

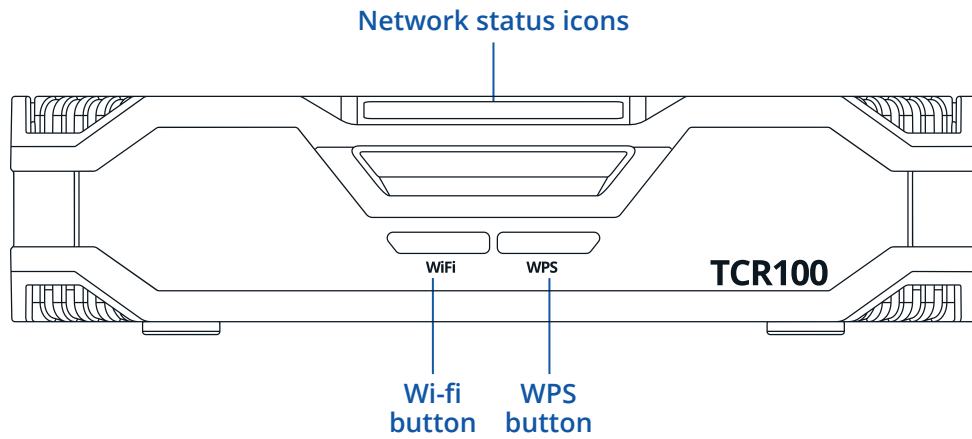
 **TELTONIKA** | Networks

# TCR100

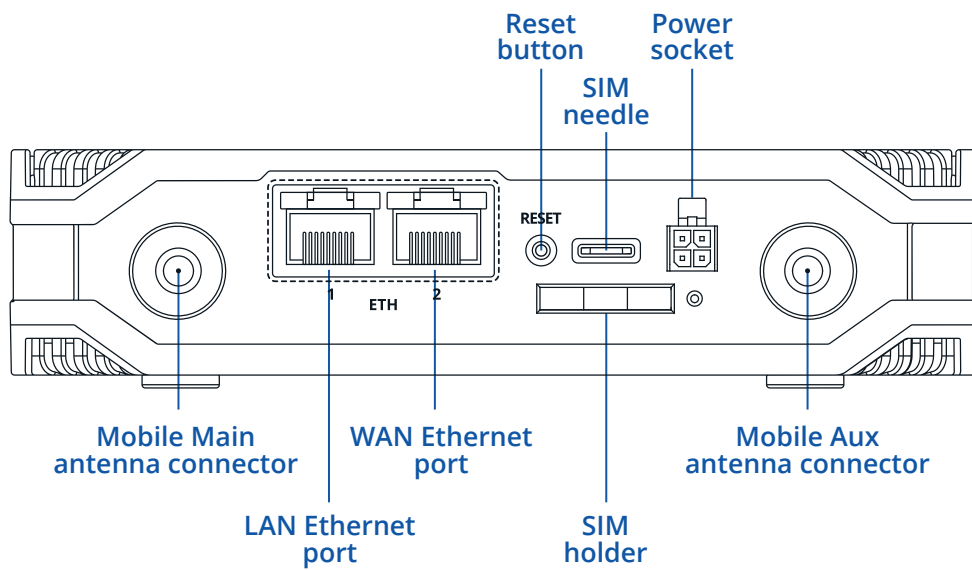


# HARDWARE

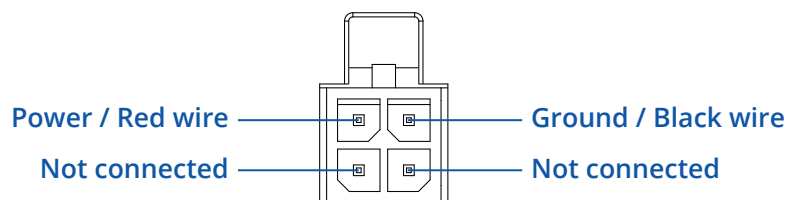
## FRONT VIEW



## BACK VIEW



## POWER SOCKET PINOUT



## 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

|                      |   |
|----------------------|---|
| Authentication       | 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 through 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, LEADS, 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**

