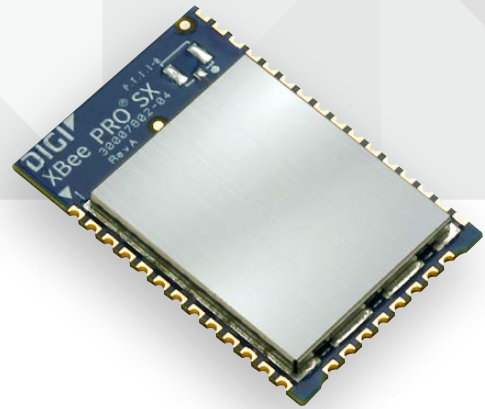


LOW-POWER RF  
MODULE FOR EUROPE



# DIGI XBEE SX 868

RF module family operates in the 863-870 MHz range delivering superior performance and interference immunity at 868 MHz

The Digi XBee® SX 868 is an 868 MHz RF module for Europe. The module can run either a proprietary DigiMesh® or point-to-multipoint networking protocol utilizing a low-power Silicon Labs microcontroller and an Analog Devices ADF7023 transceiver, along with an integrated SAW filter which offers industry-leading interference blocking. The Digi XBee SX 868 operates between 863 MHz and 870 MHz, making it deployable in several regions throughout the world including approved European countries.

The Digi XBee SX 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

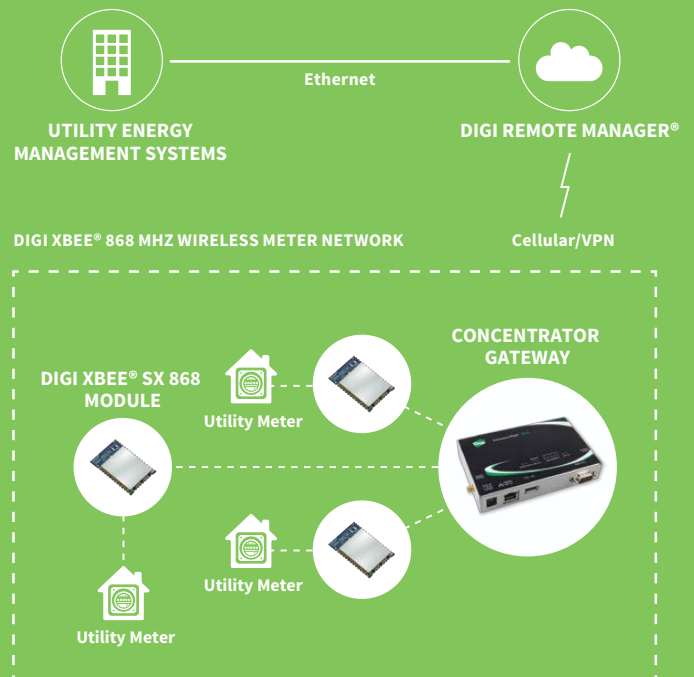
the radio environment before any transmission starts, and automatically shifting to a new channel when interference is detected. This patented frequency scan occurs automatically and in a matter of microseconds so as not to impact performance.

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

## BENEFITS

- Low-power CE/RED certified 868 MHz RF module based on Silabs EFM32 and ADI7023
- Design includes SAW filter for optimal performance in noisy RF environments
- OTA and pin compatible with legacy Digi XBee 868LP
- Listen-Before-Talk and Frequency Agility for optimal interference immunity
- DigiMesh networking topology for redundancy and reliability
- Simple configuration using XCTU accelerates time to market

## APPLICATION EXAMPLE



## RELATED PRODUCTS



Modules



Development Kits



Gateways



XCTU®



Digi Remote Manager®

## SPECIFICATIONS

## Digi XBee® SX 868

### HARDWARE

<b>PROCESSOR</b>	ADF7023 transceiver, Cortex®-M3 EFM32LG230F256 @ 48 MHz
<b>FREQUENCY BAND</b>	863 MHz to 870 MHz
<b>ANTENNA OPTIONS</b>	U.FL, RF pad

### PERFORMANCE

<b>RF DATA RATE</b>	10 Kbps or 80 Kbps, software selectable
<b>UART DATA RATE</b>	Up to 921 Kbps
<b>SPI DATA RATE</b>	Up to 6 Mbps
<b>THEORETICAL LINE-OF-SIGHT RANGE*</b>	Up to 14.5 km w/ 2.1 dBi antenna
<b>TRANSMIT POWER</b>	Up to 13 dBm ERP
<b>RECEIVER SENSITIVITY</b>	-106 dBm @ 80 Kbps, -113 dBm @ 10 Kbps

### FEATURES

<b>I/O</b>	13 Digital I/O
<b>ANALOG INPUTS</b>	4 channels 10-bit
<b>OPERATING TEMPERATURE</b>	-40° C to 85° C (-40° F to 185° F)
<b>NETWORKING TOPOLOGIES</b>	DigiMesh®, Repeater, Point-to-point, Point-to-multipoint, Peer-to-peer
<b>SECURITY</b>	128-bit AES Encryption

### POWER

<b>SUPPLY VOLTAGE</b>	2.4 - 3.6 VDC
<b>TRANSMIT CURRENT</b>	55 mA
<b>RECEIVE CURRENT</b>	40 mA
<b>SLEEP CURRENT</b>	1.8 uA

### REGULATORY APPROVALS

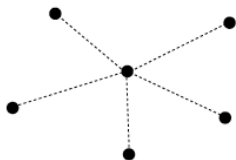
<b>ETSI (EUROPE)</b>	CE/RED
<b>ROHS</b>	Compliant

## PART NUMBERS

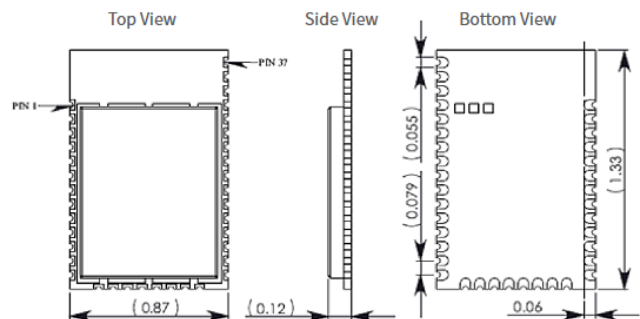
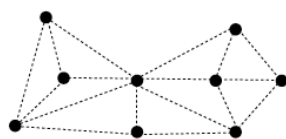
## DESCRIPTION

XB8X-DMUS-001	Digi XBee SX 868, 32 mW, DigiMesh / P2MP, U.FL, Europe
XB8X-DMRS-001	Digi XBee SX 868, 32 mW, DigiMesh / P2MP, RF Pad, Europe
XK8X-DMS-0	Digi XBee SX 868 Development Kit

Point-to-Multipoint / Star



DigiMesh



\*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.

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