TELTONIKA | Networks

TCR100
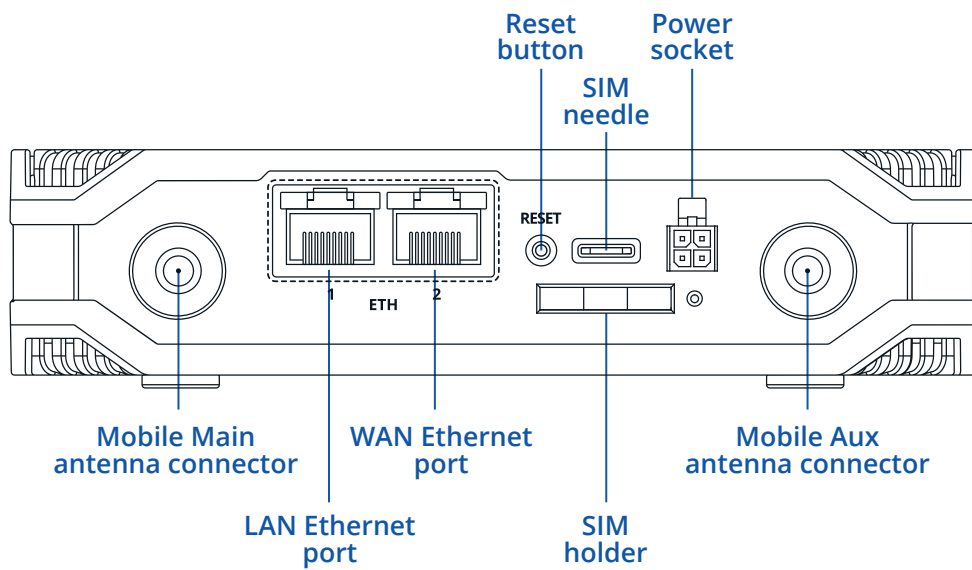
HARDWARE
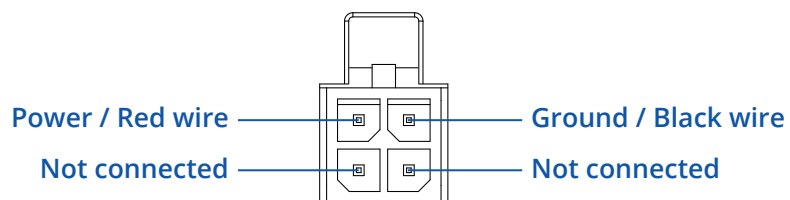
FRONT VIEW

Network status icons

WiFi   WPS

TCR100

Wi-fi
button

WPS
button

BACK VIEW

Reset
button

Power
socket

SIM
needle

RESET

1   2

ETH

Mobile Main
antenna connector

WAN Ethernet
port

Mobile Aux
antenna connector

LAN Ethernet
port

SIM
holder

POWER SOCKET PINOUT

Power / Red wire ——— ——— Ground / Black wire

Not connected ——— ——— Not connected
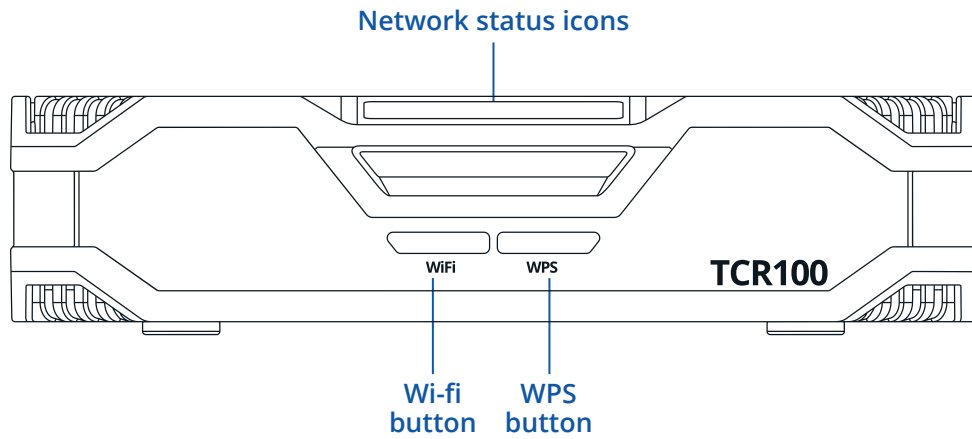
FEATURES