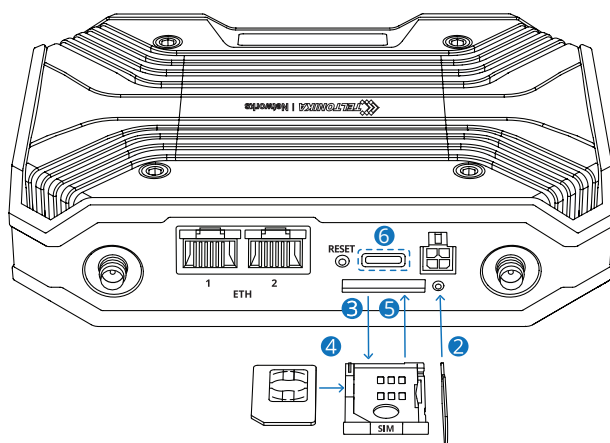
|                        |   |
|------------------------|---|
| Casing material        | Plastic housing with aluminum screws and heatsink |
| Dimensions (W x H x D) | 150 x 37 x 105 mm                                 |
| Weight                 | 376 g   |
| Mounting options       | Flat surface placement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

**OPERATING ENVIRONMENT**

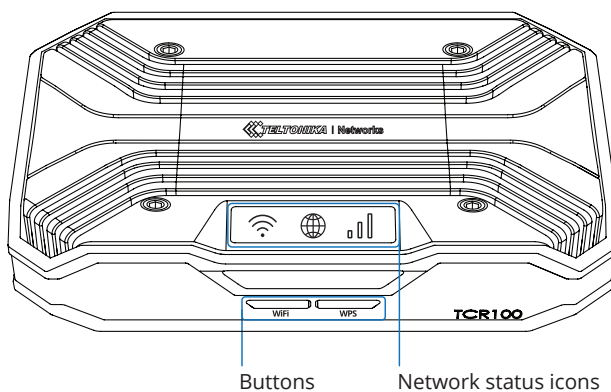
|                       |                             |
|-----------------------|-----------------------------|
| Operating temperature | -40 C to 75 C               |
| Operating humidity    | 10 % to 90 % non-condensing |

## 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 scanning QR code provided on the device information label or use an Ethernet cable connected to LAN port.





## NETWORK STATUS ICONS




**WiFi** button – Enables/Disables Wi-Fi radio.

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

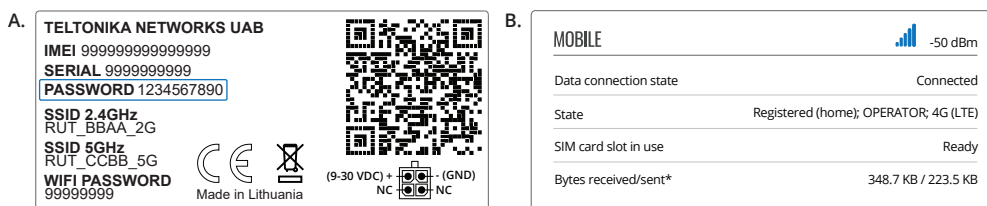
 Wi-Fi indication LED. When LED is lit – WiFi is enabled.

 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.



