-to-use RF configuration tool, reduces development time from months to weeks, ensuring your product gets to market fast.

Proven experience and expert support

With decades of experience enabling millions of globally connected products, Digi is a trusted embedded and IoT solutions provider, simplifying the way OEMs design, build and deploy connected applications. **Digi Wireless Design Services** (WDS) offers custom design and build services, configuration, certification assistance and additional services to support you wherever you are along your development path to get your products to market smarter and faster.



Connect this device with Digi XCTU.
Create. Configure. Deploy. Manage.

The kit includes:

- ✓ Three Digi XBee XR 868 MHz RF modules
- ✓ Three Digi XBIB-C Development Boards
- ✓ Three dipole antennas with U.FL connectors
- ✓ **Digi XCTU** and **Digi XBee Tools**
- ✓ Free Level 1 schematic review from **Digi WDS**
- ✓ Additional documentation and examples

PART NUMBER	DESCRIPTION
XK-8XR-DMM	Digi XBee XR 868 Development Kit

Key features, benefits and applications

- Low-power CE/RED certified 868 MHz RF module based on Silicon Labs EFR32 microcontroller
- Design includes SAW filter for optimal performance in noisy RF environments
- Listen-Before-Talk and Frequency Agility for optimal interference immunity
- **DigiMesh®** networking topology for redundancy and reliability
- Simple configuration using **Digi XCTU** accelerates time to market
- Turnkey development and custom gateway engineering services available from **Digi WDS**

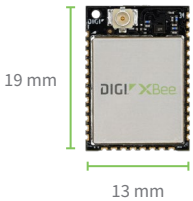
DIGI XBEE XR 868 DEVELOPMENT KIT

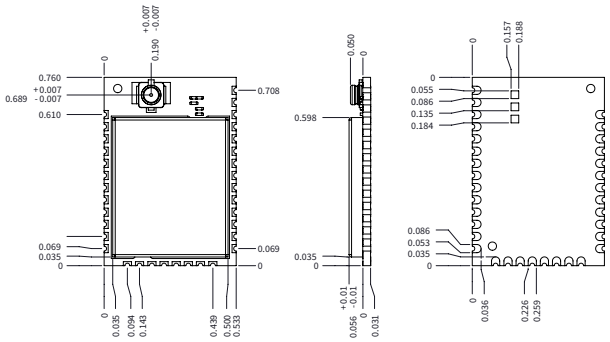
Specifications

DIGI XCTU

Manage and configure Digi XBee XR 868 modules with Digi XCTU

SPECIFICATIONS	DIGI XBEE XR 868
HARDWARE	
PROCESSOR	EFR32FG13P231F512 transceiver at 40 MHz
FREQUENCY BAND	863 MHz – 870 MHz
AVAILABLE FORM FACTORS	Micro-mount (MMT), surface-mount (SMT), through-hole (TH)
ANTENNA OPTIONS	MMT: U.FL connector, RF pad; SMT: U.FL connector, RF pad, chip; TH: U.FL connector, SMA
DIMENSIONS	MMT: 13 x 19 x 2 mm (0.533 x 0.76 x 0.087 in); SMT: 2.199 x 3.4 x 0.305 cm (0.866 x 1.33 x 0.120 in); TH: 2.438 x 2.761 cm (0.960 x 1.087 in)
WEIGHT	MMT: 1.2 g (0.042 oz); SMT: 3.0 g (0.106 oz); TH: 3.1 g (0.109 oz)
PERFORMANCE	
RF DATA RATE	10 kbps or 80 kbps, software selectable
UART DATA RATE	Up to 921.6 kbps
SPI DATA RATE	Up to 5 Mbps
LINE-OF-SIGHT RANGE*	Up to 14.5 km with 2.1 dBi antenna
TRANSMIT POWER	Up to 13 dBm ERP
RECEIVER SENSITIVITY	−107 dBm at 80 Kbps, −112 dBm at 10 Kbps
FEATURES	
I/O	13 digital I/O
ANALOG INPUTS	4 channels 10-bit
OPERATING TEMPERATURE	−40 °C to 85 °C (−40 °F to 185 °F), temperature compensated crystal oscillator
NETWORKING TOPOLOGIES	DigiMesh, repeater; SX protocol compatible
SECURITY	256-bit AES encryption
POWER	
SUPPLY VOLTAGE	1.8 – 3.6 VDC
TRANSMIT CURRENT	76 mA
RECEIVE CURRENT	26 mA
SLEEP CURRENT	1.5 uA
REGULATORY APPROVALS**	
ETSI (EUROPE)	CE/RED
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 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 Digi 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

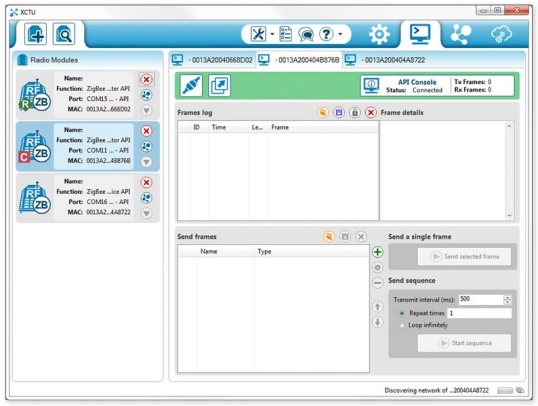
- Digi XCTU is a **free, multi-platform** application compatible with Windows, MacOS and Linux.
- It provides a **Graphical Network View** for simple wireless network configuration and architecture.
- The **API Frame Builder** is a simple development tool for quickly building Digi XBee API frames.
-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

Digi XBee Tools

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 868 DEVELOPMENT KIT

Digi Wireless Design Services and Part Numbers

Digi Wireless Design Services

DEFINITION

DEVELOPMENT

CERTIFICATION

MANUFACTURING

Get to market faster with Digi WDS

Digi Wireless Design Services (WDS) has a proven history of helping clients speed down the path to success by guiding them through the technological and regulatory certification pitfalls that botch budgets and disrupt product introductions.

We begin by actively listening to your business and technical requirements, and then leverage our proven methodology, world-class engineering expertise and library of IP to design a cost-effective solution that is tailored to your specific needs. Accelerate toward the solution that is right for you and your customers.

Contact Digi WDS to find out how we can guide you to success.

Your world-class IoT design and engineering team

We offer services to support you wherever you are along your development path, with a record that speaks for itself.

- Proof of concept
- Architecture consultation
- Requirements definition
- System, software and electrical design
- Design reviews
- Certifications
- Prototype build
- Manufacturing test fixtures
- 250+ product development projects
- 100+ certification failure and performance rescues
- 100 million connected devices around the globe

PART NUMBERS	DIGI XBEE XR 868 DEVELOPMENT KIT
DIGI XBEE XR 868 DEVELOPMENT KIT	
XK-8XR-DMM	Digi XBee XR 868 Development Kit with Digi XBee XR 868 MHz, U.FL, MMT

For more information, please visit digi.com.

For more information about the Digi XBee XR 868 Development Kit, visit **digi.com/xbee-xr-868-kit**.

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