

WIRELESS M-BUS RANGE EXTENDER

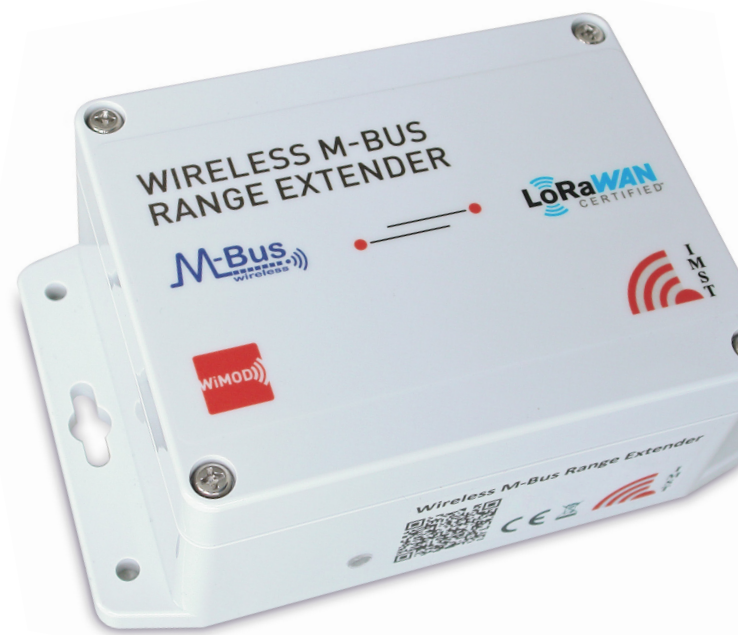
OVERVIEW

The Wireless M-Bus Range Extender is a compact and cost-effective device that collects wireless M-Bus messages from utility meters and forwards them to a LoRaWAN® network.

Due to its leading RF performance it significantly extends the range of wireless M-Bus meters and allows filtering those messages by Manufacturer ID (M-field) and Sender Address (A-field) to select specific groups of measuring instruments.

This device acts as a bridge between WM-Bus and LoRa® and allows a flexible configuration of calendar events for WM-Bus reception intervals and status messages as well as device filtering by Manufacturer ID and Device ID (whitelist). The configuration can be managed Over-The-Air via LoRa® messages¹ or via wired serial interface.

Beside the Wireless M-Bus functionality the firmware supports a LoRaWAN® compliant protocol stack as well as a proprietary LoRa® stack for wireless Point-to-Point and Point-to-Multipoint communication².



FEATURES:

- WM-Bus S and combined C/T Mode supported
- WM-Bus telegram format: A and B
- LoRaWAN® Activation: ABP and OTAA
- EU868 LoRaWAN® compliant
- Flexible configuration of calendar events and WM-Bus device filtering
- Confirmed upload of WM-Bus messages
- Ultra low power for long battery life

APPLICATIONS:

- Automated Meter Reading
- Home and Building Automation
- Industrial Monitoring and Control
- IoT (Internet of Things)
- Smart Cities

GENERAL TECHNICAL DATA:

Automatic power saver: $I \leq 3\mu\text{A}$ (idle)
 Frequency range: 863 MHz to 870 MHz
 Modulation: LoRa® / FSK
 Data memory: 8 MBit Flash

Current consumption: $\leq 35\text{mA}$ (@ max. output power)
 Dimensions: 145 x 92 x 55 mm
 Operating temperature: -10 °C to +55 °C
 Integrated antenna or external antenna (on request)

¹ coming soon

² on request

FUNCTIONAL DESCRIPTION:

The Wireless M-Bus standard (EN 13757-4) is used in many wireless sensor and smart meter applications. These meters and sensors are communicating according to defined radio operation modes based on a standard FSK modulation with more or less range to the corresponding receiving unit.

The LoRa® modulation is a perfect mean to increase the range of wireless communication systems. The new WM-Bus Range Extender combines the two existing modulation technics and required communication protocol stacks in one single device.

A typical usecase for this device is the forwarding of Wireless M-Bus messages of a configurable group of

sensor / meter devices. Range Extender offers a flexible and easy way to define hourly, daily, weekly or monthly reception windows for samling of WM-Bus messages and a large data memory for temporary buffering. Even large WM-Bus messages with maximum payload size can be forwarded with LoRaWAN® radio packets by means of an integrated segmentation and reassembly protocol.

Besides LoRaWAN® a proprietary Point-to-Point and Point-to-Multipoint protocol (LR Base) can be selected for local configuration and message forwarding¹.



Energy meter



Gas meter



Water meter



¹ on request

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