

# REMOTE MONITORING OF ENERGY METERS WITH AN IOT GATEWAY

## HIGHLIGHTS

- ✔ Energy meters have become an absolute must for utility companies, enabling them to gather real-time data and achieve peak efficiency. However, this potential cannot be fully realised without a networking device that bridges the control centre with endpoints and delivers all the essential features.
- ✔ The Teltonika Networks TRB246 is perfect for the utilities sector. This cellular gateway has many interfaces, including I/Os, RS232, RS485, and Ethernet. It also supports a wide range of protocols essential for M2M communication and provides a comprehensive wireless network solution.
- ✔ Yet, the key to this scenario is the ability to access all necessary data remotely – a piece of cake for the TRB246. Compatible with RMS, the TRB246 ensures smooth data transmission within the energy metering infrastructure, offering easy-to-use and convenient monitoring services available 24/7.

## THE CHALLENGE – FOUR BOXES TO TICK

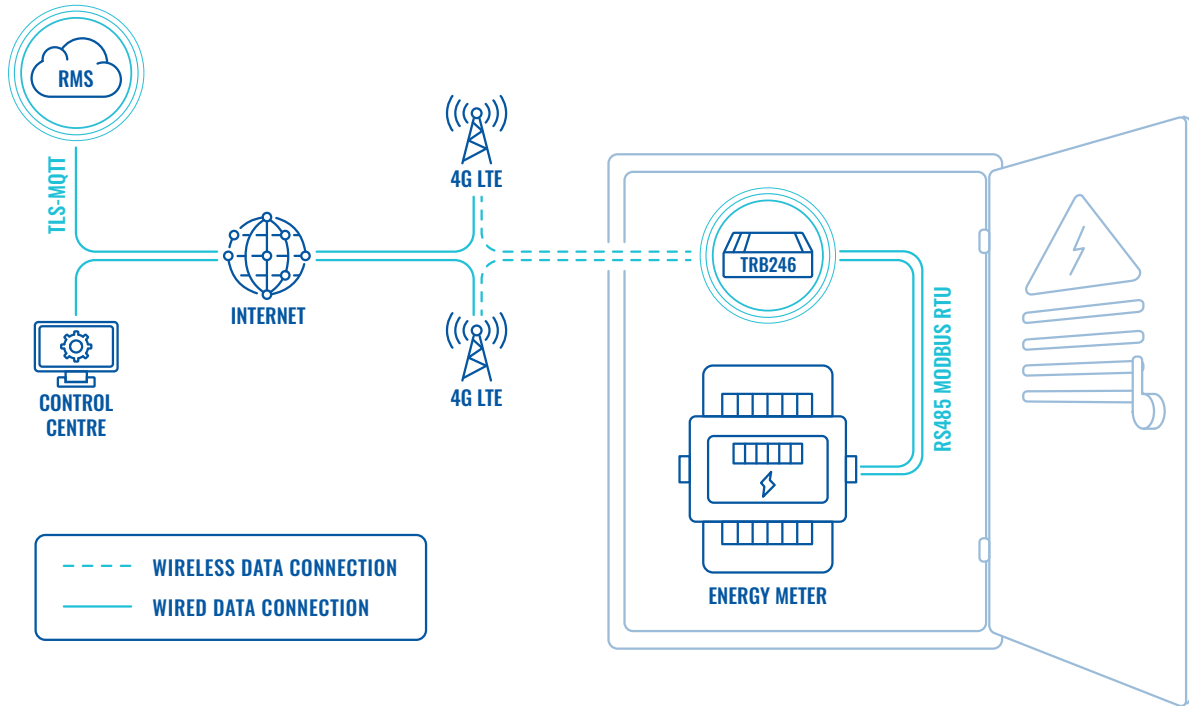
Utilities companies significantly rely on energy meters to reach the top levels of efficiency. Thanks to them, it becomes easy for energy suppliers to extract precise measurements of electricity flow, attain energy management, and take proactive maintenance measures for sustainability and cost-effectiveness. It gets even better when all these things can be achieved remotely.

Yet, despite this theoretical promise, the practical application of energy meters often encounters complexities. The success of utilising these meters for operational efficiency in utilities management hinges on a networking device that must satisfy several key requirements: industrial protocol and interface support, robust connectivity, and enabling remote monitoring.

Suppose we're considering seamless networking device integration into IoT solutions. In that case, the interoperability of M2M communication primarily relies on industrial communication protocols and interfaces supported by the networking device. Such a dependence is influenced by the specific utilities machinery, its metering infrastructure, and even its geographical location, which can sometimes cause certain regulations or restrictions in some cases.

Now, if we were to consider the remote monitoring capabilities of energy meters, a solid and uninterrupted network signal is the blueprint for reliable and redundant connectivity as well as real-time data transmission. However, it must also be taken into account that some meters are located in rural areas, where wired connectivity might be troublesome and costly to attain.

## TOPOLOGY



## THE SOLUTION – THE TRB246 TICKS ALL OF THEM AND MORE

Reliable network connectivity in troublesome locations is best addressed with the Teltonika Networks TRB246 IoT gateway, ensuring IoT solutions run smoothly. This IoT gateway supports appropriate industrial communication protocols, has many interfaces, and provides redundant, stable wireless connectivity for data transmission between the control centre and energy meters.

This IoT gateway's versatility shines with an array of I/Os, RS232, RS485, and Ethernet interfaces. In this case, the gateway connects to energy meters via RS485, supplying the metering infrastructure with robust network connectivity. Moreover, the TRB246 IoT gateway supports multiple industrial protocols, including DNP3, DLMS, and Modbus, facilitating compatibility across different devices and enabling fast, real-time data decryption and exchange. Thanks to these features, this IoT gateway becomes a very flexible networking device with multiple interfaces and protocols ready to serve your needs.

Most importantly, the TRB246 is a cellular gateway featuring dual SIM and 4G LTE capabilities, available worldwide, which makes establishing redundant connectivity more effortless than ever. On a regular basis, this IoT gateway boasts robust mobile connectivity from your assigned mobile SIM card. If connectivity from that source gets disrupted, the TRB246 automatically switches to the second SIM card and thus safeguards robust Internet support.

This is crucial for the remote management and monitoring aspect of the solution. Together with the Teltonika Networks Remote Management System (RMS), the TRB246 facilitates low-cost and rapid deployment of multiple devices simultaneously by simplifying setup processes and reducing operational expenses. Here, RMS is used to continuously monitor both the TRB246 IoT gateway and any end devices that are plugged into it.

Lastly, this IoT gateway can be configured to have predefined alarms. Such alarms can be sent by the device whenever energy flow values deviate from established criteria. This way, energy suppliers can quickly react to any arising anomalies or potential issues.

The industrial-grade TRB246 gateway stands out as a highly reliable networking device, boasting 4G LTE connectivity along with a wide range of industrial protocols and supported interfaces. With such a feature lineup, you can't go wrong choosing this gateway.

