



**THE DATASHEET OF  
XB8-DMUS-002**





LOW-POWER RF  
MODULE FOR EUROPE



# XBEE® 868LP FOR EUROPE

RF module family operates in the 863-870 MHz range utilizing 30 channels to deliver superior performance and interference immunity at 868 MHz

The XBee 868LP module was designed to provide a high-performance, low-power module at an extremely competitive price point. The XBee 868LP module can run either a proprietary DigiMesh® or point-to-multipoint networking protocol utilizing a low-power Energy Micro microcontroller and an Analog Devices ADF7023 transceiver, which offers industry-leading interference blocking. The XBee 868LP operates between 863-870 MHz, making it deployable in several regions throughout the world including approved European countries and India by utilizing a software selectable channel masking feature.

The XBee 868LP is also the industry's first RF module using 868 MHz and surrounding frequencies for LBT + AFA (Listen Before Talk and Adaptive Frequency Agility). This virtually eliminates interference by

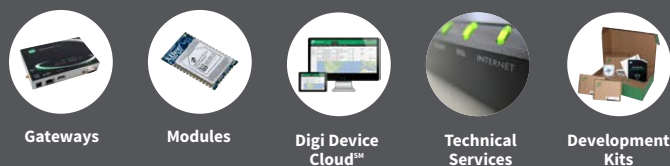
listening to the radio environment before any transmission starts, and automatically shifting to a new channel when interference is detected. This patent-pending frequency scan occurs automatically and in a matter of microseconds so as not to impact performance.

The programmable version of the XBee 868LP module makes customizing wireless applications easy. Programming directly on the module eliminates the need for a separate host processor. Because the wireless software is isolated, applications can be developed with no risk to RF performance, security or additional certifications.

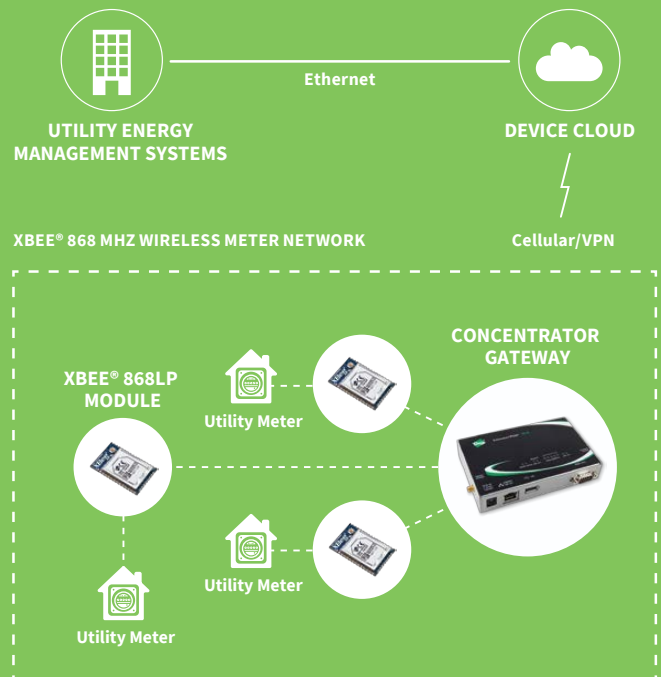
## BENEFITS

- Industry's first RF module to utilize LBT + AFA for interference immunity
- Modules can operate in DigiMesh or point-to-multipoint wireless networking topologies
- Programmable versions of the XBee 868LP enable custom application development
  - 8-bit Freescale™ S08 microprocessor brings custom intelligence to the module
  - XBee-specific CodeWarrior® development tools for easy programming
- Pin-compatible with other XBee SMT modules
- RF throughput up to 50 Kbps

## RELATED PRODUCTS



## APPLICATION EXAMPLE



# SPECIFICATIONS

# XBee® 868LP for Europe

# Programmable XBee® 868LP for Europe

## HARDWARE

<b>PROCESSOR</b>	ADF7023 transceiver, Cortex™-M3 EFM32G230 @ 32 MHz
<b>FREQUENCY BAND</b>	863 MHz to 870 MHz
<b>ANTENNA OPTIONS</b>	U.FL, RF pad, PCB (PCB antenna only approved with 10 Kbps data rate)