## 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<br>2. 2.4 GHz antenna: 2.4-2.5 GHz, VSWR<2, peak gain 3.97 dB, omnidirectional<br>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



|  |   |  |
|--|---|--|
|  <p><b>TCR100</b></p>                  |  <p><b>18 W PSU</b></p>         |  <p><b>2 X LTE ANTENNAS (SWIVEL, SMA MALE)</b></p> |
|  <p><b>ETHERNET CABLE (1.5 M)</b></p> |  <p><b>SIM ADAPTER KIT</b></p> |  |

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



## STANDARD ORDER CODES

### PRODUCT CODE

TCR100 000000

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

### PACKAGE CONTAINS

Standard package with Euro PSU

## AVAILABLE VERSIONS

### PRODUCT CODE

### REGION (OPERATOR)

### FREQUENCY

TCR100 0\*\*\*\*\*

Europe, the Middle East, Africa,  
Australia, APAC<sup>2</sup>, Brazil, Malaysia

- 4G (LTE-FDD): B1, B3, B5, B7, B8, B20, B28, B32<sup>1</sup>
- 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 2xCA it is Only for Secondary Component Carrier.

2 - Excluding Japan and CMCC.

## TCR100 SPATIAL MEASUREMENTS & WEIGHT

### MAIN MEASUREMENTS

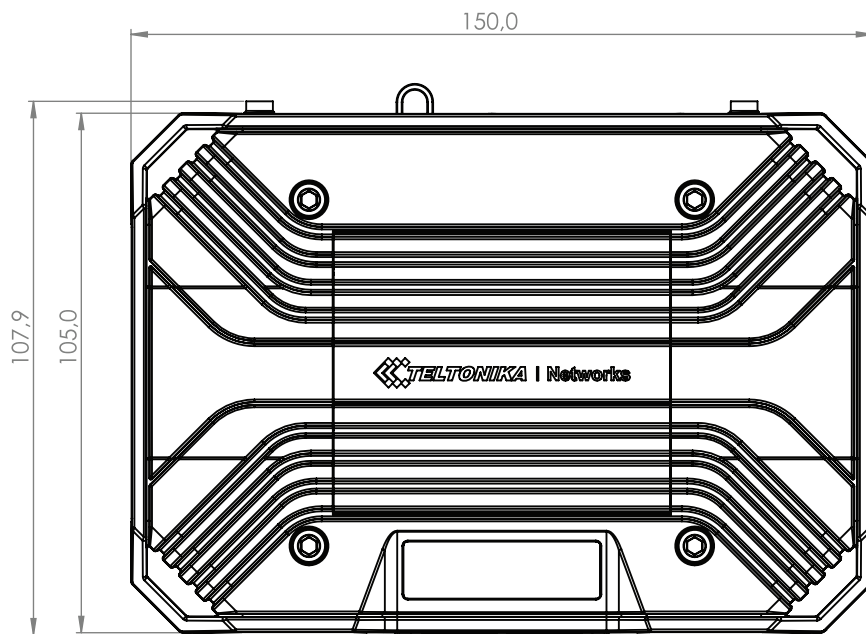
W x H x D dimensions for TCR100:

|                  |                |
|------------------|----------------|
| 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.

