TELTONIKA | Networks

# RUT361

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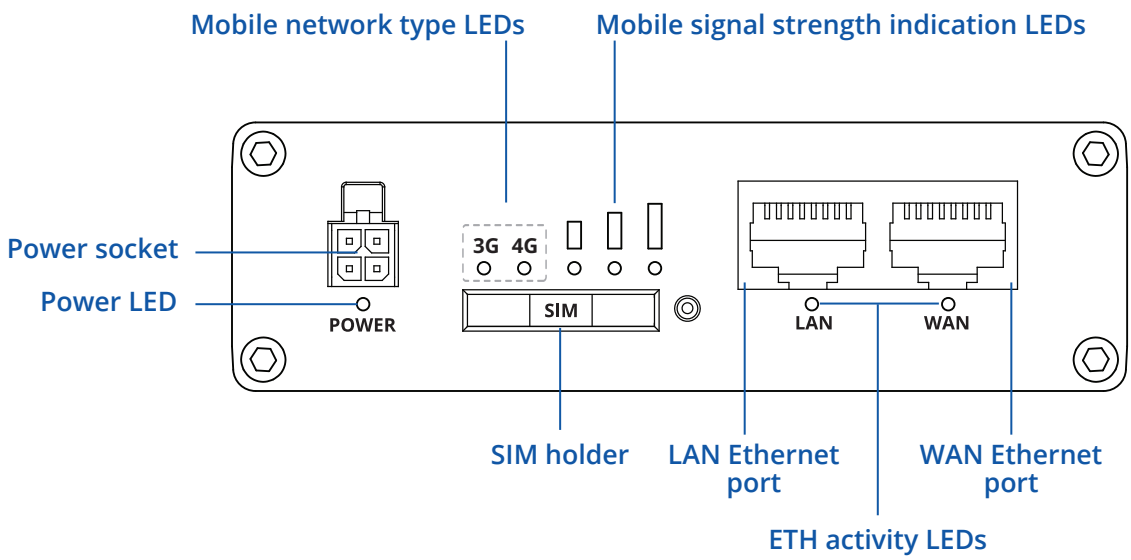
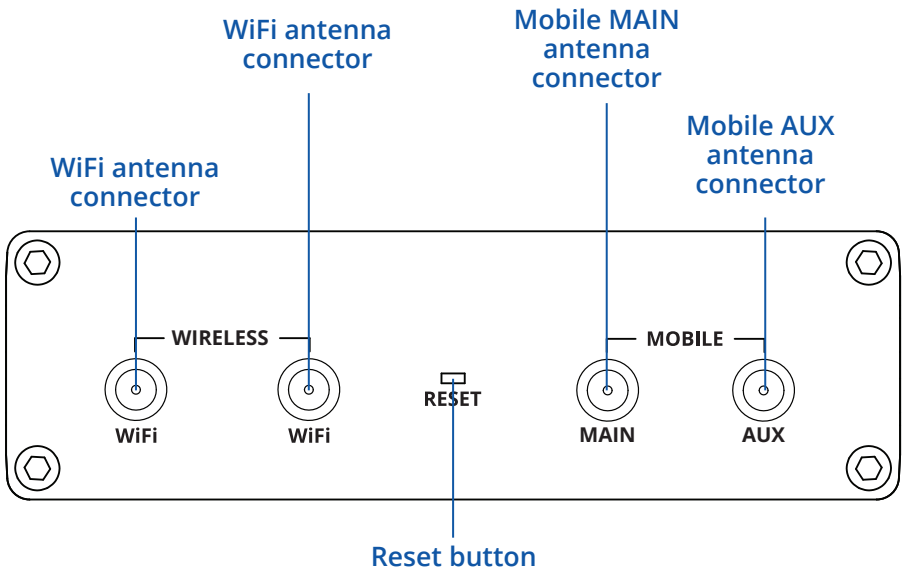
# HARDWARE

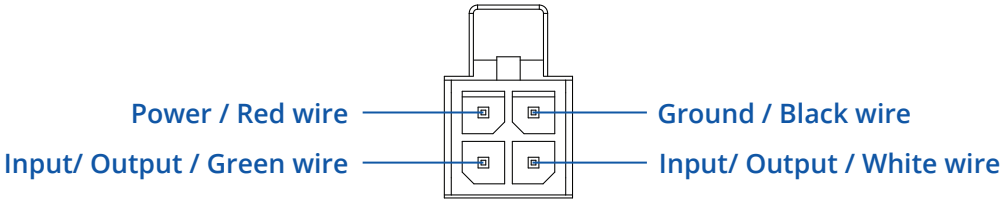
## FRONT VIEW




## BACK VIEW




## POWER SOCKET PINOUT




***I/O**: programmable Input/Output pins (Open Collector output max 30 V, 300 mA or Digital input where 0-6 V detected as logic low and 8-30 V - logic high).

