TELTONIKA | Networks

RUT956

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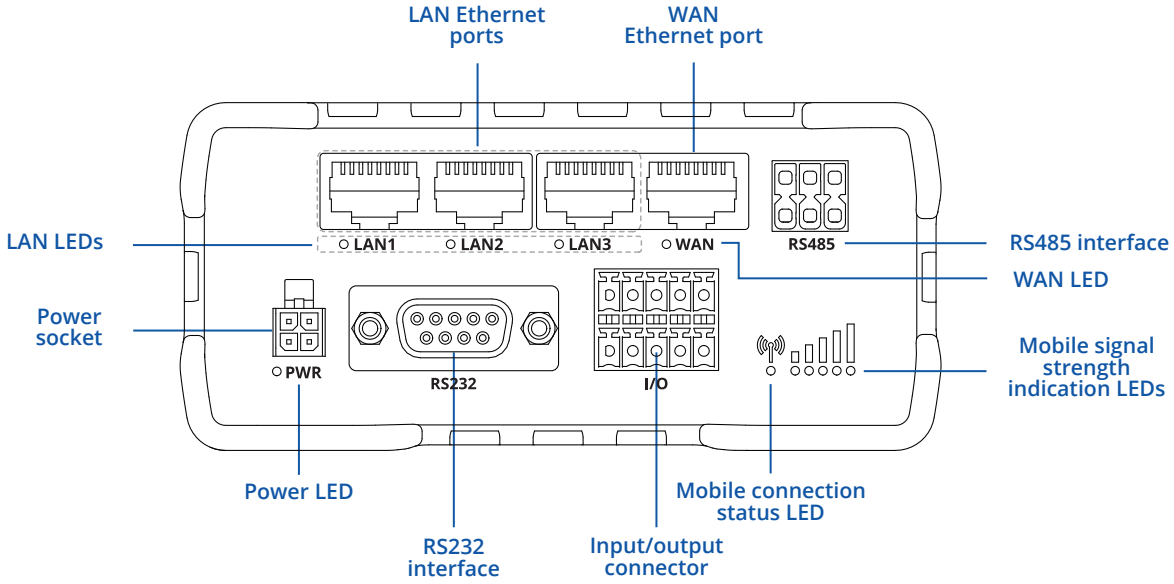
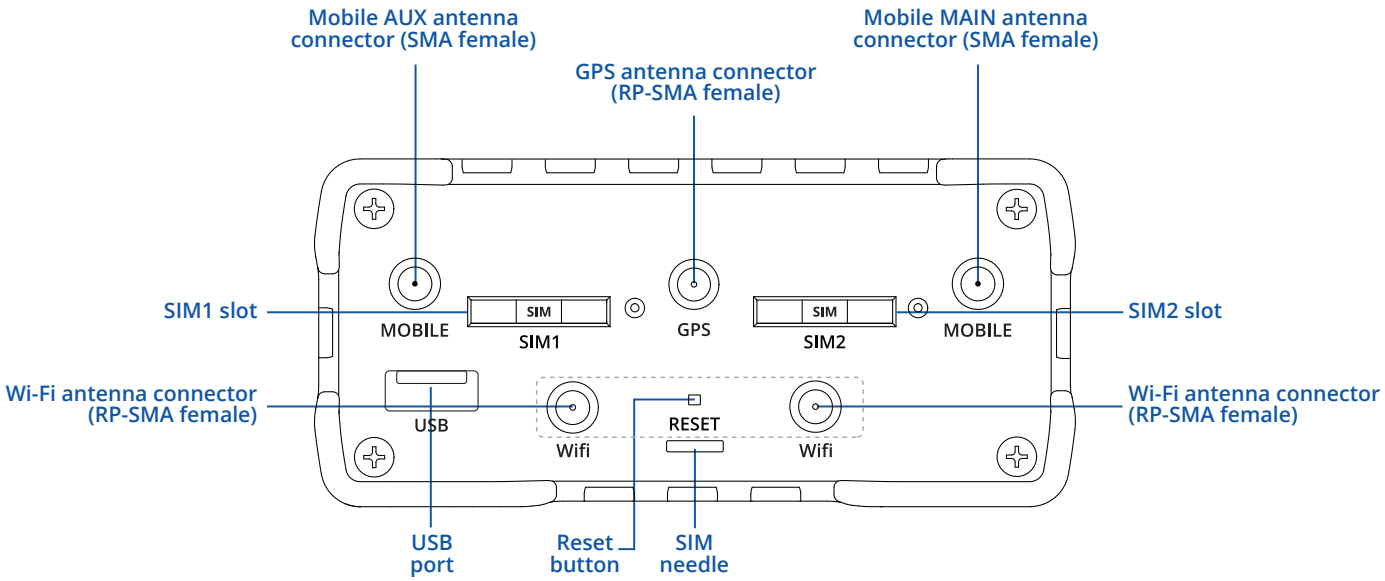
HARDWARE

