

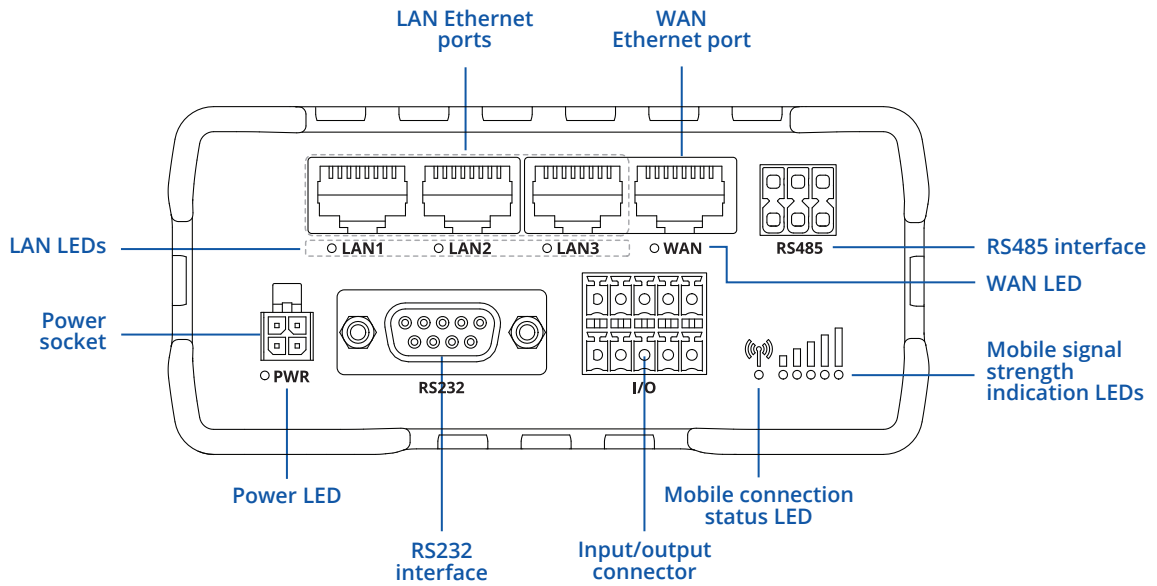
 **TELTONIKA** | Networks

# RUT906

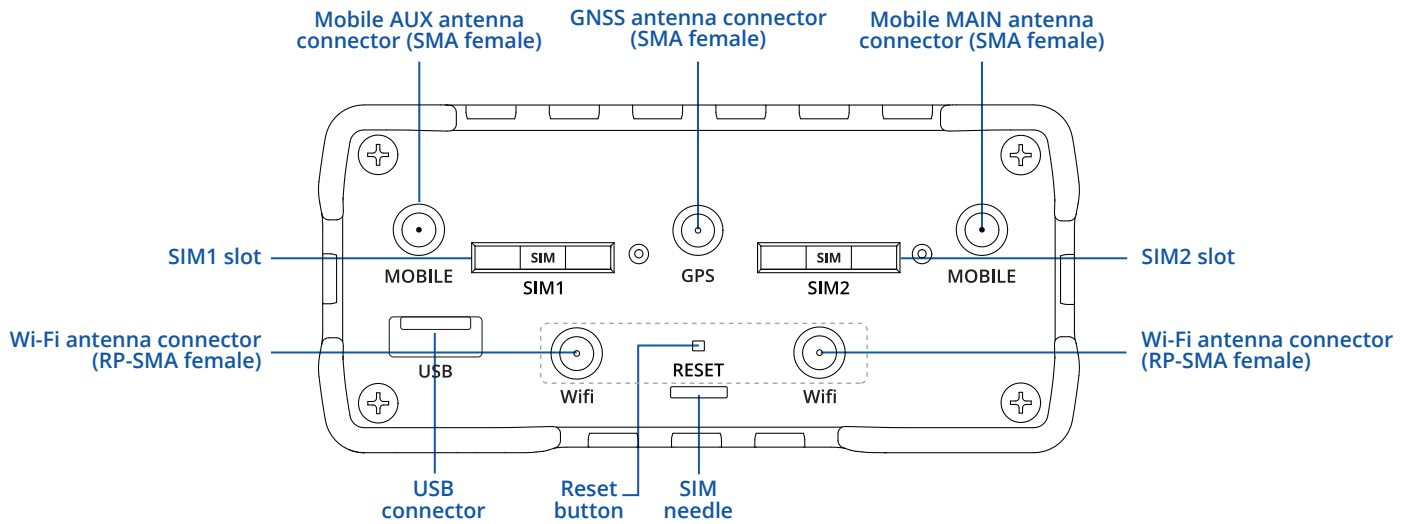


# HARDWARE

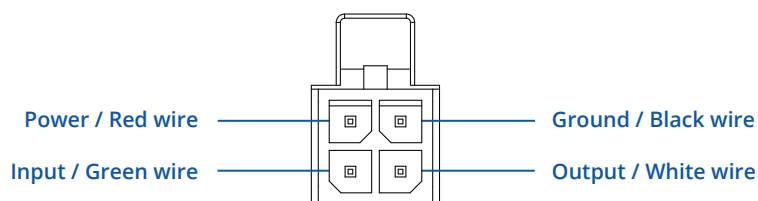
## FRONT VIEW



## BACK VIEW



## POWER SOCKET PINOUT



## FEATURES

### MOBILE

|                  |   |
|------------------|---|
| Mobile module    | 4G (LTE) – Cat 4 up to 150 Mbps, 3G – Up to 42 Mbps, 2G – Up to 236.8 kbps  |
| 3GPP Release     | Release 10/11 depending on the hardware version   |
| SIM switch       | 2 SIM cards, auto-switch cases: weak signal, data limit, SMS limit, roaming, no network, network denied, data connection fail, SIM idle protection      |
| Status           | Signal strength (RSSI), SINR, RSRP, RSRQ, EC/IO, RSCP, Bytes sent/received, connected band, IMSI, ICCID   |
| SMS              | SMS status, SMS configuration, send/read SMS via HTTP POST/GET, EMAIL to SMS, SMS to EMAIL, SMS to HTTP, SMS to SMS, scheduled SMS, SMS autoreply, SMPP |
| USSD             | Supports sending and reading Unstructured Supplementary Service Data messages   |
| Black/White list | Operator black/white list   |
| Band management  | Band lock, Used band status display   |
| APN              | Auto APN  |
| Bridge           | Direct connection (bridge) between mobile ISP and device on LAN   |
| Passthrough      | Router assigns its mobile WAN IP address to another device on LAN   |

### WIRELESS

|                                |  |
|--------------------------------|--|
| Wireless mode                  | IEEE 802.11b/g/n, Access Point (AP), Station (STA)   |
| Wi-Fi security                 | WPA3-EAP, WPA3-SAE, WPA2-Enterprise-PEAP, WPA2-PSK, WEP; AES-CCMP, TKIP, Auto Cipher modes, client separation  |
| SSID/ESSID                     | ESSID stealth mode   |
| Wi-Fi users                    | Up to 100 simultaneous connections   |