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# FEATURES

## MOBILE

| | |
|---|---|
| Mobile module | 4G (LTE) – Cat 6 up to 300 Mbps, 3G – Up to 42 Mbps |
| Status | Signal strength (RSSI), SINR, RSRP, RSRQ, EC/IO, RSCP, Bytes sent/received, connected band, IMSI, ICCID, Carrier aggregation |
| 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 | 802.11 b/g/n, 2x2 MIMO, 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 50 simultaneous connections |
| Wireless Connectivity Features | Wireless mesh (802.11s), fast roaming (802.11r) |
| Wireless MAC filter | Whitelist, blacklist |
| Wireless QR code generator | Once scanned, a user will automatically enter your network without needing to input login information |

## ETHERNET

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

## 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, SNMP, 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 |
| Firewall status page | View all your Firewall statistics, rules, and rule counters |
| Ports management | View device ports, enable and disable each of them, turn auto-configuration on or off, change their transmission speed, and so on |
| Network topology | Visual representation of your network, showing which devices are connected to which other devices |
| 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 | VRRP, Wired options, each of which can be used as an automatic Failover, Wi-Fi WAN, Mobile |
| Load balancing | Balance Internet traffic over multiple WAN connections |
| 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 and option to upload and download customised hotspot themes |
| 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 SSH, Web interface, CLI and Telnet |

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## 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 |
| Tailscale | Tailscale offers speed, stability, and simplicity over traditional VPNs. Encrypted point-to-point connections using the open source WireGuard protocol |

## OPC UA

| | |
|---|---|
| Supported modes | Client, Server |
| Supported connection types | TCP |

## MODBUS

| | |
|---|---|
| Supported modes | Server, Client |
| Supported connection types | 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 |
| Data to server | Extract parameters from multiple sources and different protocols, and send them all to a single server |

## MODBUS MQTT GATEWAY

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

## DNP3

| | |
|---|---|
| Supported modes | Station, Outstation |
| Supported connection | TCP, USB |

## DLMS

| | |
|---|---|
| DLMS Support | DLMS - standard protocol for utility meter data exchange |

## 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) |

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## 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 serial NOR 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 CUSTOMISATION

| | |
|---|---|
| Operating system | RutOS (OpenWrt based Linux OS) |
| Supported languages | Busybox shell, Lua, C, C++ |
| Development tools | SDK package with build environment provided |
| Development tools | You can create your own custom, branded firmware and web page application by changing colours, logos, and other elements in our firmware to fit your or your clients' needs |

## INPUT / OUTPUT

| | |
|---|---|
| Input | 2 x Digital Input, 0 - 6 V detected as logic low, 8 - 30 V detected as logic high |
| Output | 2 x Digital Output, Open collector output, max output 30 V, 300 mA |
| 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, voltage surge/transient protection |
| PoE (passive) | Passive PoE can be installed upon request |
| Power consumption | Idle: < 2.4 W, Max: < 4.7 W |

## PHYSICAL INTERFACES

| | |
|---|---|
| Ethernet | 2 x RJ45 ports, 10/100 Mbps |
| I/O's | 2 x Digital Input, 2 x Digital Output on 4-pin power connector |
| Status LEDs | 2 x Mobile connection type, 3 x Mobile connection strength, 2 x Eth status, 1 x Power |
| SIM | 1 x SIM slot (Mini SIM - 2FF), 1.8 V/3 V, external SIM holder |
| Power | 1 x 4-pin power connector |
| Antennas | 2 x SMA for LTE, 2 x RP-SMA for Wi-Fi |
| Reset | Reboot/User default reset/Factory reset button |