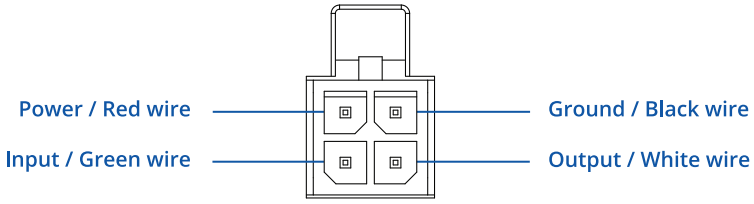
FRONT VIEW



BACK VIEW



POWER SOCKET PINOUT



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FEATURES

MOBILE

Mobile module	4G (LTE) – Cat 4 up to 150 Mbps, 3G – Up to 42 Mbps, 2G – Up to 236.8 kbps
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
Multiple PDN	Possibility to use different PDNs for multiple network access and services
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)
WiFi security	WPA2-Enterprise - PEAP, WPA2-PSK, WEP, WPA-EAP, WPA-PSK; AES-CCMP, TKIP, Auto Cipher modes, client separation
SSID/ESSID	SSID stealth mode and access control based on MAC address
WiFi users	Up to 100 simultaneous connections
Wireless Hotspot	Captive portal (Hotspot), internal/external Radius server, built in customizable landing page

NETWORK

Routing	Static routing, Dynamic routing (BGP, OSPF v2, RIP v1/v2, NHRP)
Network protocols	TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, HTTPS, FTP, SMTP, SSL v3, 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, Relayd
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	WiFi WAN, Mobile, VRRP, Wired options, each of which can be used as an automatic Failover
Load balancing	Balance Internet traffic over multiple WAN connections
Hotspot	Internal/external Radius server, captive portal, built in customizable landing page
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	Custom data limits for both SIM cards
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

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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

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
ZeroTier	ZeroTier VPN client support
Tinc	Tinc offers encryption, authentication and compression in it's tunnels. Client and server support.

MODBUS TCP SLAVE

ID range	Respond to one ID in range [1;255] or any
Allow Remote Access	Allow access through WAN
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

MODBUS TCP MASTER

Supported functions	01, 02, 03, 04, 05, 06, 15, 16
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)

MODBUS RTU MASTER (RS232)

Supported baud rates	From 300 to 115200
Supported functions	01, 02, 03, 04, 05, 06, 15, 16
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
Number of data bits	From 5 to 8
Number of stop bits	1 or 2
Parity	None, Even, Odd
Flow	None, RTS/CTS, Xon/Xoff
Duplex	Full duplex

MODBUS RTU MASTER (RS485)

Supported baud rates	From 300 to 300000
Supported functions	01, 02, 03, 04, 05, 06, 15, 16
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
Number of data bits	8
Number of stop bits	1
Parity	None, Even, Odd
Flow	None, Xon/Xoff
Duplex	Half duplex