| Wireless Hotspot               | Captive portal (Hotspot), internal/external Radius server, SMS authorization, internal/external landing page, walled garden, user scripts, URL parameters, user groups, individual user or group limitations, user management, 9 default customizable themes |
| Wireless Connectivity Features | Fast roaming (802.11r), Relayd   |
| Wireless MAC filter            | Whitelist, blacklist   |

### ETHERNET

|     |  |
|-----|--|
| WAN | 1 x WAN port 10/100 Mbps, compliance IEEE 802.3, IEEE 802.3u standards, supports auto MDI/MDIX   |
| LAN | 3 x LAN ports, 10/100 Mbps, compliance IEEE 802.3, IEEE 802.3u standards, supports auto MDI/MDIX |

### NETWORK

|                                    |  |
|------------------------------------|--|
| Routing                            | Static routing, Dynamic routing (BGP, OSPF v2, RIP v1/v2, EIGRP, NHRP), Policy based routing   |
| Network protocols                  | TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, HTTPS, SFTP, FTP, SMTP, SSL/TLS, ARP, VRRP, PPP, PPPoE, UPNP, SSH, DHCP, Telnet, SMPP, SMNP, MQTT, Wake On Lan (WOL) |
| VoIP passthrough support           | H.323 and SIP-alg protocol NAT helpers, allowing proper routing of VoIP packets  |
| Connection monitoring              | Ping Reboot, Wget Reboot, Periodic Reboot, LCP and ICMP for link inspection  |
| Firewall                           | Port forward, traffic rules, custom rules  |
| DHCP                               | Static and dynamic IP allocation, DHCP Relay   |
| QoS / Smart Queue Management (SQM) | Traffic priority queuing by source/destination, service, protocol or port, WMM, 802.11e  |
| DDNS                               | Supported >25 service providers, others can be configured manually   |
| Network backup                     | Wi-Fi WAN, Mobile, VRRP, Wired options, each of which can be used as an automatic Failover   |
| Load balancing                     | Balance Internet traffic over multiple WAN connections   |
| SSHFS                              | Possibility to mount remote file system via SSH protocol   |

### SECURITY

|                      |   |
|----------------------|---|
| Authentication       | Pre-shared key, digital certificates, X.509 certificates, TACACS+, Radius, IP & Login attempts block  |
| Firewall             | Pre-configured firewall rules can be enabled via WebUI, unlimited firewall configuration via CLI; DMZ; NAT; NAT-T   |
| Attack prevention    | DDOS prevention (SYN flood protection, SSH attack prevention, HTTP/HTTPS attack prevention), port scan prevention (SYN-FIN, SYN-RST, X-mas, NULL flags, FIN scan attacks) |
| VLAN                 | Port and tag-based VLAN separation  |
| Mobile quota control | Mobile data limit, customizable period, start time, warning limit, phone number   |
| WEB filter           | Blacklist for blocking out unwanted websites, Whitelist for specifying allowed sites only   |
| Access control       | Flexible access control of TCP, UDP, ICMP packets, MAC address filter   |

## VPN

|                    |   |
|--------------------|---|
| OpenVPN            | Multiple clients and a server can run simultaneously, 27 encryption methods   |
| OpenVPN Encryption | DES-CBC 64, RC2-CBC 128, DES-EDE-CBC 128, DES-EDE3-CBC 192, DESX-CBC 192, BF-CBC 128, RC2-40-CBC 40, CAST5-CBC 128, RC2-64-CBC 64, AES-128-CBC 128, AES-128-CFB 128, AES-128-CFB1 128, AES-128-CFB8 128, AES-128-OFB 128, AES-128-GCM 128, AES-192-CFB 192, AES-192-CFB1 192, AES-192-CFB8 192, AES-192-OFB 192, AES-192-CBC 192, AES-192-GCM 192, AES-256-GCM 256, AES-256-CFB 256, AES-256-CFB1 256, AES-256-CFB8 256, AES-256-OFB 256, AES-256-CBC 256 |
| IPsec              | IKEv1, IKEv2, with 14 encryption methods for IPsec (3DES, DES, AES128, AES192, AES256, AES128GCM8, AES192GCM8, AES256GCM8, AES128GCM12, AES192GCM12, AES256GCM12, AES128GCM16, AES192GCM16, AES256GCM16)  |
| GRE                | GRE tunnel, GRE tunnel over IPsec support   |
| PPTP, L2TP         | Client/Server instances can run simultaneously, L2TPv3, L2TP over IPsec support   |
| Stunnel            | Proxy designed to add TLS encryption functionality to existing clients and servers without any changes in the program's code  |
| DMVPN              | Method of building scalable IPsec VPNs  |
| SSTP               | SSTP client instance support  |
| ZeroTier           | ZeroTier VPN client support   |
| WireGuard          | WireGuard VPN client and server support   |
| Tinc               | Tinc offers encryption, authentication and compression in it's tunnels. Client and server support   |

## BACNET

|                            |            |
|----------------------------|------------|
| Supported connection types | RS485, TCP |
| Supported modes            | Router     |

## OPC UA

|                            |                          |
|----------------------------|--------------------------|
| Supported modes            | Client, Server (planned) |
| Supported connection types | TCP                      |

## DNP3

|                            |                         |
|----------------------------|-------------------------|
| Supported modes            | TCP Station, Outstation |
| Supported connection types | RS232, RS485, TCP, USB  |

## MODBUS

|                            |  |
|----------------------------|--|
| Supported modes            | Server, Client   |
| Supported connection types | RS232, RS485, TCP, USB   |
| Custom registers           | MODBUS TCP custom register block requests, which read/write to a file inside the router, and can be used to extend MODBUS TCP Slave functionality  |
| Supported data formats     | 8-bit: INT, UINT; 16-bit: INT, UINT (MSB or LSB first); 32-bit: float, INT, UINT (ABCD (big-endian), DCBA (little-endian), CDAB, BADC), HEX, ASCII |

## DATA TO SERVER

|          |                                    |
|----------|------------------------------------|
| Protocol | HTTP(S), MQTT, Azure MQTT, Kinesis |
|----------|------------------------------------|

## MODBUS MQTT GATEWAY

|                     |   |
|---------------------|---|
| Modbus MQTT Gateway | Allows sending commands and receiving data from MODBUS Master through MQTT broker |
|---------------------|---|

## MONITORING & MANAGEMENT

|          |  |
|----------|--|
| WEB UI   | HTTP/HTTPS, status, configuration, FW update, CLI, troubleshoot, event log, system log, kernel log |
| FOTA     | Firmware update from server, automatic notification  |
| SSH      | SSH (v1, v2)   |
| SMS      | SMS status, SMS configuration, send/read SMS via HTTP POST/GET                                     |
| Call     | Reboot, Status, Mobile data on/off, Output on/off, answer/hang-up with a timer, Wi-Fi on/off       |
| TR-069   | OpenACS, EasyCwmp, ACSLite, tGem, LibreACS, GenieACS, FreeACS, LibCWMP, Friendly tech, AVSystem    |
| MQTT     | MQTT Broker, MQTT publisher  |
| SNMP     | SNMP (v1, v2, v3), SNMP Trap   |
| JSON-RPC | Management API over HTTP/HTTPS   |
| MODBUS   | MODBUS TCP status/control  |
| RMS      | Teltonika Remote Management System (RMS)   |

## IoT PLATFORMS

|                  |  |
|------------------|--|
| Clouds of things | Allows monitoring of: Device data, Mobile data, Network info, Availability   |
| ThingWorx        | Allows monitoring of: WAN Type, WAN IP, Mobile Operator Name, Mobile Signal Strength, Mobile Network Type  |
| Cumulocity       | Allows monitoring of: Device Model, Revision and Serial Number, WAN Type and IP, Mobile Cell ID, ICCID, IMEI, Connection Type, Operator, Signal Strength   |
| Azure IoT Hub    | Can send device IP, Number of bytes send/received, Temperature, PIN count to Azure IoT Hub server, Mobile connection state, Network link state, IMEI, ICCID, Model, Manufacturer, Serial, Revision, IMSI, SIM State, PIN state, GSM signal, WCDMA RSCP, WCDMA EC/IO, LTE RSRP, LTE SINR, LTE RSRQ, CELL ID, Operator, Operator number, Connection type |

## SYSTEM CHARACTERISTICS

|               |                               |
|---------------|-------------------------------|
| CPU           | Mediatek, 580 MHz, MIPS 24KEc |
| RAM           | 128 MB, DDR2                  |
| FLASH storage | 16 MB, SPI Flash              |

## FIRMWARE / CONFIGURATION

|               |   |
|---------------|---|
| WEB UI        | Update FW from file, check FW on server, configuration profiles, configuration backup |
| FOTA          | Update FW   |
| RMS           | Update FW/configuration for multiple devices at once                                  |
| Keep settings | Update FW without losing current configuration  |

## FIRMWARE CUSTOMIZATION

|                     |   |
|---------------------|---|
| Operating system    | RutOS (OpenWrt based Linux OS)                                  |
| Supported languages | Busybox shell, Lua, C, C++, and Python, Java in Package manager |
| Development tools   | SDK package with build environment provided                     |

## LOCATION TRACKING

|                 |  |
|-----------------|--|
| GNSS            | GPS, GLONASS, BeiDou, Galileo and QZSS                             |
| Coordinates     | GNSS coordinates via WebUI, SMS, TAVL, RMS                         |
| NMEA            | NMEA 0183  |
| NTRIP           | NTRIP protocol (Networked Transport of RTCM via Internet Protocol) |
| Server software | Supported server software TAVL, RMS                                |
| Geofencing      | Configurable multiple geofence zones                               |

## SERIAL

|                  |   |
|------------------|---|
| RS232            | DB9 connector, RS232 (with RTS, CTS flow control), 300 to 115200 baud rate  |
| RS485            | RS485 Full Duplex (4 wires) and Half-Duplex (2 wires), 300-230400 baud rate |
| Serial functions | Console, Serial over IP, Modem  |

## USB

|                  |   |
|------------------|---|
| Data rate        | USB 2.0   |
| Applications     | Samba share, USB-to-serial  |
| External devices | Possibility to connect external HDD, flash drive, additional modem, printer, USB-serial adapter |
| Storage formats  | FAT, FAT32, exFAT, NTFS (read-only), ext2, ext3, ext4   |

## INPUT / OUTPUT

|             |   |
|-------------|---|
| Input       | 1 x digital dry input (0 - 3 V), 1 x digital galvanically isolated input (0 - 30 V), 1 x analog input (0 - 24 V), 1 x Digital non-isolated input (on 4-pin power connector, 0 - 5 V detected as logic low, 8 - 30 V detected as logic high) |
| Output      | 1 x digital open collector output (30 V, 250 mA), 1 x SPST relay output (40 V, 4 A), 1 x Digital open collector output (30 V, 300 mA, on 4-pin power connector)   |
| Events      | Email, RMS, SMS   |
| I/O juggler | Allows to set certain I/O conditions to initiate event  |