MOBILE

Mobile module	4G+ (LTE-A) – Cat 6 up to 300 Mbps, 3G – Up to 42 Mbps
Status	Signal strength, SINR, RSRP, RSRQ, Bytes sent/received, connected band, carrier aggregation, 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, SMS auto reply
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 mode	Direct connection (bridge) between mobile ISP and device on LAN

WIRELESS

Wireless mode	2.4 GHz (802.11 b/g/n, 2x2 MIMO), 5 GHz (802.11 ac, 1x1 MIMO), Access Point (AP), Station (STA)
WiFi security	WPA3-EAP, WPA3-SAE, WPA2-Enterprise-PEAP, WPA2-PSK, WEP; AES-CCMP, TKIP, Auto Cipher modes, client separation
ESSID	ESSID stealth mode
Wireless Hotspot	Captive portal (Hotspot), internal/external Radius server, SMS OTP, MAC auth, built in customizable landing page, walled garden
Wireless mesh/roaming	Wireless mesh (802.11s), fast roaming (802.11r)

ETHERNET

WAN	1 x WAN port (can be configured as LAN) 10/100 Mbps, compliance with IEEE 802.3, IEEE 802.3u standards, supports auto MDI/MDIX crossover
LAN	1 x LAN port, 10/100 Mbps, compliance with IEEE 802.3, IEEE 802.3u standards, supports auto MDI/MDIX crossover

NETWORK

Routing	Static routes, Dynamic routes
Network protocols	TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, HTTPS, SMTP, SSL v3, TLS, ARP, VRRP, PPP, PPPoE, UPNP, SSH, DHCP, Telnet, SNMP, MQTT, Wake on LAN (WOL)
Connection monitoring	Ping Reboot, Wget reboot, Periodic Reboot, LCP and ICMP for link inspection
Firewall	Port forwards, traffic rules, NAT 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	Mobile, Wired and Wi-Fi WAN 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

Authetication	Pre-shared key, digital certificates, X.509 certificates
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	Tag based VLAN separation
Mobile quota control	Option to set custom data limit
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, 12 encryption methods
OpenVPN Encryption	DES-CBC, RC2-CBC, DES-EDE-CBC, DES-EDE3-CBC, DESX-CBC, BF-CBC, RC2-40-CBC, CAST5-CBC, RC2-64-CBC, AES-128-CBC, AES-192-CBC, AES-256-CBC
IPSec	IKEv1, IKEv2, with 5 encryption methods for IPsec (DES, 3DES, AES128, AES192, AES256)
GRE	GRE tunnel
PPTP, L2TP	Client/Server instances can run simultaneously, L2TPv3 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

MODBUS TCP SLAVE

ID filtering	Respond to one ID in range [1;255] or any
Allow remote access	Allow access through WAN
Custom registers	MODBUS TCP custom register block, which allows to 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), HEX, ASCII

MQTT GATEWAY

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

DNP3

Supported modes	TCP Master, DNP3 Outstation

DATA TO SERVER (PLANNED)

Protocols	HTTP(S), MQTT, Azure MQTT, Kinesis

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
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, Mobile Cell ID, ICCID, IMEI, Connection Type, Operator, Signal Strength, WAN Type and IP
Azure IoT Hub	Can send device IP, Number of bytes send/received, 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, Temperature, PIN count to Azure IoT Hub server

SYSTEM CHARACTERISTICS

CPU	QCA9531, MIPS 24kc, 650 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
FOTA	Update FW/configuration from server
RMS	Update FW/configuration for multiple devices at once
Keep settings	Update FW without losing current configuration