MODBUS DATA TO SERVER

Protocol	HTTP(S), MQTT, Azure MQTT

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MQTT GATEWAY

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

DNP3

Supported modes	TCP Master, DNP3 Outstation, RTU Master

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, WiFi 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 MIPS 24Kc 580 MHz
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, restore point
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++
Development tools	SDK package with build environment provided

SERIAL

RS232	DB9 connector, full RS232 (with RTS, CTS)
RS485	RS485 Full Duplex (4 wires) and Half Duplex (2 wires). 300-115200 baud rate
Serial functions	Console, Serial over IP, Modem, MODBUS gateway, NTRIP Client

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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

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

USB

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

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 LAN port, not compatible with IEEE802.3af, 802.3at and 802.3bt standards, Mode B, LAN1 Port, 9 - 50 VDC
Power consumption	< 2 W idle, < 7 W Max

PHYSICAL INTERFACES (PORTS, LEDS, ANTENNAS, BUTTONS, SIM)

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 (available from HW revision 1600)
Status LEDs	1 x bi-color connection status LED, 5 x connection strength LEDs, 4 x LAN status LEDs, 1 x Power LED
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	1x 10 pin industrial socket for inputs/outputs
Antennas	2 x SMA for LTE, 2 x RP-SMA for WiFi, 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)	110 x 50 x 100 mm
Weight	287 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

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REGULATORY & TYPE APPROVALS

Regulatory	CE/RED, UKCA, CB

EMI IMMUNITY

Standards	EN 301 489-1 V2.2.3, EN 301 489-17 V3.2.4, Draft EN 301 489-19 V2.2.0, Final draft EN 301 489-52 V1.2.0, EN 55032:2015+A1:2020, EN 55035:2017+A11:2020, EN 61000-3-3:2013+A1:2019, EN IEC 61000-3-2:2019
ESD	EN 61000-4-2:2009
RS	EN 61000-4-3:2020
EFT	EN 61000-4-4:2012
Surge Immunity (AC Mains Power Port)	EN 61000-4-5:2014+A1:2017
CS	EN 61000-4-6:2009
DIP	EN IEC 61000-4-11:2020

RF

Standards	EN 300 328 V2.2.2, EN 301 908-1 V13.1.1, EN 301 908-2 V13.1.1, EN 301 908-13 V13.1.1, EN 303 413 V1.1.1

SAFETY

Standards	EN IEC 62311:2020, AS/NZS 60950.1:2015, IEC 62368-1:2018, EN IEC 62368-1:2020+A11:2020

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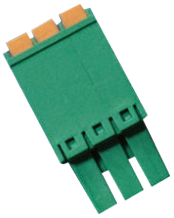
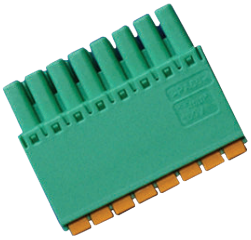
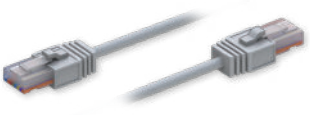
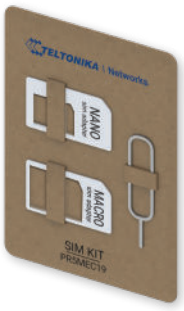
WHAT'S IN THE BOX?

STANDARD PACKAGE CONTAINS*

- Router RUT956
- 9 W PSU
- 2 x LTE antennas (magnetic mount, SMA male, 3 m cable)
- 2 x WiFi 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 RUT956	9 W PSU	2 X LTE ANTENNAS (MAGNETIC MOUNT, SMA MALE, 3 M CABLE)
2 X WIFI 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

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

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STANDARD ORDER CODES

PRODUCT CODE	HS CODE	HTS CODE	PACKAGE CONTAINS
RUT956 100000	851762	8517.62.00	Standard package with Euro PSU
RUT956 200000	851762	8517.62.00	Standard package with Euro PSU
RUT956 400000	851762	8517.62.00	Standard package with Euro PSU
RUT956 700700	851762	8517.62.00	Standard package with AU PSU
RUT956 800700	851762	8517.62.00	Standard package with AU PSU