## PHYSICAL SPECIFICATION

| | |
|---|---|
| Casing material | Aluminum housing |
| Dimensions (W x H x D) | 93.2 x 100 x 30 mm |
| Weight | 243 g |
| Mounting options | DIN rail, flat surface placement |

## OPERATING ENVIRONMENT

| | |
|---|---|
| Casing material | -40 °C to 75 °C |
| Dimensions (W x H x D) | 10% to 90% non-condensing |
| Weight | IP30 |

## REGULATORY & TYPE APPROVALS

| | |
|---|---|
| Regulatory | CE, UKCA, RCM, UCRF, EAC, WEEE, CB |

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# STANDARD PACKAGE*

- Router RUT361
- 18 W PSU
- 2x Mobile antennas (swivel, SMA male)
- 2x Wi-Fi antennas (swivel, RP-SMA male)
- Ethernet cable (1.5 m)
- SIM Adapter kit
- QSG (Quick Start Guide)
- Packaging box

| | | |
|---|---|---|
| ROUTER RUT361 | 18 W PSU | 2X MOBILE ANTENNAS (SWIVEL, SMA MALE) |
| 2X WI-FI ANTENNAS (SWIVEL, RP-SMA MALE) | ETHERNET CABLE (1.5 M) | SIM ADAPTER KIT |
| QSG | | |

* Standard package contents may differ based on standard order codes.

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# CLASSIFICATION CODES

HS Code: 851762
HTS: 8517.62.00

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

# AVAILABLE VERSIONS

| HARDWARE VERSION | SUPPORTED FREQUENCIES | STANDARD ORDER CODE / PACKAGE CONTAINS |
|---|---|---|
| RUT361 1*****<br>EMEA, Australia, Brazil | **4G (LTE-FDD):** B1, B3, B5, B7, B8, B20, B28, B321<br>**4G (LTE-TDD):** B38, B40, B41, B42[2], B43 [2]<br>**3G:** B1, B3, B5, B8 | RUT361100000 / Standard package with EU PSU |

The price and lead-times for region (operator) specific versions may vary. For more information please contact us.
1 LTE-FDD B32, B29 supports Rx only and is only for secondary component carrier.
2 B42, B43 bands are optional.

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# RUT361 SPATIAL MEASUREMENTS

## MAIN MEASUREMENTS

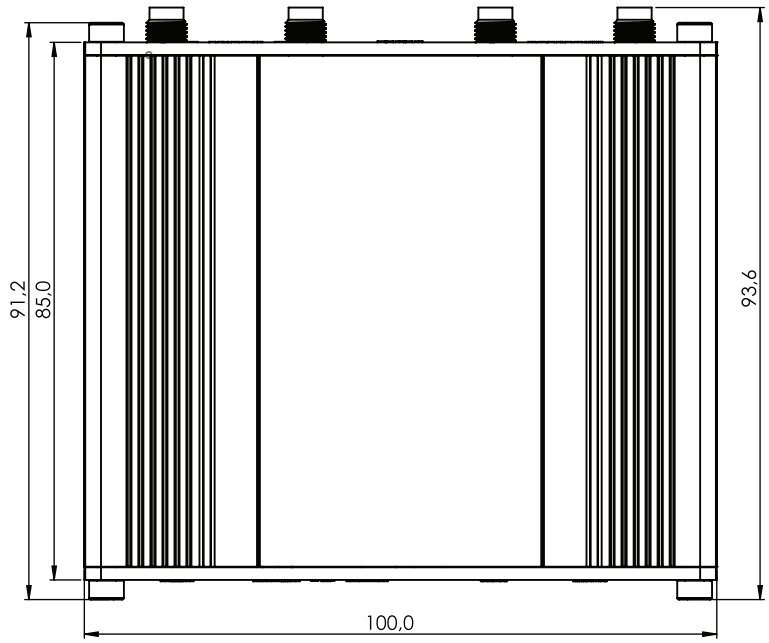
W x H x D dimensions for RUT361:

| | |
|---|---|
| Device housing*: | 93.2 x 100 x 30 mm |
| Box: | 173 x 71 x 148 mm |