POWER

Connector	4 pin industrial DC power socket
Input voltage range	9 - 30 VDC, reverse polarity protection, voltage surge/transient protection
Power consumption	3.7 W average, 9.3 W max

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

|	
Ethernet	2 x RJ45 ports, 10/100 Mbps
Status LEDs	1 x Internet, 1 x Wi-Fi, 3 x Mobile connection strength, 2 x Ethernet status
SIM	1 x SIM slots (Mini SIM - 2FF), 1.8 V/3 V, external SIM holder (Embedded SIM variant available)
Antenna	2 x SMA for LTE, 2 x Internal for 2.4 GHz Wi-Fi, 1 x Internal for 5 GHz Wi-Fi
Power	1 x 4 pin DC connector
WPS	WPS activation button
Wi-Fi On/Off	Wi-Fi enable/disable button
Reset	Reboot/User default reset/Factory reset button

PHYSICAL SPECIFICATION

Casing material	Plastic housing with aluminum screws and heatsink
Dimensions (W x H x D)	150 x 37 x 105 mm
Weight	376 g
Mounting options	Flat surface placement

## OPERATING ENVIRONMENT

Operating temperature	-40 C to 75 C
Operating humidity	10 % to 90 % non-condensing

HARDWARE INSTALLATION

1. Pull out the SIM needle from SIM adapter kit.
2. Push the SIM holder button with the SIM needle.
3. Pull out the SIM holder.
4. Insert your SIM card into the SIM holder.
5. Slide the SIM holder back into the router.
6. You may store the SIM needle in the designated holder for future use.
7. Attach all antennas.
8. Connect the power adapter to the 4 pin socket and then plug the other end of the power adapter into a power outlet.
9. Connect to the device's WiFi interface by using SSID and password or scaning QR code provided on the device information label or use an Ethernet cable connected to LAN port.

NETWORK STATUS ICONS
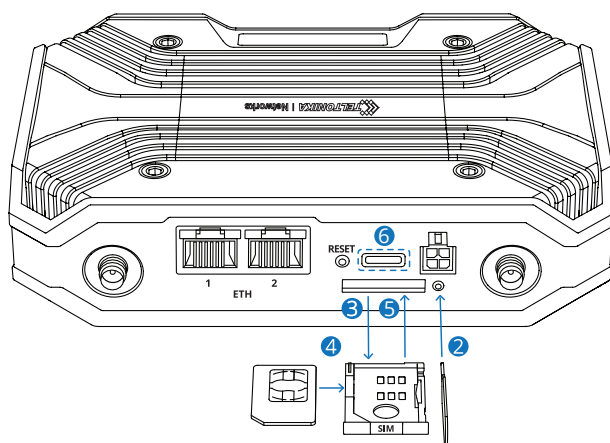
Buttons   Network status icons
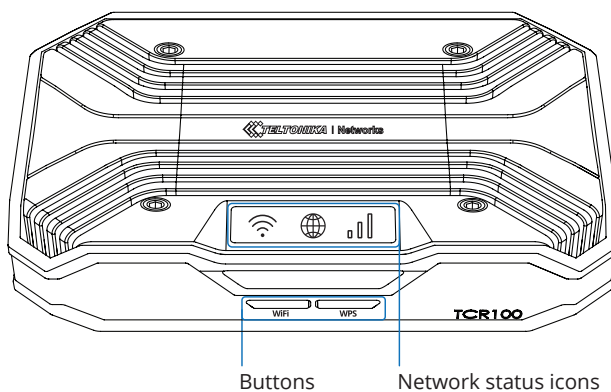
WiFi button – Enables/Disables Wi-Fi radio.

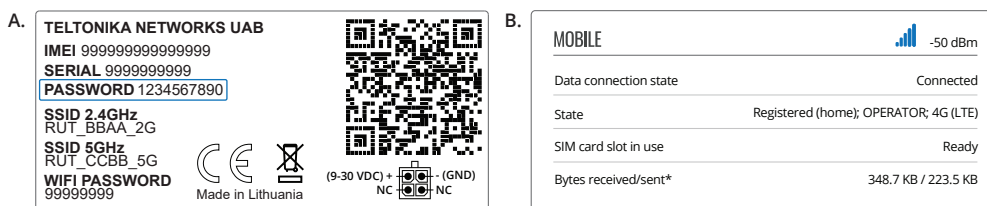**WPS** button – Activates WPS authentication for 120 seconds.