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

AVAILABLE VERSIONS

PRODUCT CODE	REGION (OPERATOR)	FREQUENCY
RUT956 1*****	Europe[1], the Middle East, Africa, Korea, Thailand	• **4G (LTE-FDD):** B1, B3, B5, B7, B8, B20 • **4G (LTE-TDD):** B40 • **3G:** B1, B5, B8 • **2G:** B3, B8
RUT956 2*****	Europe[1], the Middle East, Africa, Korea, Thailand	• **4G (LTE-FDD):** B1, B3, B7, B8, B20, B28A • **4G (LTE-TDD):** B38, B40, B41 • **3G:** B1, B8 • **2G:** B3, B8
RUT956 4*****	Global[1]	• **4G (LTE-FDD):** B1, B2, B3, B4, B5, B7, B8, B12, B13, B18, B19, B20, B25, B26, B28 • **4G (LTE-TDD):** B38, B39, B40, B41 • **3G:** B1, B2, B4, B5, B6, B8, B19 • **2G:** B2, B3, B5, B8
RUT956 7*****	South America, Australia, New Zealand, Taiwan	• **4G (LTE-FDD):** B1, B2, B3, B4, B5, B7, B8, B28 • **4G (LTE-TDD):** B40 • **3G:** B1, B2, B4, B5, B8 • **2G:** B2, B3, B5, B8
RUT956 8*****	South America, Australia, New Zealand, Taiwan	• **4G (LTE-FDD):** B1, B2, B3, B4, B5, B7, B8, B28 • **4G (LTE-TDD):** B40 • **3G:** B1, B4, B5, B8 • **2G:** B2, B3, B5, B8

The price and lead-times for region (operator) specific versions may vary. For more information please contact us.

* - For more detailed information, visit our Wiki
1 - Regional availability - excluding Russia & Belarus.

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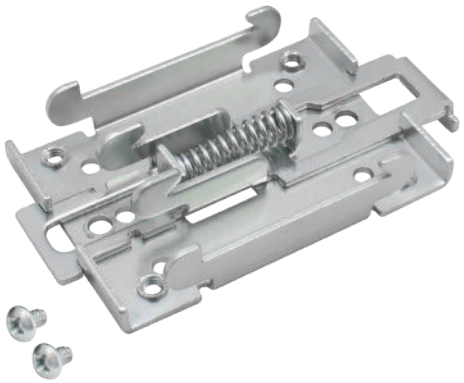
MOUNTING OPTIONS

DIN RAIL KIT

Parameter	Value
Mounting standard	35mm DIN Rail
Material	Low carbon steel
Weight	57g
Screws included	Philips Pan Head screw #6-32×3/16, 2pcs
Dimensions	82 mm x 46 mm x 20 mm
RoHS Compliant	V



DIN RAIL KIT

- DIN Rail adapter
- Philips Pan Head screw #6-32×3/16, 2pcs for RUT2xx/RUT9xx

ORDER CODE	HS CODE	HTS CODE
PR5MEC00	73269098	7326.90.98

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

COMPACT DIN RAIL KIT

Parameter	Value
Mounting standard	35mm DIN Rail
Material	ABS + PC plastic
Weight	6.5 g
Screws included	Philips Pan Head screw #6-32×3/16, 2pcs
Dimensions	70 mm x 25 mm x 14,5 mm
RoHS Compliant	V

DIN RAIL KIT

- Compact plastic DIN Rail adapter (70x25x14,5mm)
- Philips Pan Head screw #6-32×3/16, 2pcs

ORDER CODE	HS CODE	HTS CODE
PR5MEC11	73269098	7326.90.98

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

SURFACE MOUNTING KIT

Parameter	Value
Mounting standard	Flat surface mount
Material	ABS + PC plastic
Weight	2x5 g
Screws included	Philips Pan Head screw #6-32×3/16, 2pcs
Dimensions	25 mm x 48 mm x 7.5 mm
RoHS Compliant	V

