

# RM868 Radio Modem

The RM868 radio modem leverages the Digi XBEE technology to offer complex data transmission functionalities in the 868 MHz ISM band.

The modem can be used in various topologies, either in peer-to-peer, point-to-point or point-to-multipoint networks, or running the proprietary Digi International's DigiMesh<sup>®</sup> protocol.

Thanks to its reliability, versatility and easy setup it can be the product of choice for a wide range of applications.

## HARDWARE DESCRIPTION

- Based on the DIGI XBEE<sup>®</sup> RF module
- RS232, RS422 and RS485 Serial interfaces configurable by micro-switch
- Low-power, transmission range (LoS) up to 14 km with the default antenna (2.1 dBi)
- Analog and digital inputs for external sensors and / or actuators
- Highly stabilized reference voltage for analog sensors
- Input for backup Li Polymer battery;
- Industrial temperature range
- Die cast aluminum case, ingress protection class IP66
- Rugged dipole antenna, eliminating the need for an external ground plane

## CONFIGURATION

- Radio and network parameters can be configured Over the Air (OTA) via the free DIGI XCTU software application
- The radio network performance can also be tested via DIGI XCTU
- Various network topologies can be chosen from, depending on the actual needs



## COMMUNICATION

- RF Module certified for Europe
- Integrated SAW filter for high resilience to RF noise
- Excellent receiver sensitivity
- LBT (Listen-Before-Talk) and AFA (Adaptive Frequency Agility) which significantly reduces the interferences
- 128-bit AES Encryption

Specifications	RM868
Processor	ADF7023 transceiver, Cortex™-M3 EFM32LG230F256 @ 48 MHz
Frequency band	863 MHz to 870 MHz
Theoretical LoS range	Up to 14.5 km with default 2.1 dBi antenna
Transmit power	Up to 13 dBm ERP
Receiver sensitivity	-106 dBm @ 80 Kbps, -113 dBm @ 10 Kbps
RF data rate	10 Kbps or 80 Kbps, user selectable
UART data rate	Up to 921 Kbps
Encryption	128-bit AES Encryption
Networking topologies	DigiMesh®, Repeater, Point-to-point, Point-to-multipoint, Peer-to-peer, user configurable
RF Module approvals	ETSI (EUROPE) CE/RED, ROHS Compliant
Supply voltage	4.5 to 36 VDC
Working temperature	-40 °C to +85 °C
Current (mA @12 VDC)	20 mA / 30mA (idle/transmission)
Serial interfaces	RS232 / RS485 / RS422
Size	65 x 115 x 30 mm
Case ingress protection	IP66

Different options are available. Order code description below:

	Radio modem	RM	F	SER	IO	0/1
1	Frequency band	868 = 868 MHz	868			
2	Serial interface	A = Default configuration RS232 B = Default configuration RS485 C = Default configuration RS422		A B C		
3	Sensor A/D Inputs/Outputs	0 = No sensor Inputs and Outputs 1 = Analog/Digital sensor Inputs and Outputs			0 1	
4	Backup Battery	0 = No backup battery 1 = Li Polymer backup battery				0 1

Product code example:

RM	868	B	1	1
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