Wi-Fi indication LED. When LED is lit – WiFi is enabled.

Internet connection LED. When LED is lit – the router has an internet connection, when LED is blinking – internet connection has been lost.

Mobile signal strength LEDs. Signal strength indicated by number of lit bars.

LOGIN TO DEVICE

1. To enter the router's Web interface (WebUI), type http://192.168.1.1 into the URL field of your Internet browser*.
2. To access router's WebUI use admin as username and password given in the information label on the bottom side of the router (image A), when prompted for authentication.
3. After you log in, you will be prompted to change your password for security reasons. The new password must contain at least 8 characters, including at least one uppercase letter, one lowercase letter, and one digit. This step is mandatory, and you will not be able to interact with the router's WebUI before you change the password.
4. When you change the router's password, the Setup wizard will start. The Setup wizard is a tool used to set up some of the router's main operating parameters.
5. Go to the Overview page and pay attention to the Signal Strength indication (image B). To maximize the cellular performance try adjusting the antennas or changing the location of your device to achieve the best signal conditions.

A.
TELTONIKA NETWORKS UAB
IMEI 999999999999999
SERIAL 9999999999
PASSWORD 1234567890
SSID 2.4GHz
RUT_BBAA_2G
SSID 5GHz
RUT_CCBB_5G
WIFI PASSWORD
99999999
Made in Lithuania
(9-30 VDC) + - (GND)
NC NC

B.
MOBILE	-50 dBm
Data connection state	Connected
State	Registered (home); OPERATOR; 4G (LTE)
SIM card slot in use	Ready
Bytes received/sent*	348.7 KB / 223.5 KB

TECHNICAL INFORMATION

Radio specifications	
RF technologies	3G, 4G (LTE) Cat6, IEEE 802.11 b/g/n 2.4 GHz, IEEE 802.11 a/n/ac 5 GHz
Max RF power	24 dBm@WCDMA, 23 dBm@LTE, 20 dBm@Wi-Fi 2.4G, 23 dBm@Wi-Fi 5G
Integrated antennas specifications	
Wi-Fi antenna	1. 2.4 GHz antenna: 2.4-2.5 GHz, VSWR<2, peak gain 1.62 dB, omnidirectional 2. 2.4 GHz antenna: 2.4-2.5 GHz, VSWR<2, peak gain 3.97 dB, omnidirectional 3. 5 GHz antenna: 5.1-5.85 GHz, VSWR<2, peak gain 5.02 dB, omnidirectional
Bundled accessories specifications**	
Power adapter	Input: 0.6 A@100-240 VAC, Output: 12 VDC, 1 A, 4 pin plug
Mobile antenna	698~960/1710~2690 MHz, 50 Ω, VSWR<3, gain*** 4 dBi, omnidirectional, SMA male connector

*To ensure maximum compatibility please use following latest internet browsing applications: Chrome, Firefox, Edge, Opera, Safari, Android Chrome, Android Firefox
**Order code dependent.
***Higher gain antenna can be connected to compensate for cable attenuation when a cable is used. The user is responsible for the compliance with the legal regulations.

In all EU member states, operation of 5150-5250 MHz is restricted to indoor use only.

WHAT'S IN THE BOX?

STANDARD PACKAGE CONTAINS*

- Router TCR100
- 18 W PSU
- 2 x LTE antennas (swivel, SMA male)
- Ethernet cable (1.5 m)
- SIM Adapter kit
- QSG (Quick Start Guide)
- RMS Flyer
- Packaging box

TCR100

18 W PSU

2 X LTE ANTENNAS (SWIVEL, SMA MALE)

ETHERNET CABLE (1.5 M)

SIM ADAPTER KIT

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

STANDARD ORDER CODES

PRODUCT CODE	PACKAGE CONTAINS
TCR100 000000	Standard package with Euro PSU

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

AVAILABLE VERSIONS

PRODUCT CODE	REGION (OPERATOR)	FREQUENCY
TCR100 0*****	Europe, the Middle East, Africa, Australia, APAC[2], Brasil, Malaysia	• 4G (LTE-FDD): B1, B3, B5, B7, B8, B20, B28, B32[1] • 4G (LTE-TDD): B38, B40, B41 • 3G: B1, B3, B5, B8

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

1 - LTE-FDD B32 Support Rx Only, and in 2×CA it is Only for Secondary Component Carrier.

2 - Excluding Japan and CMCC.

TCR100 SPATIAL MEASUREMENTS & WEIGHT

MAIN MEASUREMENTS

W x H x D dimensions for TCR100:

Device housing*:	150 x 37 x 105
Box:	173 x 71 x 148

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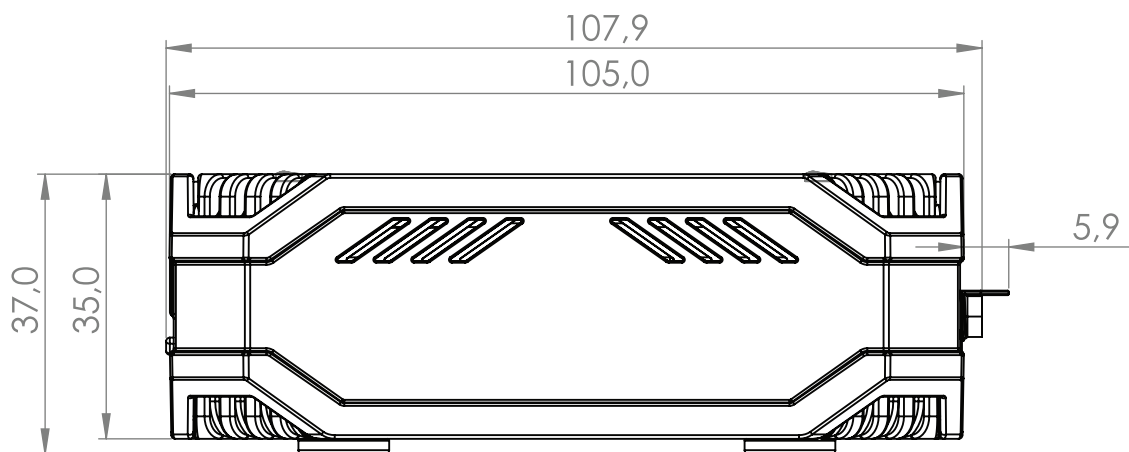
TOP VIEW