DIN RAIL KIT

- Surface mounting kit
- Philips Pan Head screw #6-32×3/16, 2pcs

ORDER CODE	HS CODE	HTS CODE
PR5MEC12	73269098	7326.90.98

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RUT956 SPATIAL MEASUREMENTS & WEIGHT

MAIN MEASUREMENTS

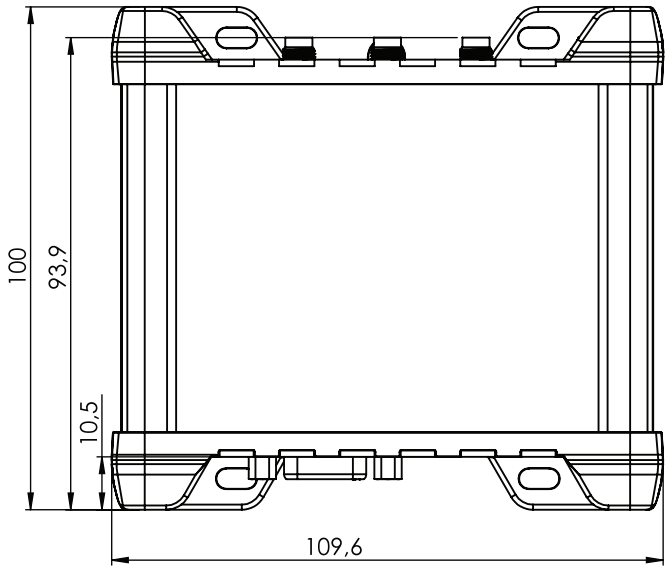
W x H x D dimensions for RUT956:

Device housing*:	110 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.

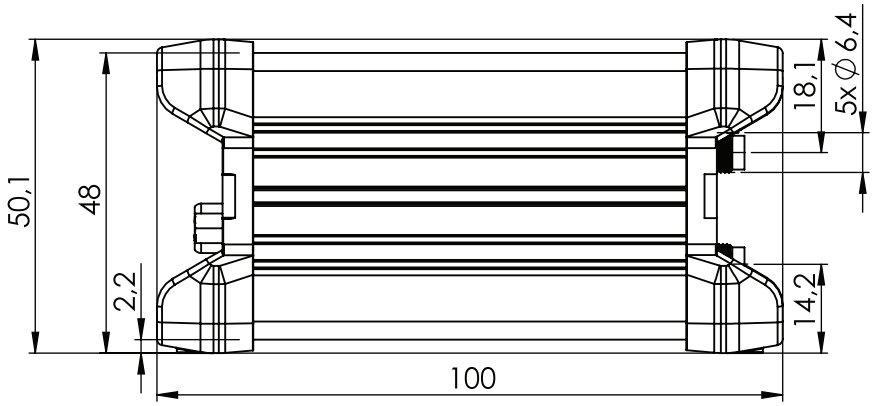
TOP VIEW

The figure below depicts the measurements of RUT956 and its components as seen from the top:



RIGHT VIEW

The figure below depicts the measurements of RUT956 and its components as seen from the right side:



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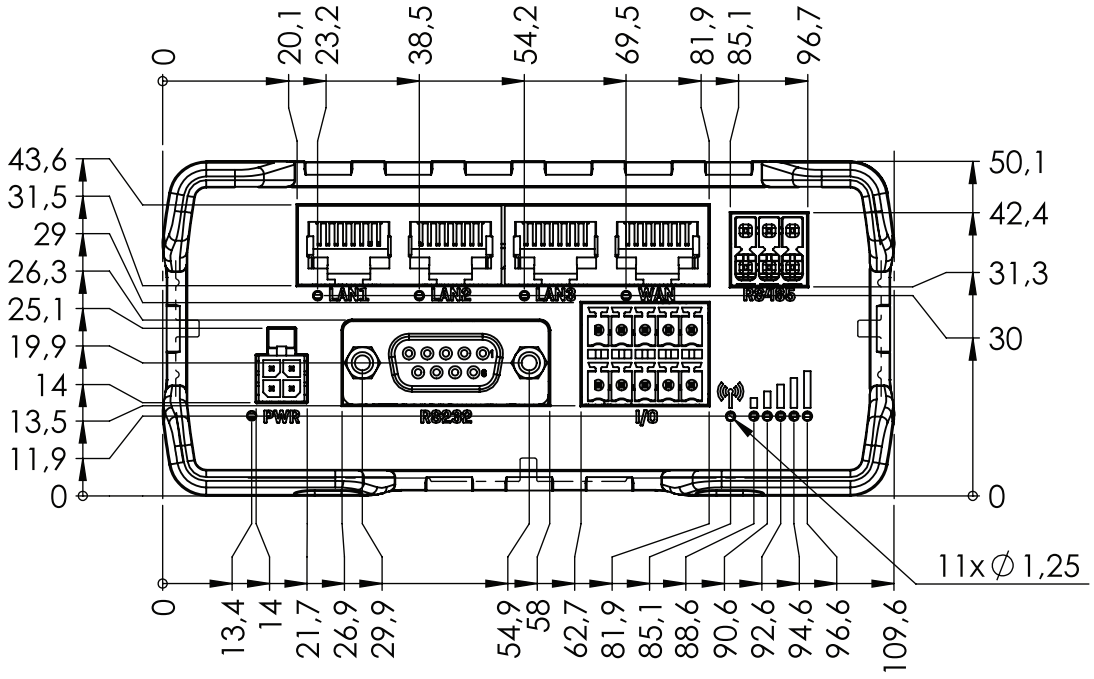
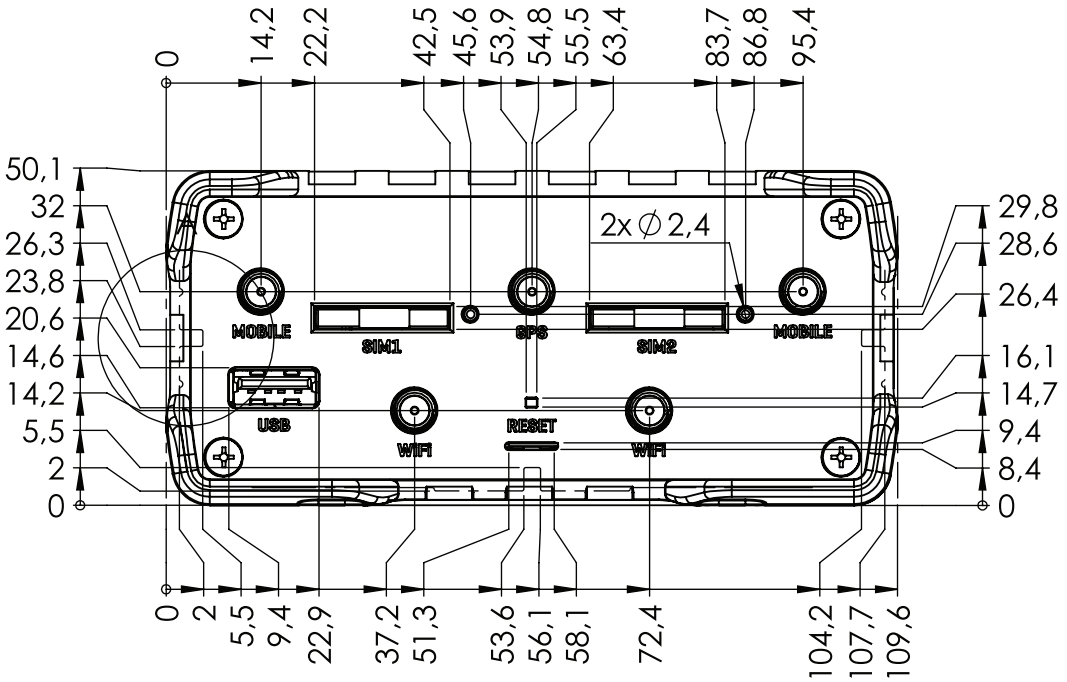
FRONT VIEW