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

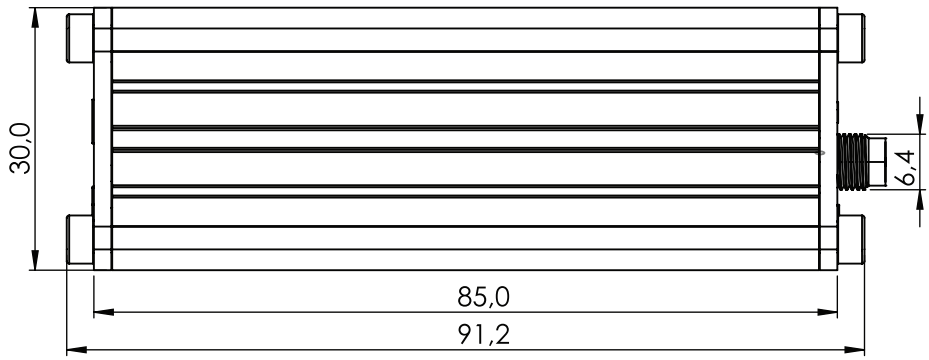
## TOP VIEW

The figure below depicts the measurements of RUT361 and its components as seen from the top:




## RIGHT VIEW

The figure below depicts the measurements of RUT361 and its components as seen from the right side:

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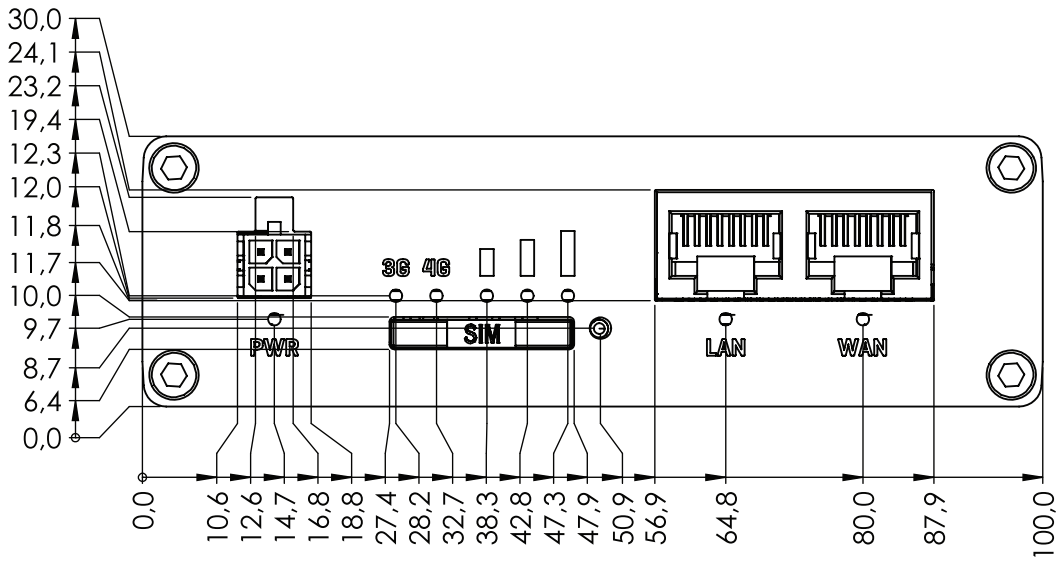
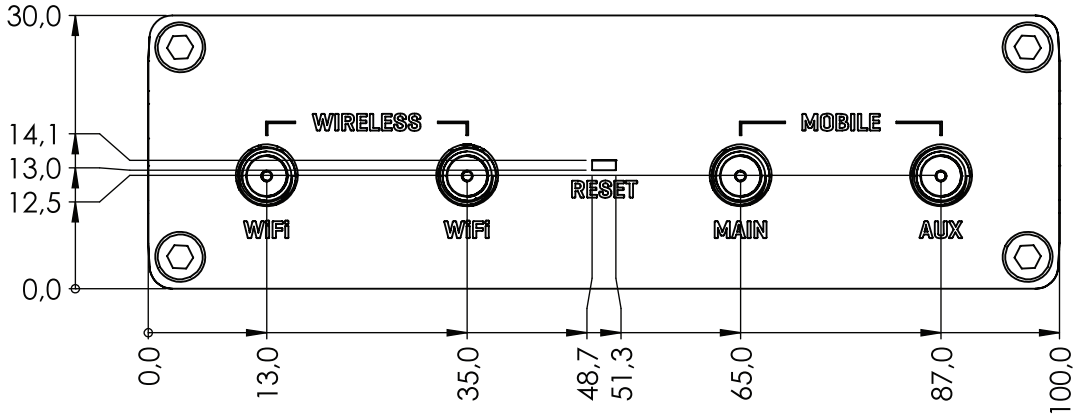
## FRONT VIEW

The figure below depicts the measurements of RUT361 and its components as seen from the front panel side:




## REAR VIEW

The figure below depicts the measurements of RUT361 and its components as seen from the back panel side:

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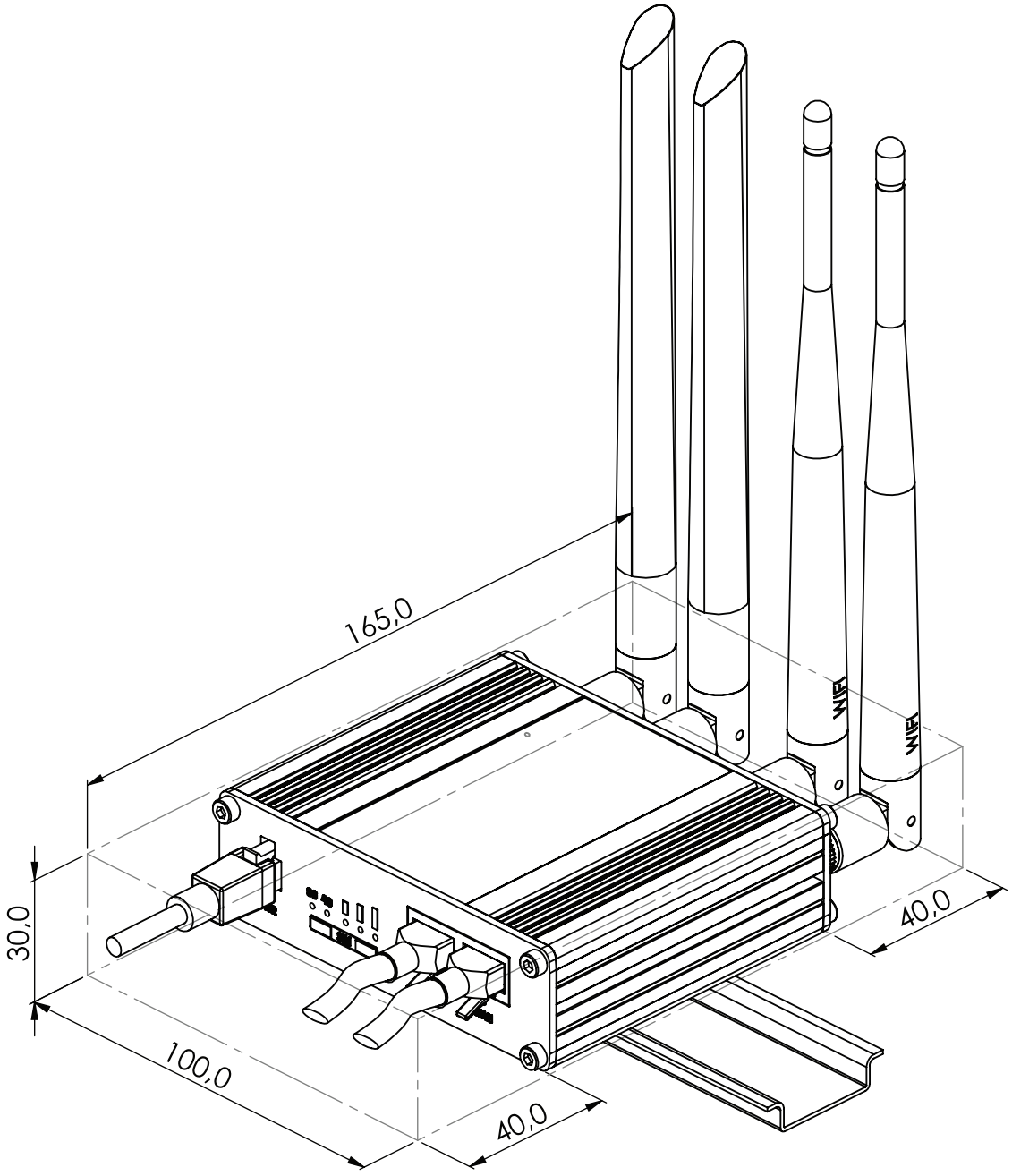
## MOUNTING SPACE REQUIREMENTS