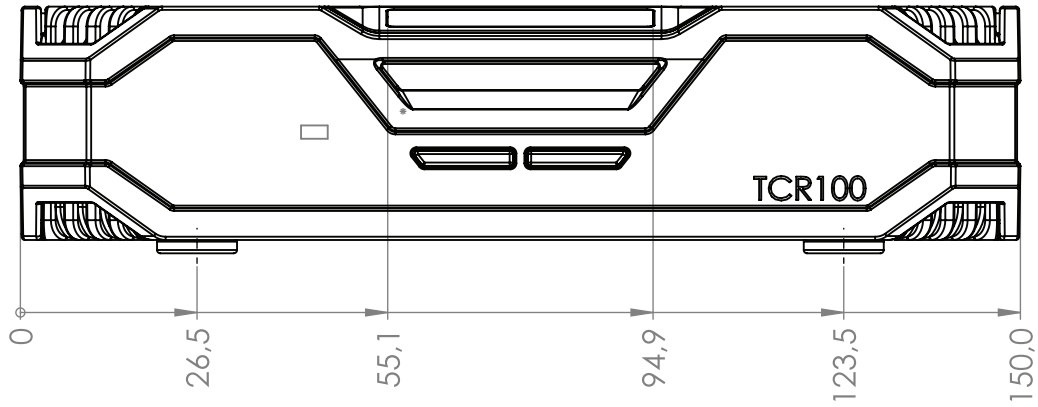The figure below depicts the measurements of TCR100 and its components as seen from the top:
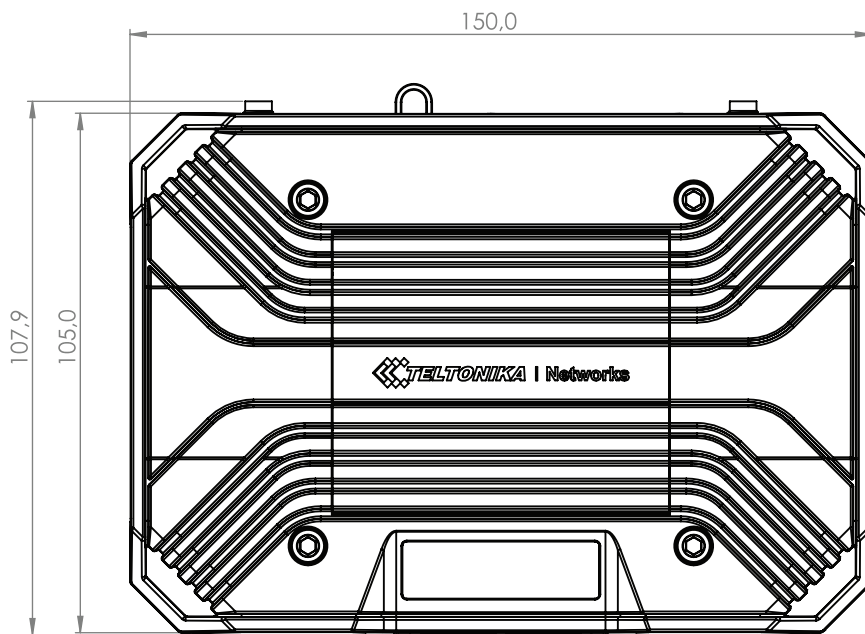
RIGHT VIEW

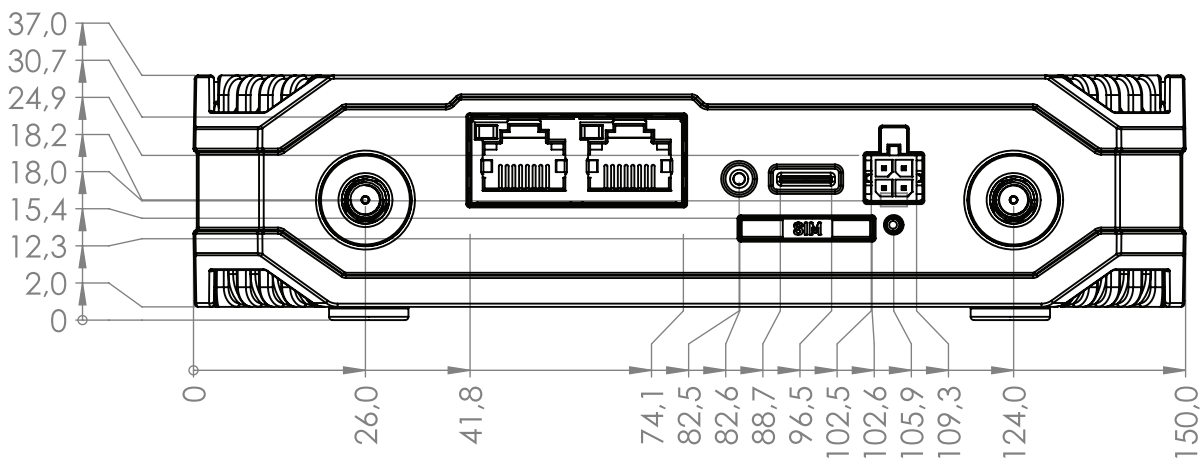The figure below depicts the measurements of TCR100 and its components as seen from the right side:

FRONT VIEW

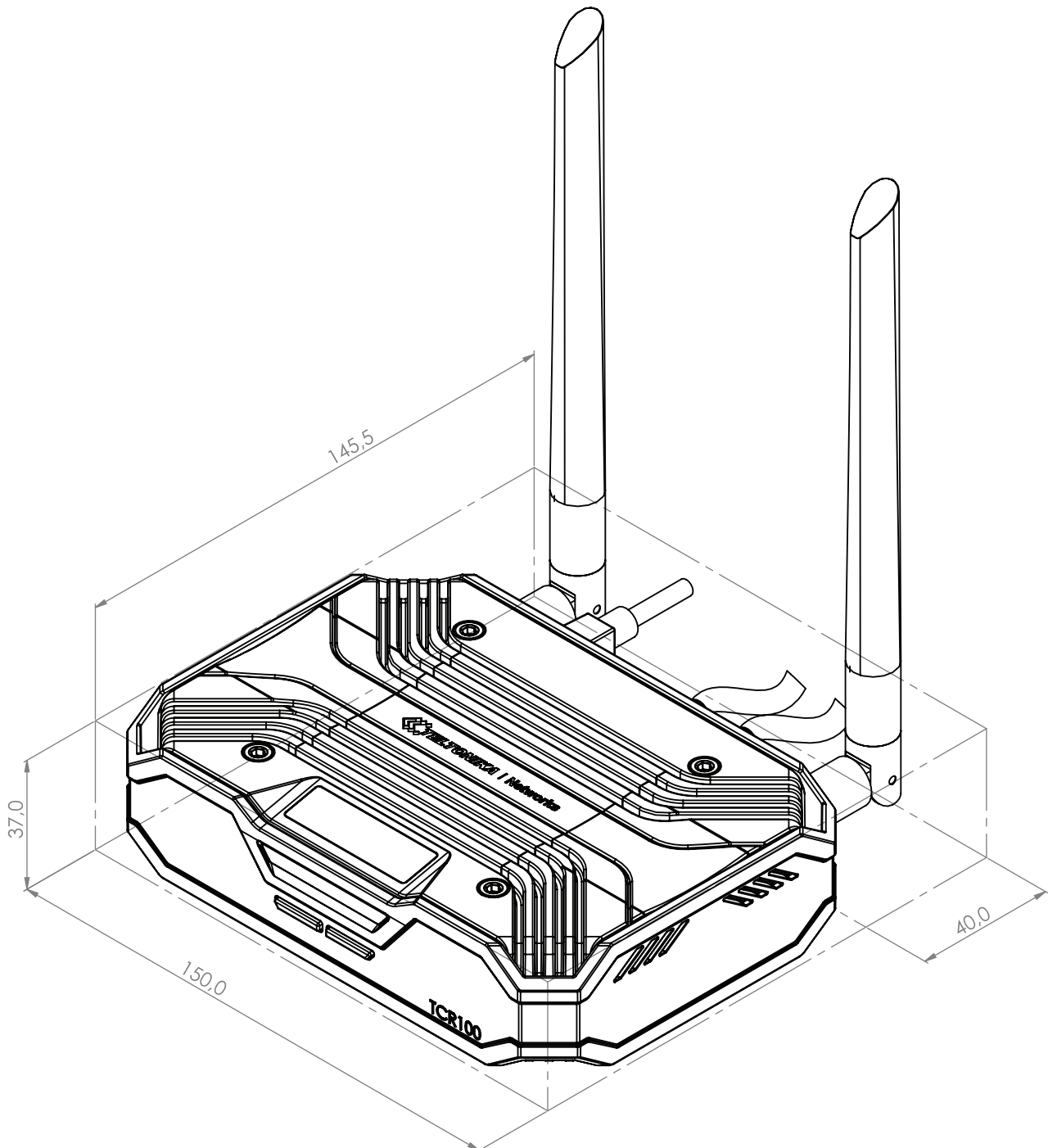The figure below depicts the measurements of TCR100 and its components as seen from the front panel side:

REAR VIEW

The figure below depicts the measurements of RUT360 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:

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