The figure below depicts the measurements of RUT956 and its components as seen from the front panel side:



REAR VIEW

The figure below depicts the measurements of RUT956 and its components as seen from the back panel side:



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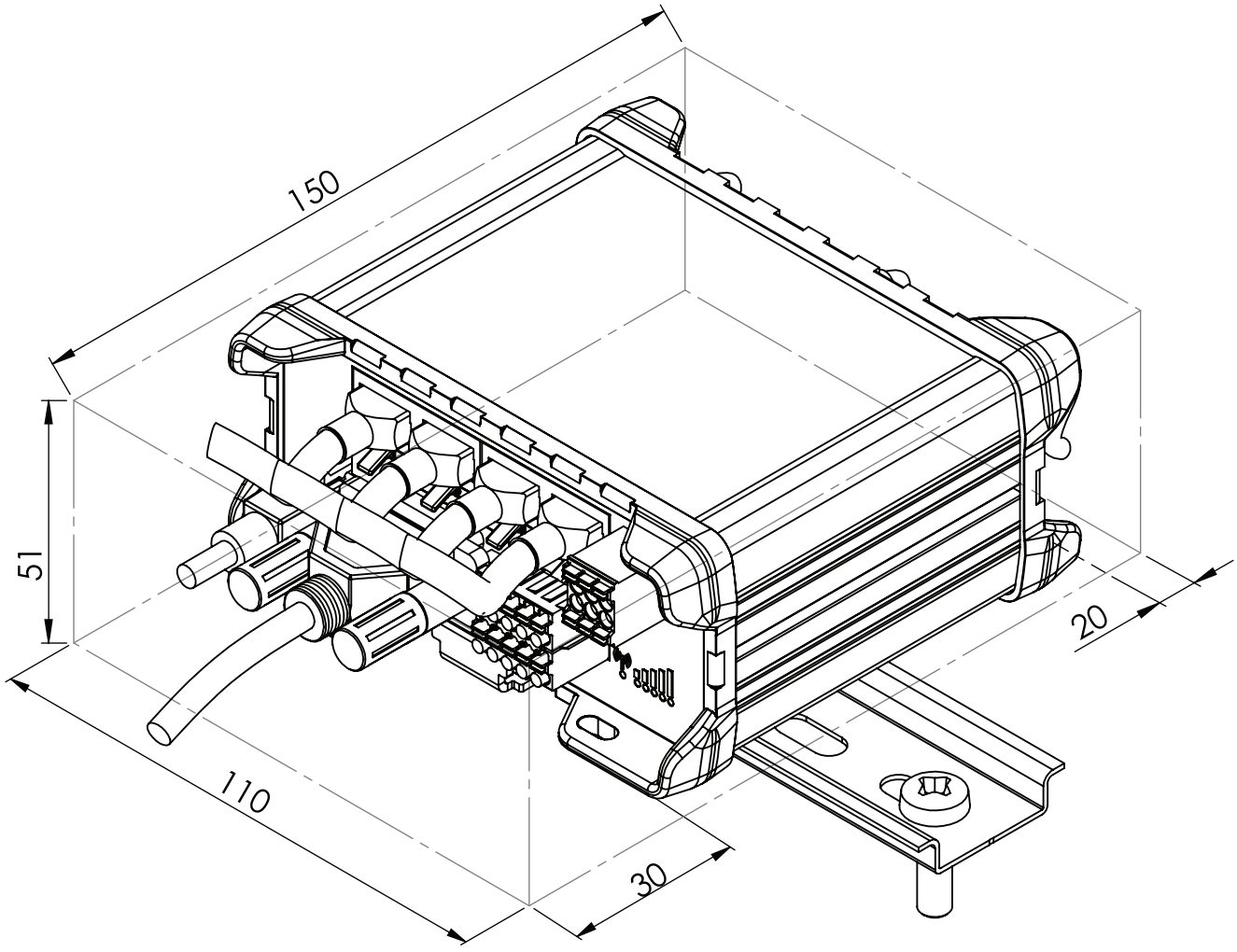
MOUNTING SPACE REQUIREMENTS