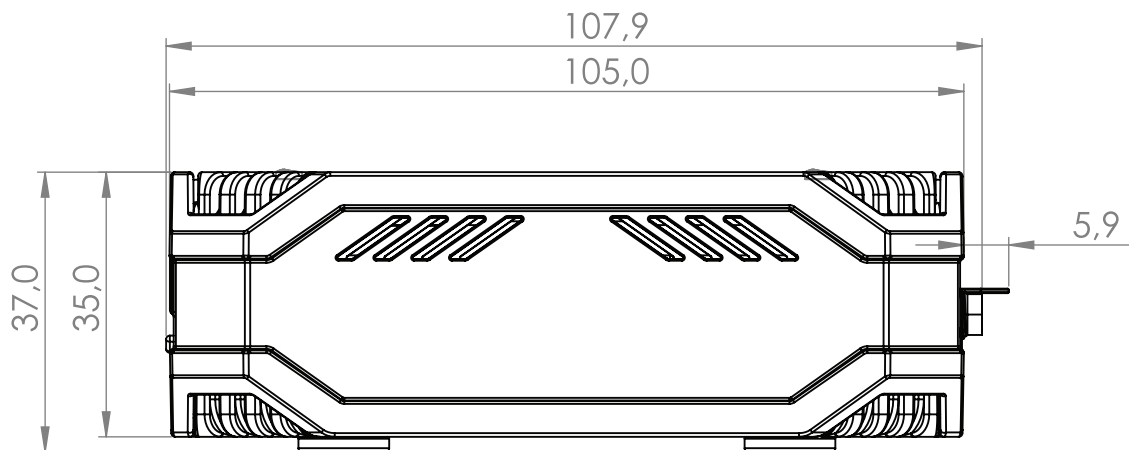
### TOP VIEW

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



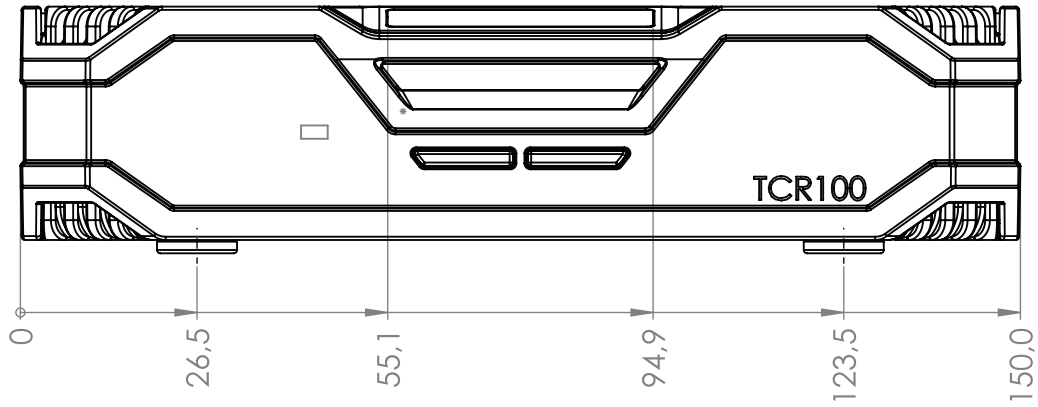
### RIGHT VIEW

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



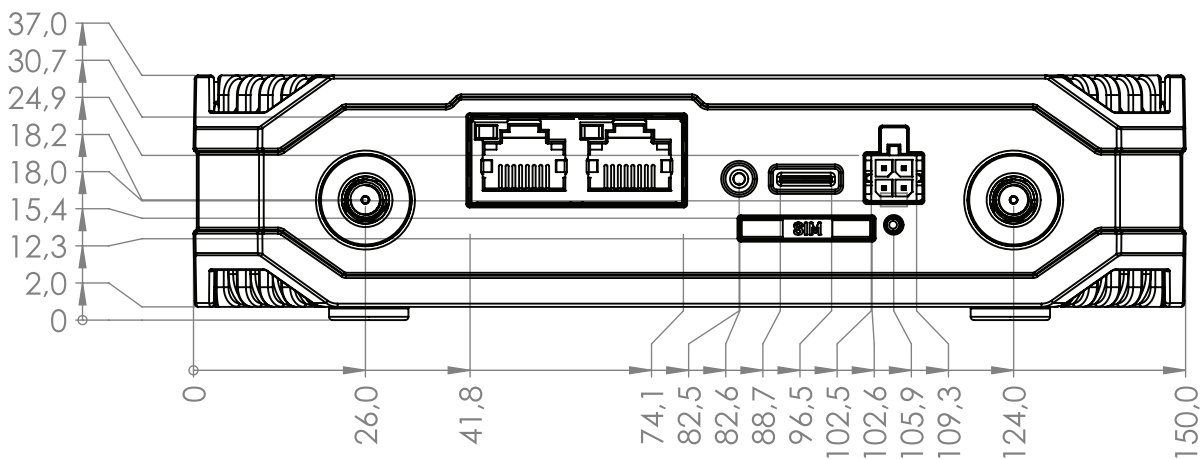
**FRONT VIEW**

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:

