

Description

TSherpa is a **family of IoT** devices designed to enable remote reading of consumption data from water, energy, or other utility meters, using standard technologies such as UNE82326, Wireless M-Bus (868MHz and 169MHz), and RS-485 Modbus. These devices act as **smart gateways**, capturing data from meters and securely transmitting it to management platforms via NB-IoT, thereby optimizing consumption monitoring and analysis. Its architecture allows the management of hundreds of meters using fewer SIM cards and reducing maintenance, which maximizes operational efficiency. Thanks to **Bluetooth v5.3** connectivity, configuration and commissioning are fast and secure, even in the field. With over 12 years of autonomy, IP67 protection, and compatibility with multiple protocols, TSherpa offers a robust, efficient, and adaptable solution for all types of remote reading projects.

Model Identification

Commercial name	Model	Compatibility
TSherpa UNE	TSUNENB02	Bus UNE 82326
TSherpa Wireless M-BUS	TSWMBNB02	Wireless M-Bus 868MHz Wireless M-Bus 169MHz
TSherpa 485	TS485NB02	RS-485 Modbus

Mechanical Specifications

- **Dimensions:** 87 x 150 x 65 mm
- **Weight:** <500 gr
- **IP protection:** IP67 according to ANSI-IEC 60529/UNE20324
- **Physical security:** 2 x 15 TORX vandal-proof screws + adhesive seal (optional)
- **Mounting:** 3 wall attachment points

Power supply

- **Replaceable internal battery:** 2 x 3.6V @ 28,000 mAh type Li-SOCl₂
- **Optional external power input on Wireless M-BUS and RS485 models :** 12V DC @ 1A
- **Regulatory Compliance:** IEC EN 60086-4
- **Estimated battery life:** >12 years (*)

UNE82326, Wireless M-BUS or RS485 to NB-IoT bridge



Characteristics

- **Compatibility:** UNE 82326, Wireless M-Bus and RS-485 Modbus
- **NB-IoT LTE R14** (B8, B20 and B28 bands)
- **Capacity:** up to 200 Wireless M-Bus meters and 50 UNE 82326
- **Estimated battery life** >12 years (*)
- **IP67 protection**
- **28,000 frames internal memory**
- **Configuration** via Bluetooth v5.3 and Android App
- **Security:** UDP-DTLS or LwM2M
- **Remote firmware update** (OTA)
- **Configurable reading and transmission windows** (up to 8 per day of each type)
- **On-demand reading** via magnet
- **Compatible** with nanoSIM and eSIM
- **CE and RoHS marking**

(*) Battery life highly dependent on device configuration, coverage level and environmental conditions

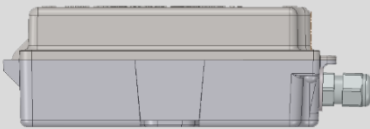
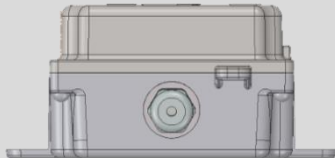
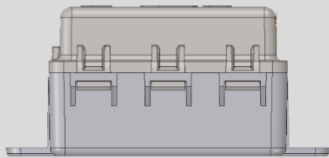
TSherpa-NB 02

UNE82326

Wireless M-BUS

RS485 Modbus

NB-IoT bridge



Communications

- **NB-IoT LTE 3GPP NB2 Release 14**
 - Operating bands: B8, B20 and B28
 - Maximum Speed: 60Kbps (download) / 30Kbps (upload)
 - Early Release Capability
 - Network Metrics Capture: RSRP, RSRQ, SNR, ECL, Cell ID
 - Maximum Coupling Loss (MCL): 164dB
 - Fine-tuning PSM and eDRX functionalities
 - NanoSIM (4FF) and eSIM (GSMA SGP.02) compatible
- **Supported Protocols:** UDP, UDP-DTLS, LwM2M
- **Bluetooth v5.3** for setup and commissioning

Operational Features

- **Reading Protocol Support:**
 - UNE 82326
 - Wireless M-Bus 868MHz and 169MHz
 - RS-485 Modbus
- **Reading capacity:**
 - Up to 200 Wireless M-Bus meters
 - Up to 50 UNE 82326 meters
- **Non-volatile internal memory:** up to 28,000 frames
- **Setup and commissioning:**
 - Via Bluetooth v5.3
 - Android app available
- **Reading and transmission windows:**
 - Up to 8 reading windows and 8 transmission windows per day, fully configurable
 - Intervals from 10 minutes to 24 hours
- **On-demand reading:**
 - Without opening the device, via reed sensor
 - Maximum number of cycles configurable
- **Remote firmware update:**
 - Both application and communications module
- **Internal Clock (RTC):**
 - Daily synchronization
 - Maximum drift: 15 seconds
- **Identification and filtering:**
 - Own credentials (ID, username, password)
 - NFC tag for device and manufacturer identification
 - Whitelist/blacklist filters on Wireless M-Bus model
 - Filters by identifier, manufacturer, or device type

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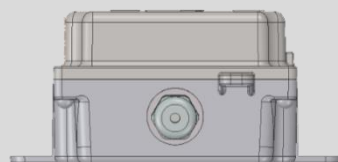
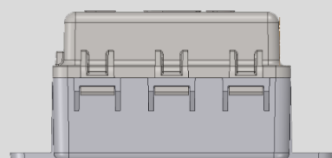
TSherpa-NB 02

UNE82326

Wireless M-BUS

RS485 Modbus

NB-IoT bridge



Regulations and Certifications

- CE and RoHS marking
- European Directives:
 - 2014/53/EU – Radio equipment
 - 2011/65/EU – RoHS 2

Integration Scheme

1 TSherpa collects readings from water meters

2 These measurements are stored for later transmission using NB-IoT

3 The platform facilitates billing, provides metrics for devices and meters, and triggers consumption alarms



(*) TSherpa does not decrypt meter frames; it stores them in raw format and forwards them unchanged.

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