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



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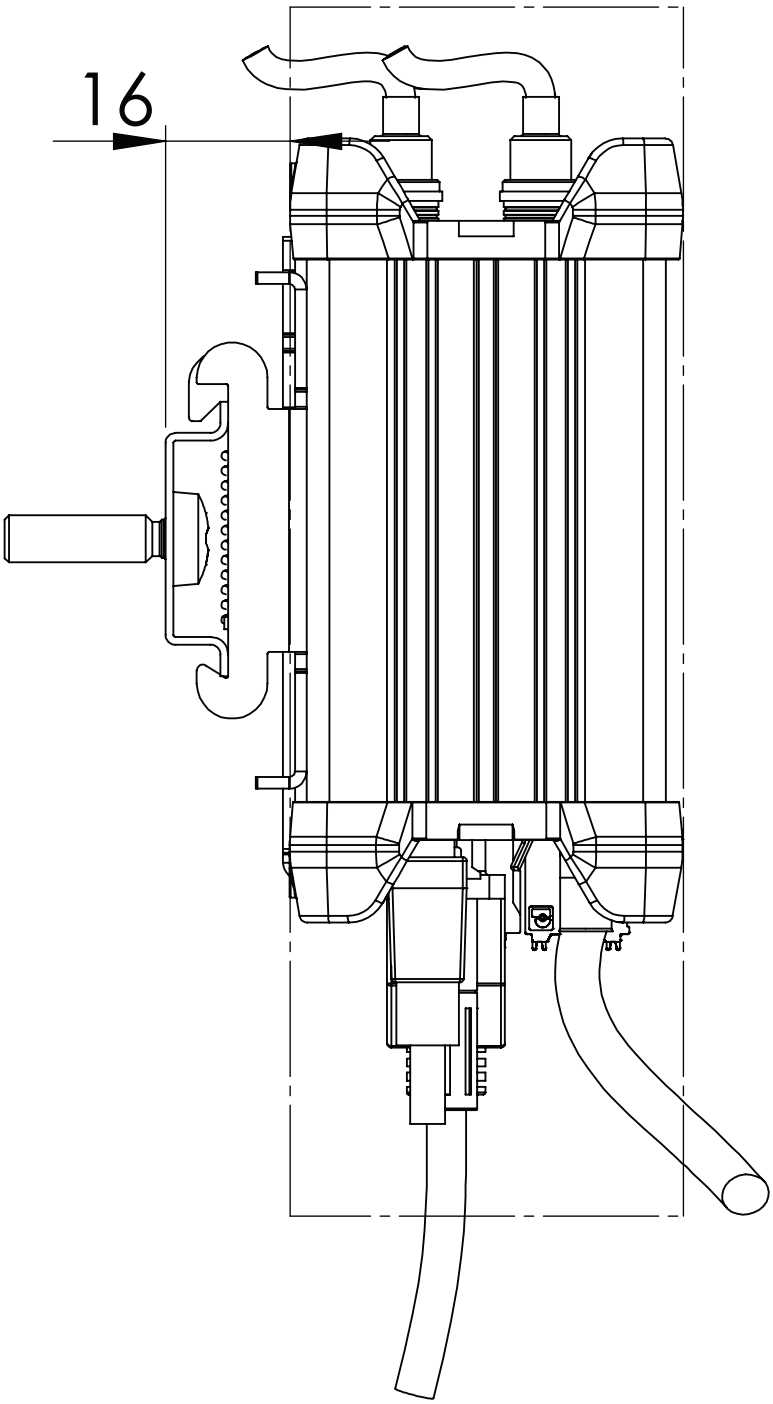
DIN RAIL

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



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