Manuals+ — User Manuals Simplified.

RB IndustrialRT GSMLTE modem solution additional hardware User Manual

Contents

RB IndustrialRT GSMLTE modem solution additional hardware
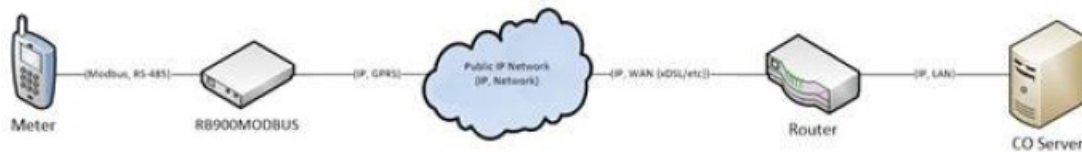

Safety Recommendations

READ CAREFULLY

Be sure the use of this product is allowed in the country and in the environment required. The use of this product may be dangerous and has to be avoided in the following areas:

- where it can interfere with other electronic devices in environments such as hospitals, airports, aircrafts, etc.
- where there is risk of explosion such as gasoline stations, oil refineries, etc. It is responsibility of the user to enforce the country regulation and the specific environment regulation.
- Do not disassemble the product; any mark of tampering will compromise the warranty validity.
- We recommend following the instructions of the hardware user guides for a correct wiring of the product. The product has to be supplied with a stabilized voltage source and the wiring has to be conforming to the security and fire prevention regulations.
- The product has to be handled with care, avoiding any contact with the pins because electrostatic discharges may damage the product itself. The same cautions have to be taken for the SIM, checking carefully the instruction for its use. Do not insert or remove the SIM when the product is in power saving mode.
- The system integrator is responsible of the functioning of the final product; therefore, care has to be taken to the external components of the module, as well as of any project or installation issue, because the risk of disturbing the GSM network or external devices or having impact on the security. Should there be any doubt, please refer to the technical documentation and the regulations in force.
- Every module has to be equipped with a proper antenna with specific characteristics. The antenna has to be installed with care in order to avoid any interference with other electronic devices and has to guarantee a minimum distance from the people (20 cm). In case of this requirement cannot be satisfied, the system integrator has to assess the final product against the SAR regulation.

Overview

RB IndustrialRT is the complete GSM/LTE modem solution with additional hardware functionalities and embedded programmable module. Device has built-in RS485 module (in applications it is possible to use one of the modules – RS232 or RS485). RB IndustrialRT has a built-in application whose main task is reporting values of selected MODBUS registers to the HTTP server, communicating with servers in the cloud and controlling SCADA systems via SMS and TCP/IP connection.

Typical RB IndustrialRT application

Package

- **Box**

  The package contains a sticker corresponding to the sticker on the modem. The serial number uniquely identifies the modem and ensures that it is the original product.
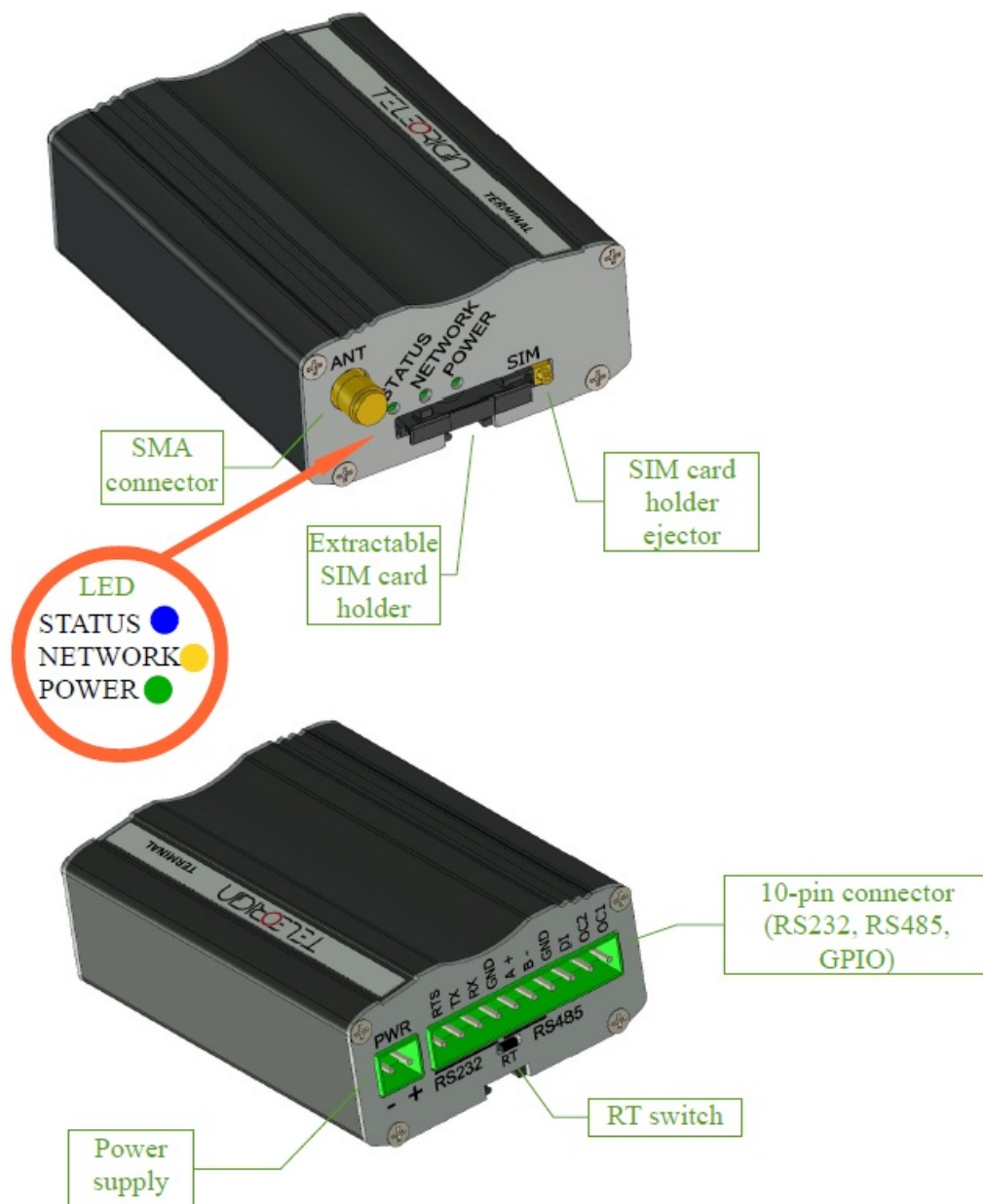
- **Package contents**

  The package contains:

    - RB IndustrialRT modem
    - GSM antenna (SMA connector)
    - Wall handle
    - Power cable

General presentation

- **Product description**

SMA connector

SIM card holder ejector

Extractable SIM card holder

LED
STATUS ●
NETWORK ●
POWER ●

10-pin connector (RS232, RS485, GPIO)

RT switch

Power supply

- **External connections**
  - **Antenna connector**

GSM antenna connector – SMA type, female, 50 Ω. Connector is used to connect external GSM antenna.
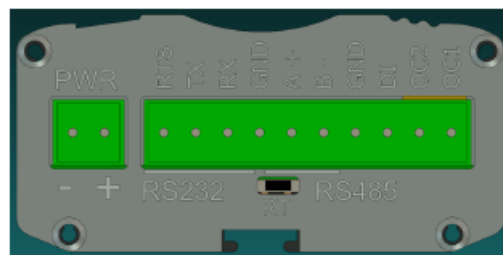
Note: If there is no antenna connected to SMA connector, the connection with GSM network is impossible.

  - **RS232/RS485/GPIO connector**

Modem RB IndustrialRT is equipped with 10-pin connector with RS232/RS485 and GPIO interfaces

Pinout of 10-pin connecor:

Pin number	Name	Direction
1	RTS	OUT
2	TX	OUT
3	RX	IN
4	GND	OUT
5	A+	–
6	B-	–
7	GND	–
8	DI	IN
9	OC2	OUT
10	OC1	OUT

Note: Modem can't be used with RS232/RS485 serial cables longer than 3 m.

- **Power supply connector**

The power supply connector is a 2-pin connector for external DC power supply connection

Pin indication	Description
-	Ground (GND)
+	5 V – 30 V DC

- SIM card holder

SIM card holder is placed in front of RB IndustrialRT terminal (as shown below) and is accessible externally. To insert SIM card into the holder press the yellow button, eject the little drawer, place there the SIM card and insert drawer into the modem (you will hear "click"). To operate the module in a GSM network, it is necessary to insert a SIM card obtained from the network operator.

- **Product sticker**

Product stickers are on the modem and on the box of the product. A production sticker includes the following information:

  - Manufacturer name
  - The model signature
  - Product serial number (IMEI)
  - The CE marking
  - WEEE symbol (waste electrical and electronic equipment)

Supported connections

The RB Industrial supports general interrogation commands for binary and analog objects. When required, group interrogation command can be used. The RB Industrial scan data on Modbus registers but it sends them to the monitor station only after the interrogation command. Cyclic Data Transmission can be enabled when required. When enabled An interrogation command interrupts cyclic transmission in progress, which is automatically

restarted after the interrogation command has been responded. The RB Industrial provides configurable setpoints for reporting events when a measured value exceeds a predefined threshold or changes by a certain percentage, or a binary point status changes. The scan period for events depends on Modbus register counts and number of controlled stations connected to the modem. Events can only be reported for mapped static object points. RB Industrial RT also implements DNP3 in accordance with Level 2 as specified in the "DNP3 Subset Definitions V2.00". Level 2 was chosen to match MultiTrode's Outpost SCADA system. It is also the most popular level and will thus maximize compatibility with other Masters. The RB Industrial supports general interrogation commands for binary and analog objects. When required, Read command for Object 60 VAR 1 will be used. The RB Industrial scan data on Modbus registers but it send them to the monitor station only after the interrogation command. Cyclic Data Transmission can be enabled when required. When enabled An interrogation command interrupts cyclic transmission in progress, which is automatically restarted after the interrogation command has been responded. The RB Industrial RT provides configurable setpoints for reporting events when a measured value exceeds a predefined threshold or changes by a certain percentage, or a binary point status changes. The scan period for events depends on Modbus register counts and the number of controlled stations connected to the modem. Events can only be reported for mapped static object points.

Basic features and services

Basic features and available services for RB IndustrialRT are contained in a table below:

Feature/service	Description
Supported bands:	Cat M1/Cat NB1: LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28 LTE TDD: B39 (For Cat M 1 Only) EGPRS: 850/900/1800/1900MHz
Interfaces	Connectors – SMA antenna SIM card – 3.0V / 1.8V – STK 3.1 Connectivity – USB 2.0 HS – UART: BR from 300 bps to 115.2 Kbps – Auto BR
SMS	MO/MT Text and PDU mode
GSM supplementary services	TCP/IP. UDP/IP, SMTP, FTP protocol
Power supply	5V – 30V DC
Dimension	72 x 53.5 x 26 mm (without connectors) 83 x 53.5 x 26 mm (with connectors)
Temperature range	Min. -20°C, Max. 60°C
Humidity	Min. 5%, Max. 85%

Online support

Elma provides a range of online support which includes:

- The latest version of this document
- Technical support

This information can be found on our website: **www.teleorigin.com**
For further information you can contact us at:
email: **info@teleorigin.com** tel.: +48 (22) 751 76 80

Documents / Resources

RB IndustrialRT GSMLTE modem solution additional hardware [pdf] User Manual
GSMLTE modem solution additional hardware, modem solution additional hardware, additional hardware, hardware

References

- **TELEORIGIN : Innovative Telemetry Systems**
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