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

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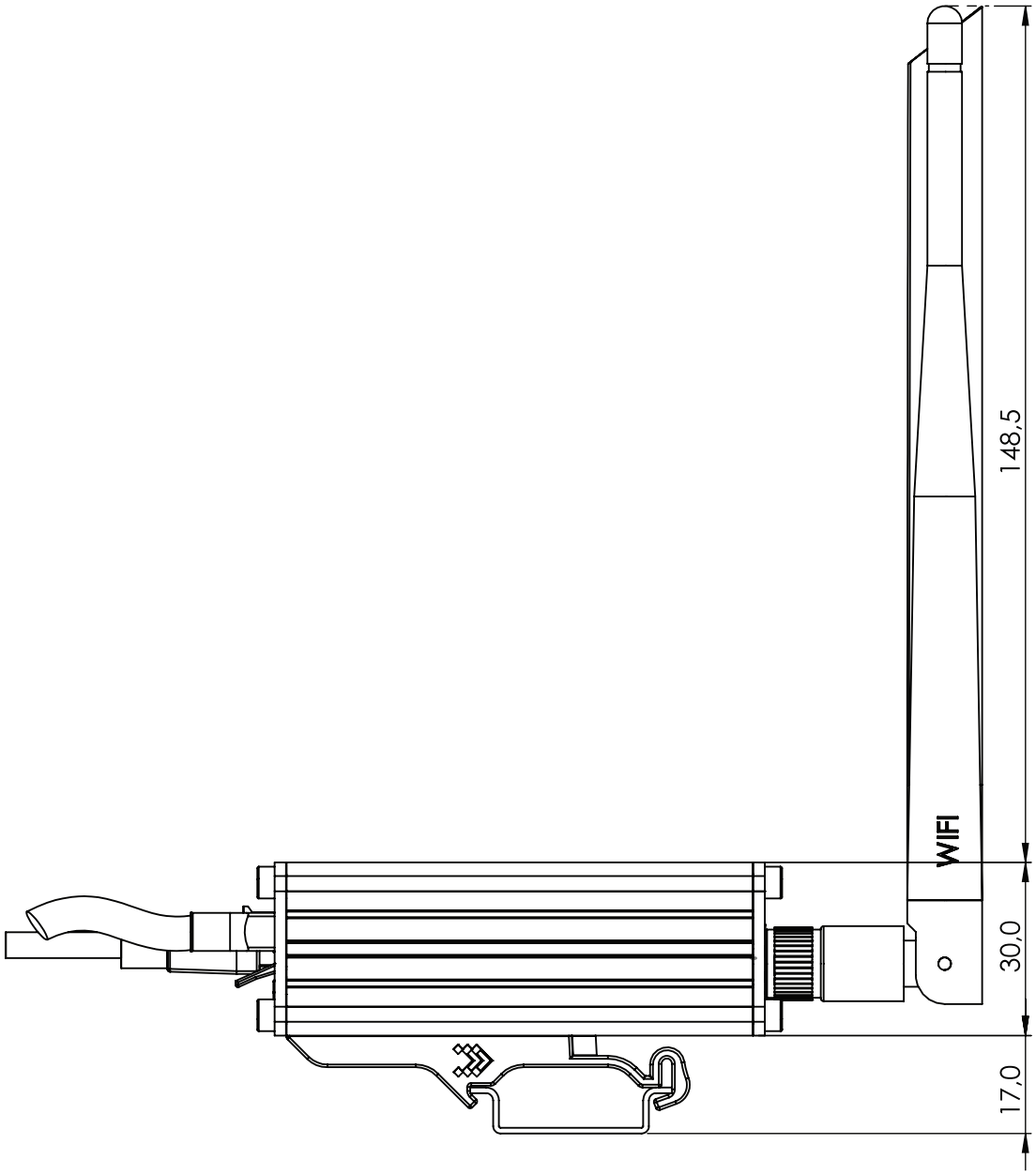
## DIN RAIL

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

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