

- Suitable for metering, building automation and industrial applications
- No external components except antenna required
- Ultra low current consumption with power save modes
- Small footprint

#### Embedded Wireless M-Bus Module

# MBear

The MBear Wireless M-Bus Module is a compact high performance industrial-grade QFN module with embedded Wireless M-Bus protocol.

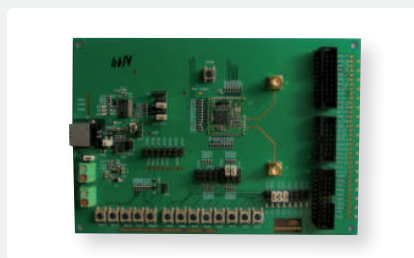
The MBear Module is targeted for integration into different products of OEM partners enabling them to communicate over long distances. The module has a UART interface for serial communication and configuration and a one-pin antenna connection.

## Key Features

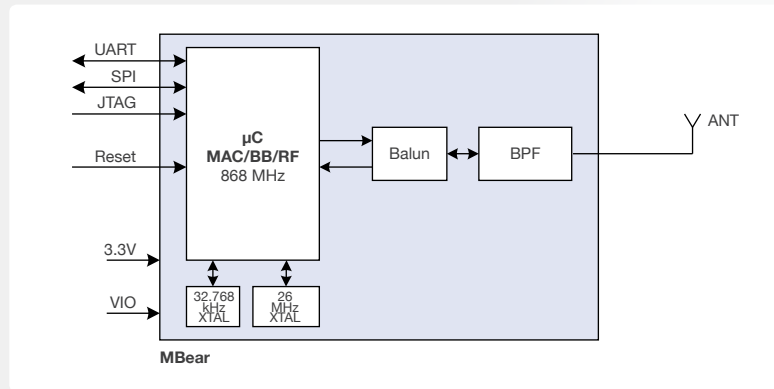
- Compliant to Wireless M-Bus Standard EN 13757-4:2005 (Modes: S, T) and to prEN 13757-4:2011 (Mode: C)
- Suitable for the development of KNX-RF products
- Easy to use UART host interface
- Wide supply voltage range: 2.0 to 3.6 V
- Compact footprint, surface mount (SMD) type
- Wide temperature range from -40 °C to +85 °C
- Configurable Manufacturer ID and serial number
- Conforms with EU R&TTE directive (EN 300 220, EN 301 489, EN 60950)

## Evaluation Board

The MBear Evaluation Board is also a ready-made reference design. The board provides an external antenna connector, UART and a UART to USB converter for host communication, JTAG for programming and all GPIOs.



## Application Diagram



## Technical Specification

Communication Standards	Wireless M-Bus EN13757-4:2005, prEN13757-4:2011, Modes: S1, S1m, S2, T1, T2, C1, C2
Data Transfer Rate	S-Mode: 32.768 kbps; T and C-Mode: 100 kbps
Frequency Range	868.03 - 868.95 MHz (ISM Band) 2 channels (868.3, 868.95 MHz) in mode S and T 10 channels in mode R2 (868.03 + n x 0.06 MHz)
RF Output Power	Max. 11 dBm
RF Sensitivity	Max. - 109 dBm at BER <1%
Modulation	2-FSK, 2-GFSK, MSK, ASK, OOK
Security Encryption	AES 128-bit
Host Interface	UART
Antenna	QFN antenna pad
Power Supply	2.0 to 3.6 V (3.3 V typ.)
Current Consumption	Rx: 25 mA typ.; Tx: 40 mA typ @ 3.3V
Operating Temperature	-40 °C to +85 °C
Firmware Update	Over JTAG or UART
Certifications	EN 300220, EN 301489, EN 60950, EN 50371
Dimensions (L x W x H)	20 mm x 20 mm x 2.9 mm
Delivery	Tape & reel



## Ordering Information

MBear Module	AN00J97258
Evaluation Board with MBear Module	AN00969868

