



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

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. Digi XBee SX 868 operates between 863 MHz and 870 MHz, making it deployable in several regions throughout the world including approved European countries.

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

RELATED PRODUCTS



Modules



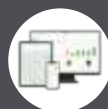
Development Kits



Gateways

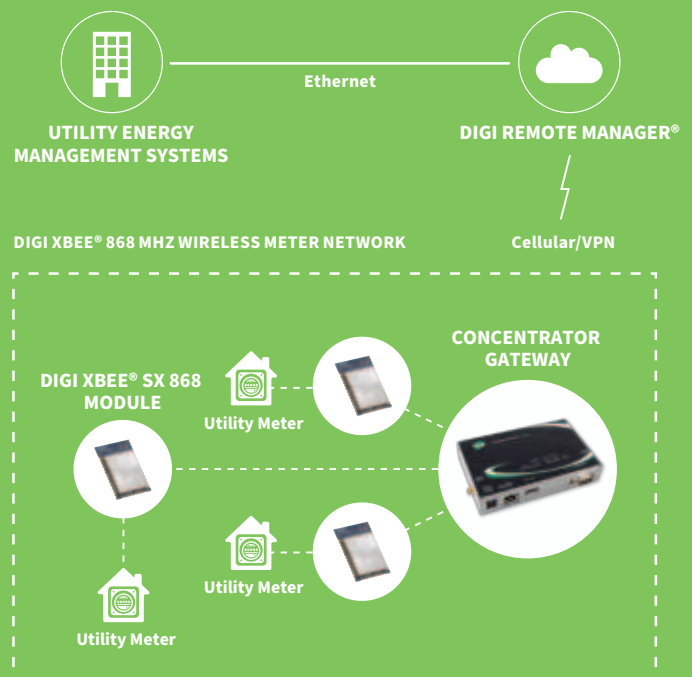


XCTU®



Digi Remote Manager®

APPLICATION EXAMPLE



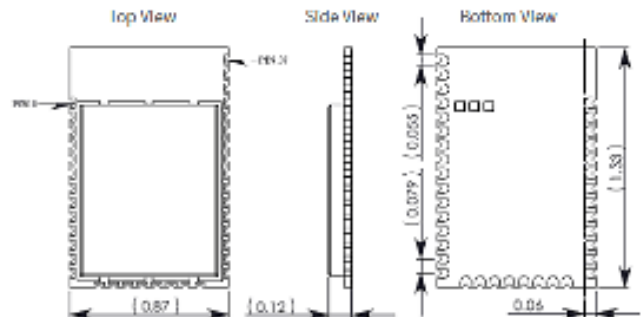
SPECIFICATIONS		Digi XBee SX 868
HARDWARE		
PROCESSOR	ADF7023 transceiver, Cortex®-M3 EFM32LG230F256 at 48 MHz	
FREQUENCY BAND	863 MHz to 870 MHz	
ANTENNA OPTIONS	U.FL, RF pad	
PERFORMANCE		
RF DATA RATE	10 Kbps or 80 Kbps, software selectable	
UART DATA RATE	Up to 921 Kbps	
SPI DATA RATE	Up to 6 Mbps	
THEORETICAL LINE-OF-SIGHT RANGE*	Up to 14.5 km w/ 2.1 dBi antenna	
TRANSMIT POWER	Up to 13 dBm ERP	
RECEIVER SENSITIVITY	-106 dBm at 80 Kbps, -113 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)	
NETWORKING TOPOLOGIES	DigiMesh, Repeater, Point-to-point, Point-to-multipoint, Peer-to-peer	
SECURITY	128-bit AES Encryption	
POWER		
SUPPLY VOLTAGE	2.4 - 3.6 VDC	
TRANSMIT CURRENT	55 mA	
RECEIVE CURRENT	40 mA	
SLEEP CURRENT	1.8 uA	
REGULATORY APPROVALS		
ETSI (EUROPE)	CE/RED	
ROHS	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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