## PERFORMANCE

<b>RF DATA RATE</b>	10 Kbps or 80 Kbps
<b>INDOOR/URBAN RANGE</b>	Up to 370 ft (112 m) w/2.1 dBi antenna, up to 46 ft (14 m) w/PCB embedded antenna
<b>OUTDOOR/LINE-OF-SIGHT RANGE</b>	Up to 5.2 miles (8.4 km) w/2.1 dBi antenna, up to 0.4 miles (.64 km) w/PCB embedded antenna
<b>TRANSMIT POWER</b>	Up to 14 dBm (25 mW) E.I.R.P. w/ 2 dBi antenna, software selectable
<b>RECEIVER SENSITIVITY</b>	-101 dBm @ 80 Kbps, -106 dBm @ 10 Kbps

## FEATURES

<b>I/O</b>	13
<b>ANALOG INPUTS</b>	4 channels 10-bit
<b>OPERATING TEMPERATURE</b>	-40° C to +85° C
<b>NETWORKING TOPOLOGIES</b>	DigiMesh®, Repeater, Point-to-point, Point-to-multipoint, Peer-to-peer

## PROGRAMMABILITY

<b>MEMORY</b>	N/A	32 KB Flash / 2 KB RAM
<b>CPU/CLOCK SPEED</b>	N/A	HCS08 / Up to 50.33 MHz

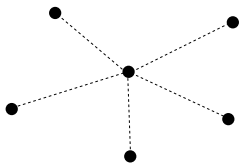
## POWER

<b>SUPPLY VOLTAGE</b>	2.7- 3.6 VDC	
<b>TRANSMIT CURRENT</b>	48 mA	62 mA
<b>RECEIVE CURRENT</b>	27 mA	41 mA
<b>SLEEP CURRENT</b>	1.7 uA	2.3 uA

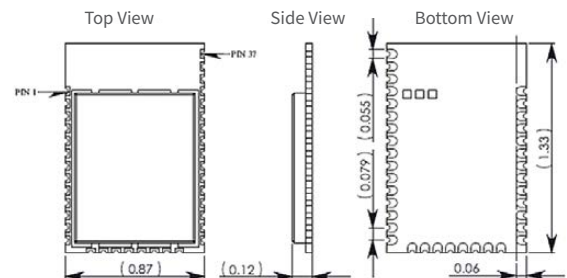
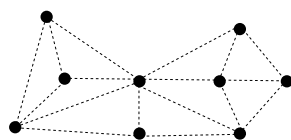
## REGULATORY APPROVALS

<b>ETSI (EUROPE)</b>	CE
<b>ROHS</b>	Yes

Point-to-Multipoint / Star



DigiMesh



PART NUMBERS	DESCRIPTION
XB8-DMRS-002	XBee 865/868LP RF pad Antenna 80kbps
XB8-DMUS-002	XBee 865/868LP U.FL Antenna 80kbps
XB8-DMPS-002	XBee 865/868LP PCB Antenna 80kbps (Not Approved in Europe)
XB8-DPPS-001	XBee 865/868LP PCB Antenna 10kbps
XB8-DPRS-001	XBee 865/868LP RF pad Antenna 10kbps
XB8-DPUS-001	XBee 865/868LP U.FL Antenna 10kbps
XB8-DMPSB002	XBee DigiMesh 865/868LP PCB Antenna 80Kbps, 32K Programmable (Not Approved in Europe)
XB8-DMUSB002	XBee DigiMesh 865/868LP U.FL Antenna 80Kbps, 32K Programmable
XB8-DMRSB002	XBee DigiMesh 865/868LP RF Pad Antenna 80Kbps, 32K Programmable
XK8-DMS-0	XBee 865/868LP Dev Kit Modules in this kit require additional configuration for use in India. See the Product Manual for more details
XK8-DMSB0	XBee 865/868LP Dev Kit 32K Programmable

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