## POWER

|                     |   |
|---------------------|---|
| Connector           | 4-pin industrial DC power socket  |
| Input voltage range | 9 - 30 VDC, reverse polarity protection; surge protection >31 VDC 10us max  |
| PoE (passive)       | Passive PoE over spare pairs. Possibility to power up through LAN1 port, not compatible with IEEE802.3af, 802.3at and 802.3bt standards, Mode B, 9 - 30 VDC |
| Power consumption   | < 2 W idle, < 7 W Max   |

## PHYSICAL INTERFACES

|              |   |
|--------------|---|
| Ethernet     | 4 x RJ45 ports, 10/100 Mbps   |
| I/O's        | 2 x Inputs and 2 x Outputs on 10-pin industrial socket, 1 x Digital input and 1 x Digital output on 4-pin power connector |
| Status LEDs  | 1 x Bi-color connection status, 5 x Mobile connection strength, 4 x ETH status, 1 x Power                                 |
| SIM          | 2 x SIM slots (Mini SIM - 2FF), 1.8 V/3 V, external SIM holders, eSIM (Optional)  |
| Power        | 1 x 4-pin power connector   |
| Input/output | 1 x 10-pin industrial socket for inputs/outputs   |
| Antennas     | 2 x SMA for LTE, 2 x RP-SMA for Wi-Fi, 1 x SMA for GNSS   |
| USB          | 1 x USB A port for external devices   |
| RS232        | 1 x DB9 socket  |
| RS485        | 1 x 6-pin industrial socket   |
| Reset        | Reboot/User default reset/Factory reset button  |

## PHYSICAL SPECIFICATION

|                        |  |
|------------------------|--|
| Casing material        | Aluminium housing, plastic panels                              |
| Dimensions (W x H x D) | 109.5 x 50 x 100 mm  |
| Weight                 | 295 g  |
| Mounting options       | DIN rail (can be mounted on two sides), flat surface placement |

## OPERATING ENVIRONMENT

|                           |                           |
|---------------------------|---------------------------|
| Operating temperature     | -40 °C to 75 °C           |
| Operating humidity        | 10% to 90% non-condensing |
| Ingress Protection Rating | IP30                      |

## REGULATORY & TYPE APPROVALS

|            |                           |
|------------|---------------------------|
| Regulatory | CE, UKCA, RCM, CB, E-mark |
|------------|---------------------------|

## EMC EMISSIONS & IMMUNITY

|   |   |
|---|---|
| Standards                               | EN 55032:2015+A11:2020<br>EN 55035:2017+A11:2020<br>EN 61000-3-3:2013+A1:2019+A2:2021<br>EN IEC 61000-3-2:2019+A1:2021<br>EN 301 489-1 V2.2.3<br>EN 301 489-17 V3.2.4<br>EN 301 489-19 V2.2.0<br>EN 301 489-52 V1.2.1 |
| ESD                                     | EN 61000-4-2:2009   |
| EFT                                     | EN 61000-4-4:2012   |
| Surge Immunity<br>(AC Mains Power Port) | EN 61000-4-5:2014+A1:2017   |
| CS                                      | EN 61000-4-6:2014   |
| DIP                                     | EN IEC 61000-4-11:2020  |
| Radiated Immunity                       | EN IEC 61000-4-3:2020   |
| Standards                               | CE: EN 62311 CB: IEC 62368-1:2018   |

## RF

|           |   |
|-----------|---|
| Standards | EN 301 908-1;<br>EN 301 908-2;<br>EN 301 908-13;<br>EN 300 328; |
|-----------|---|

## WHAT'S IN THE BOX?

### STANDARD PACKAGE\*

- Router RUT906
- 9 W PSU
- 2 x LTE antennas (magnetic mount, SMA male, 3 m cable)
- 2 x Wi-Fi antennas (magnetic mount, RP-SMA male, 1.5 m cable)
- GNSS antenna (adhesive, SMA male, 3 m cable)
- RS485 connector block
- I/O connector block
- Ethernet cable (1.5 m)
- SIM Adapter kit
- QSG (Quick Start Guide)
- Packaging box



ROUTER RUT906



9 W PSU



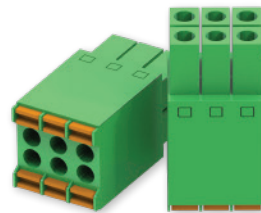
2 X LTE ANTENNAS (MAGNETIC MOUNT, SMA MALE, 3 M CABLE)



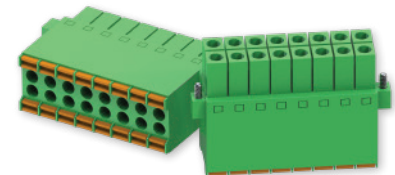
2 X WI-FI ANTENNAS (MAGNETIC MOUNT, RP-SMA MALE, 1.5 M CABLE)



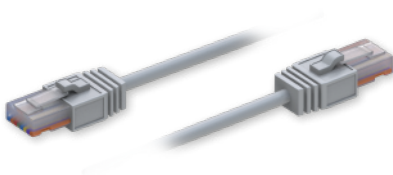
GNSS ANTENNA (ADHESIVE, SMA MALE, 3 M CABLE)



RS485 CONNECTOR BLOCK



I/O CONNECTOR BLOCK



ETHERNET CABLE (1.5 M)



SIM ADAPTER KIT



QSG

\* For all standard order codes standard package contents are the same, except for PSU.

