

## LOW POWER RADIO MODULE FOR THE 868 MHz FREQUENCY BAND

# → WiMOD - iM820A



radio module iM820A

### OVERVIEW

The iM820A – member of the WiMOD family – is a compact, low power, and long range radio module for the 868 MHz frequency band. It is specially designed for low power driven applications. The module includes a transceiver, a micro-controller with AES coprocessor and a PCB antenna. It is solderable like a SMD component and minimizes the need for an expensive and time-consuming RF development. To find out it's capabilities a demo board and sample applications are available. For a firmware update a bootloading functionality exists. With the iM221A we provide a pin-compatible module for 2.4 GHz.

### FEATURES

- Compact radio module for 868 MHz
- Low power consumption, wake on radio (WOR) functionality
- 128-bit AES security coprocessor
- RF data rate from 1.2 kbps to 250 kbps
- Digital RSSI<sup>1</sup> to evaluate the radio link quality
- UART and SPI interface
- Sample applications available
- Bootloading functionality for firmware update
- Software and pin-compatible to the iM221A
- Small footprint, solderable like a SMD component
- Integrated antenna or 50 Ohm pad

### APPLICATIONS:

- Security & access systems (wireless locking system)
- Battery driven wireless sensor and actor systems
- Remote control
- Home-, Building-, Industrial Automation
- Metering systems (data logging)
- ...

The wide range of capabilities and functionalities provided by the iM820A can be tested by using our demo board.

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## → Technical Data

### General

Operating voltage:	2 V to 3.6 V, typ. 3.0 V
Supply current:	typ. 23 mA (receive) typ. 30 mA (transmit @ 6 dBm) typ. 5 mA ( $\mu$ C active, transceiver off) typ. 1 $\mu$ A (power down)
Dimension (LxWxH):	approx. 20x25x5 mm
Operating temperature:	-10°C to +60°C

### Radio

Frequency range:	863 MHz to 868.6 MHz (902 MHz to 928 MHz) (433 MHz)
Channel spacing:	min. 25 kHz
Data rate:	1.2 kbps to 250 kbps
Modulation:	GFSK, 2-FSK
Output power:	typ. +6 dBm (50 $\Omega$ pad)
Receiver sensitivity:	typ. -108 dBm @ 1 % PER <sup>1</sup> & 1.2 kbps typ. -92 dBm @ 1 % PER & 250 kbps
Antenna:	integrated PCB antenna or optional 50 $\Omega$ pad
Range (line of sight):	up to 1100 m

### Interface

IO Ports:	8 general purpose IO (analog/digital) 9 digital IO 1 analog reference
UART:	up to 230.4 kBaud
SPI:	

### Certifications

Pre-qualified to ETSI EN 300 220  
Lead-free and RoHS compliant

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<sup>1</sup> PER = Packet error rate, 20 bytes packet length