## STANDARD ORDER CODES

| PRODUCT CODE  | HS CODE | HTS CODE   | PACKAGE CONTAINS               |
|---------------|---------|------------|--------------------------------|
| RUT906 000000 | 851762  | 8517.62.00 | Standard package with Euro PSU |

For more information on all available packaging options – please contact us directly.

## AVAILABLE VERSIONS

| PRODUCT CODE  | REGION (OPERATOR)                                       | FREQUENCY   |
|---------------|---|---|
| RUT906 0***** | Europe <sup>1</sup> , the Middle East, Africa, Thailand | <ul style="list-style-type: none"> <li>• 4G (LTE-FDD): B1, B3, B7, B8, B20, B28</li> <li>• 4G (LTE-TDD): B38, B40, B41</li> <li>• 3G: B1, B8</li> <li>• 2G: B2, B8</li> </ul> |

The price and lead-times for region (operator) specific versions may vary. For more information please contact us.  
<sup>1</sup> - Regional availability - excluding Russia & Belarus.



# RUT906 SPATIAL MEASUREMENTS & WEIGHT

## MAIN MEASUREMENTS

W x H x D dimensions for RUT906:

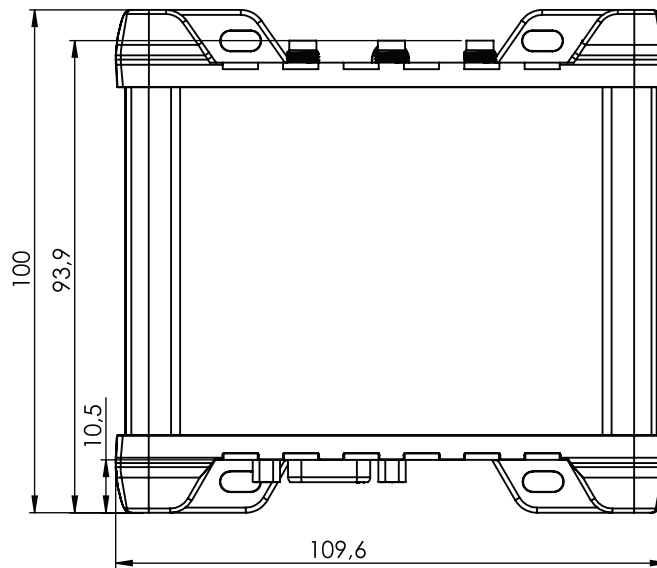
Device housing\*: 109.5 x 50 x 100 mm

Box: 355 x 60 x 175 mm

\*Housing measurements are presented without antenna connectors and screws; for measurements of other device elements look to the sections below.

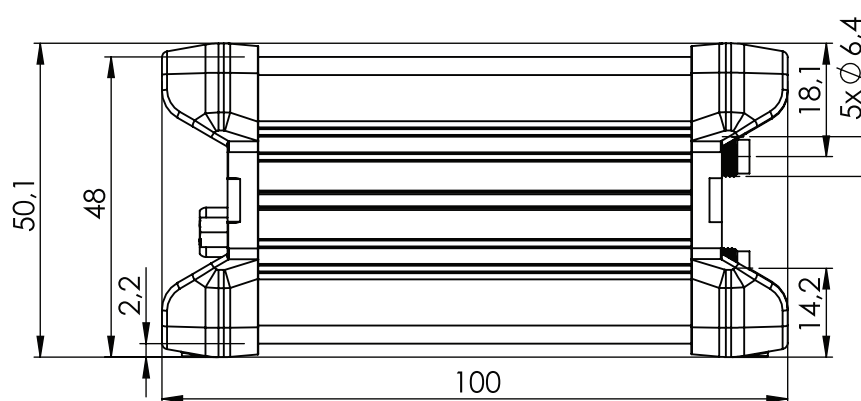
## TOP VIEW

The figure below depicts the measurements of RUT906 and its components as seen from the top:



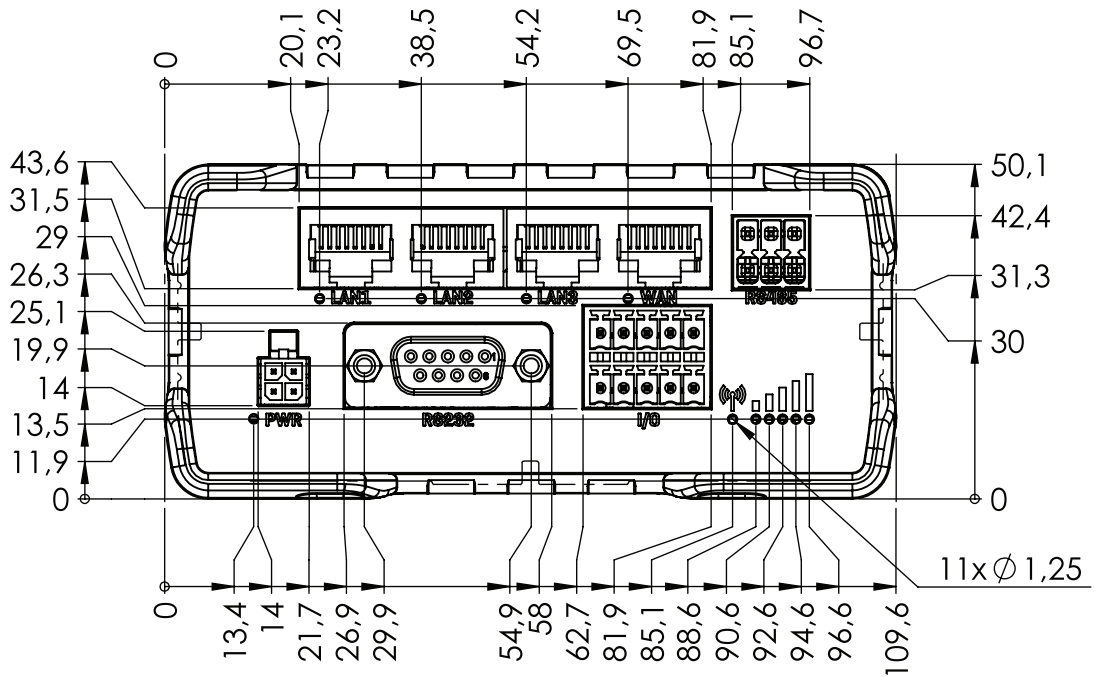
## RIGHT VIEW

The figure below depicts the measurements of RUT906 and its components as seen from the right side:



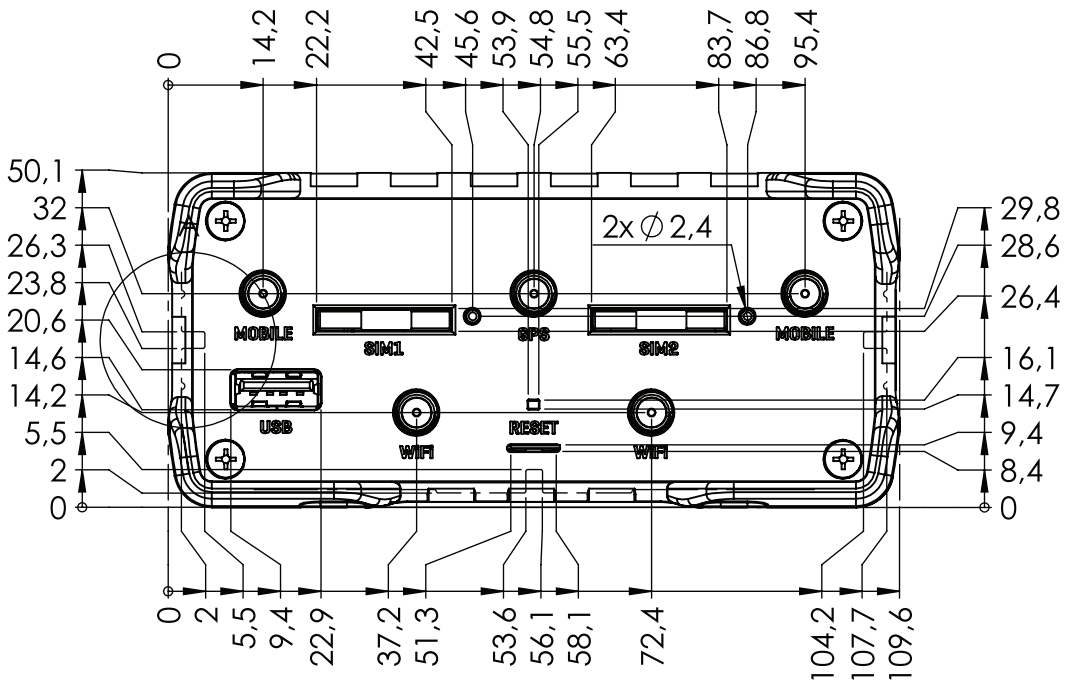
**FRONT VIEW**

The figure below depicts the measurements of RUT906 and its components as seen from the front panel side:



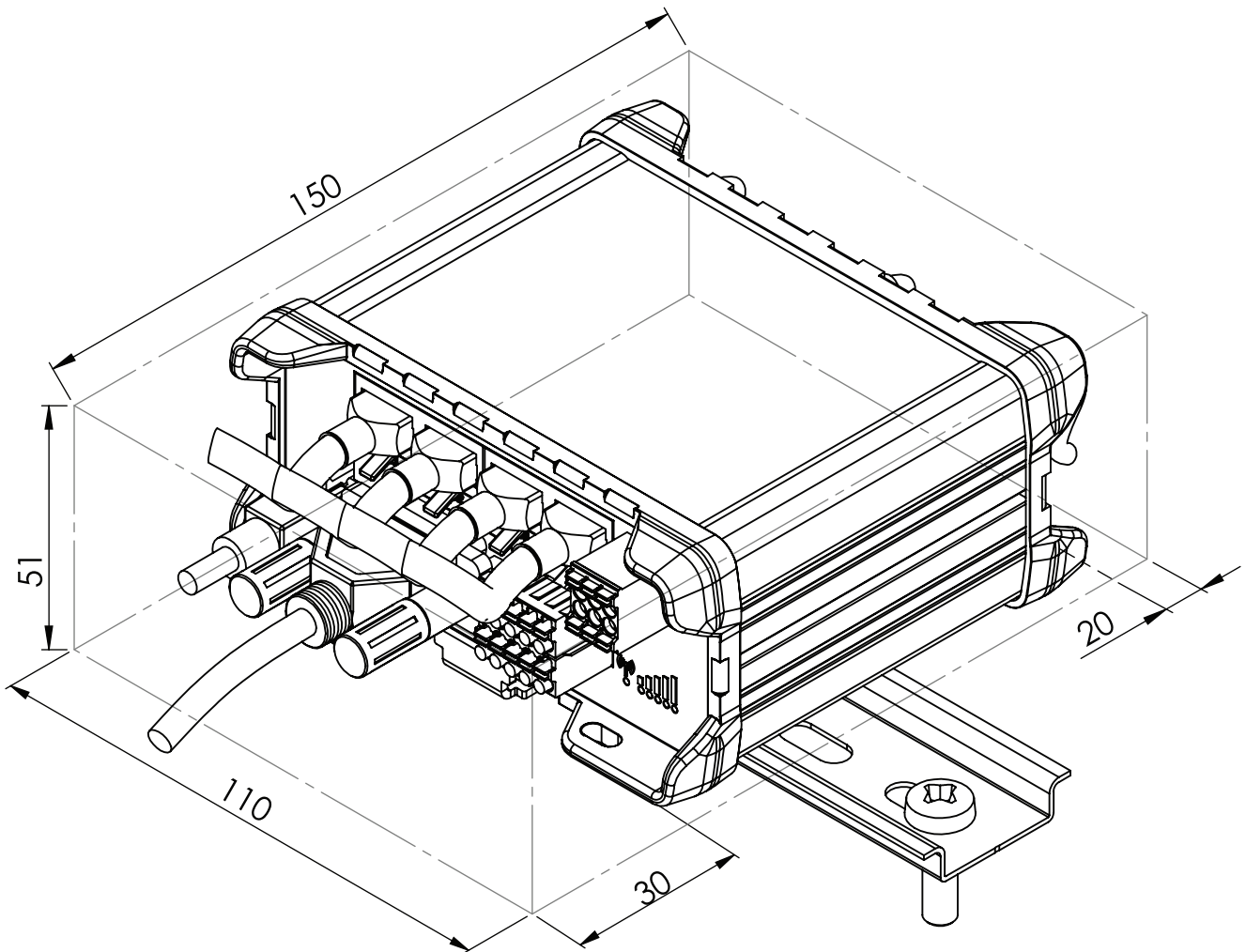
**REAR VIEW**

The figure below depicts the measurements of RUT906 and its components as seen from the back panel side:



### MOUNTING SPACE REQUIREMENTS

The figure below depicts an approximation of the device's dimensions when cables and antennas are attached:



### DIN RAIL

The scheme below depicts protrusion measurements of an attached DIN Rail:

