

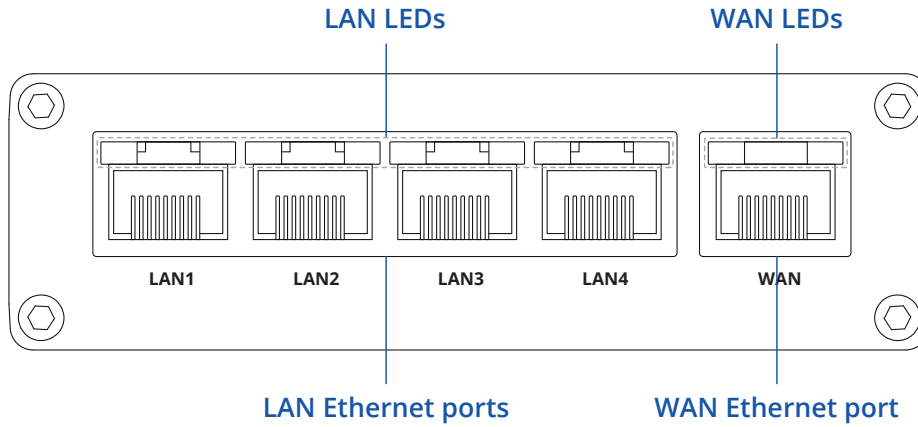


# RUT300

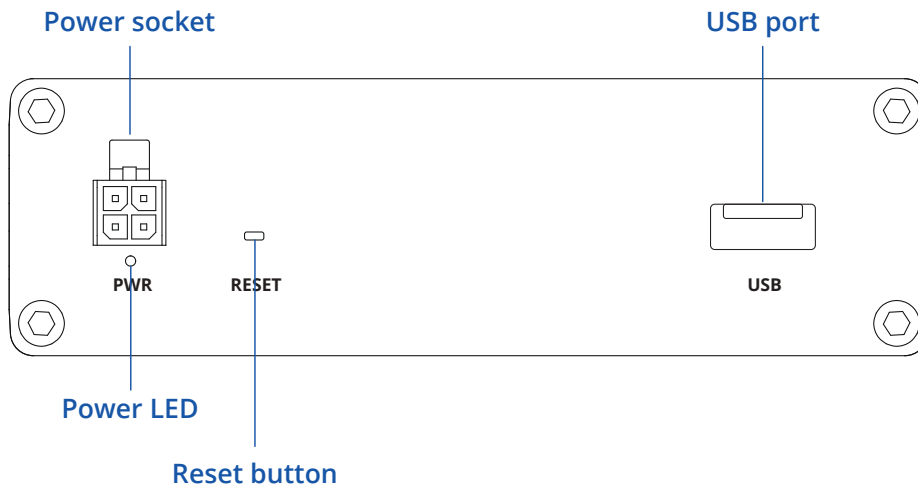


# HARDWARE

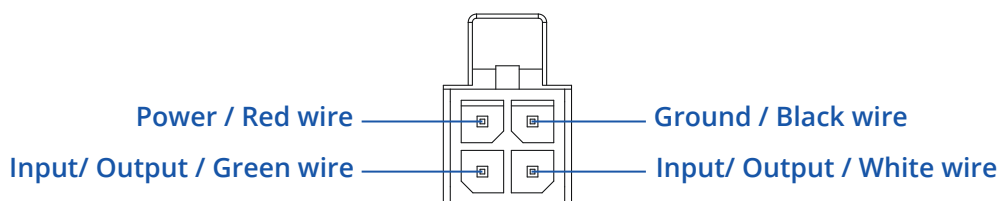
## FRONT VIEW



## BACK VIEW



## POWER SOCKET PINOUT



I/O (PIN 3 and 4): Configurable digital Input/Output pins. Open collector output, max output 30 V, 300 mA or Digital input where 0-6 V detected as logic low and 8-30 V - logic high

## FEATURES

### ETHERNET

WAN	1 x WAN port 10/100 Mbps, compliance IEEE 802.3, IEEE 802.3u standards, supports auto MDI/MDIX
LAN	4 x LAN ports, 10/100 Mbps, compliance with IEEE 802.3, IEEE 802.3u 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, 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	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
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

### 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 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)

### DATA TO SERVER

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

### MQTT GATEWAY

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

### DNP3

Supported modes	TCP Master, DNP3 Outstation
-----------------	-----------------------------

### 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)
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

Cloud of Things	Allows monitoring of: Device data, Mobile data, Network info, Availability
ThingWorx	Allows monitoring of: WAN Type, WAN IP
Cumulocity	Allows monitoring of: Device Model, Revision and Serial Number, WAN Type and IP
Azure IoT Hub	Can send device IP, Number of bytes send/received, Temperature, PIN count to Azure IoT Hub server

### SYSTEM CHARACTERISTICS

CPU	QCA9531, MIPS 24kc, 650 MHz
RAM	64 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 CUSTOMISATION

Operating system	RutOS (OpenWrt based Linux OS)
Supported languages	Busybox shell, Lua, C, C++
Development tools	SDK package with build environment provided

### 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	2 x Configurable digital Inputs. Digital input 0 - 5 V detected as logic low, 8 - 30 V detected as logic high
Output	2 x Configurable digital Outputs. Open collector output, max output 30 V, 300 mA
Events	Email, RMS
I/O juggler	Allows to set certain I/O conditions to initiate event

**POWER**

Connector	4-pin industrial DC power socket
Input voltage range	7 - 30 VDC, reverse polarity protection, voltage surge/transient protection
PoE (passive)	Passive PoE. 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 to power up through LAN port, not compatible with IEEE802.3af, 802.3at and 802.3bt standards
Power consumption	Idle: 1.3 W, Max: 3 W

**PHYSICAL INTERFACES**

Ethernet	5 x RJ45 ports, 10/100 Mbps
I/Os	2 x Configurable I/O pins on 4-pin power connector
Status LEDs	5 x ETH status, 1 x Power
Power	1 x 4-pin power connector
USB	1 x USB A port for external devices
Reset	Reboot/User default reset/Factory reset button

**PHYSICAL SPECIFICATION**

Casing material	Aluminum housing
Dimensions (W x H x D)	100 x 30 x 85 mm
Weight	229 g
Mounting options	DIN rail, 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/RED, UKCA, CB, UCRF, RoHS, REACH, CITC, ANRT, RCM, ETA-WPC, KC, FCC, IC, NOM
------------	---

## WHAT'S IN THE BOX?

### STANDARD PACKAGE CONTAINS\*

- Router RUT300
- 9 W PSU
- Ethernet cable (1.5 m)
- QSG (Quick Start Guide)
- Packaging box

 <p><b>ROUTER RUT300</b></p>	 <p><b>9 W PSU</b></p>	 <p><b>ETHERNET CABLE (1.5 M)</b></p>
 <p><b>QSG</b></p>		

\* 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
RUT300 000000	851762	8517.62.00	Standard package with EU PSU
RUT300 000100	851762	8517.62.00	Standard package with US PSU
RUT300 000200	851762	8517.62.00	Standard package with UK PSU
RUT300 000300	851762	8517.62.00	Standard package with AU PSU

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

# RUT300 SPATIAL MEASUREMENTS & WEIGHT

## MAIN MEASUREMENTS

W x H x D dimensions for RUT300:

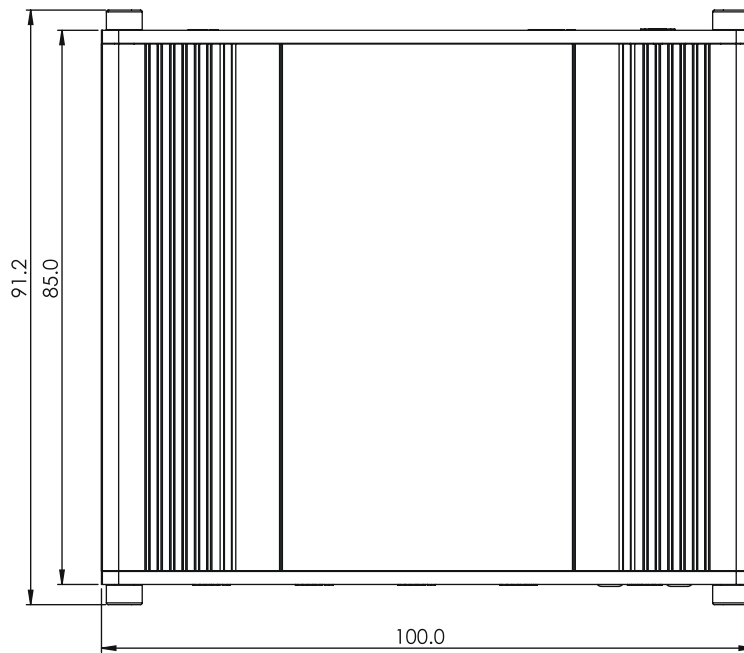
Device housing\*: 100 x 30 x 85 mm

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.

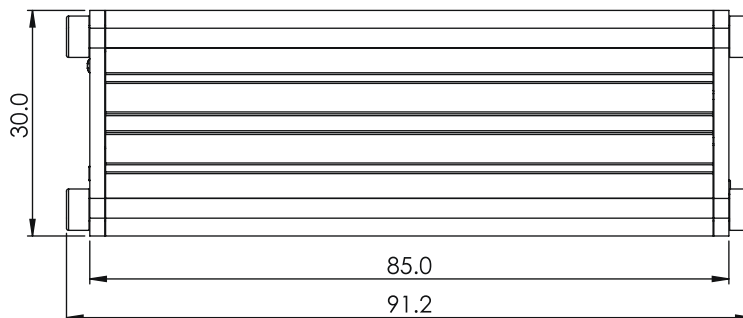
## TOP VIEW

The figure below depicts the measurements of RUT300 and its components as seen from the top:



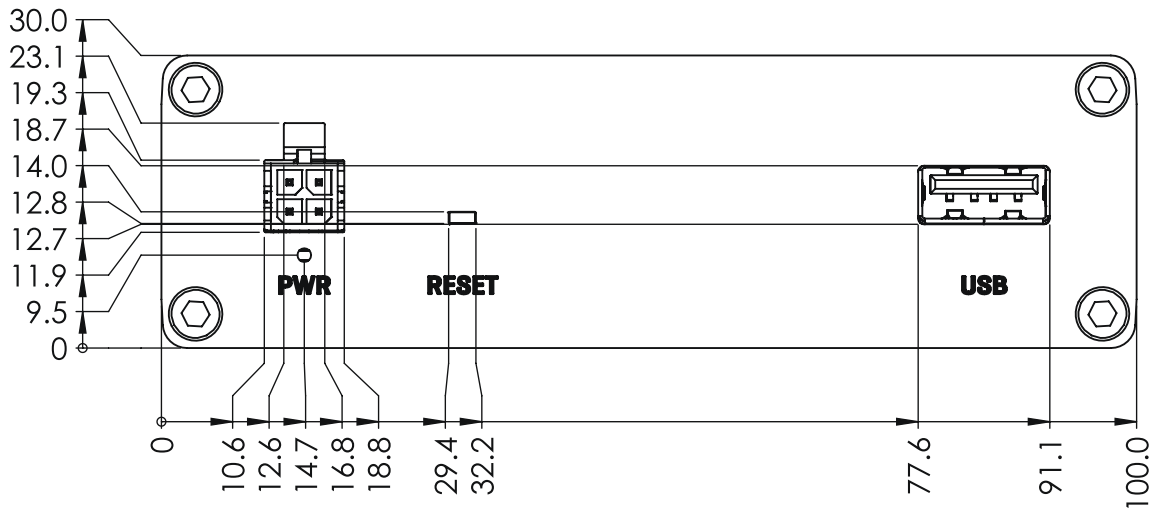
## RIGHT VIEW

The figure below depicts the measurements of RUT300 and its components as seen from the right side:



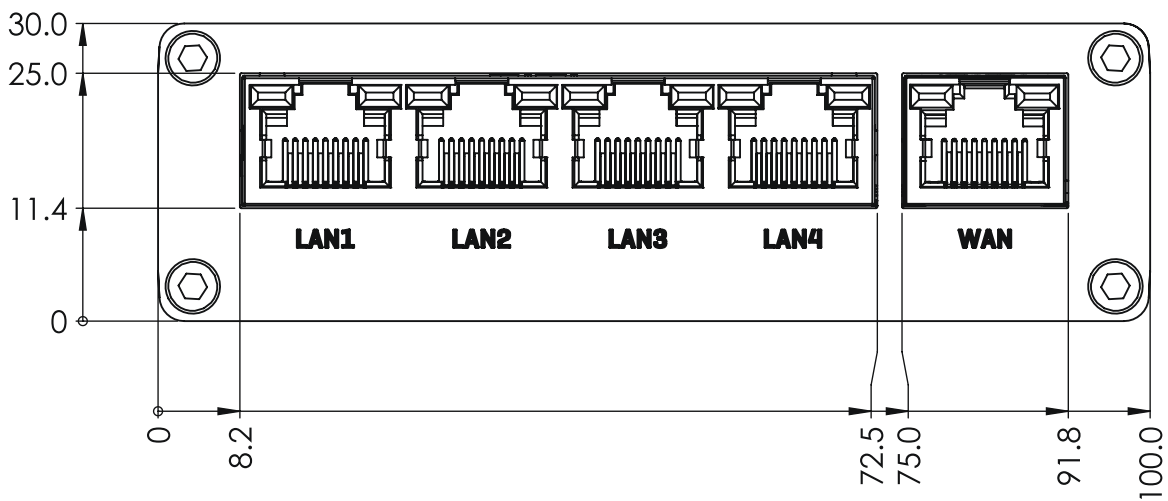
**FRONT VIEW**

The figure below depicts the measurements of RUT300 and its components as seen from the front panel side:



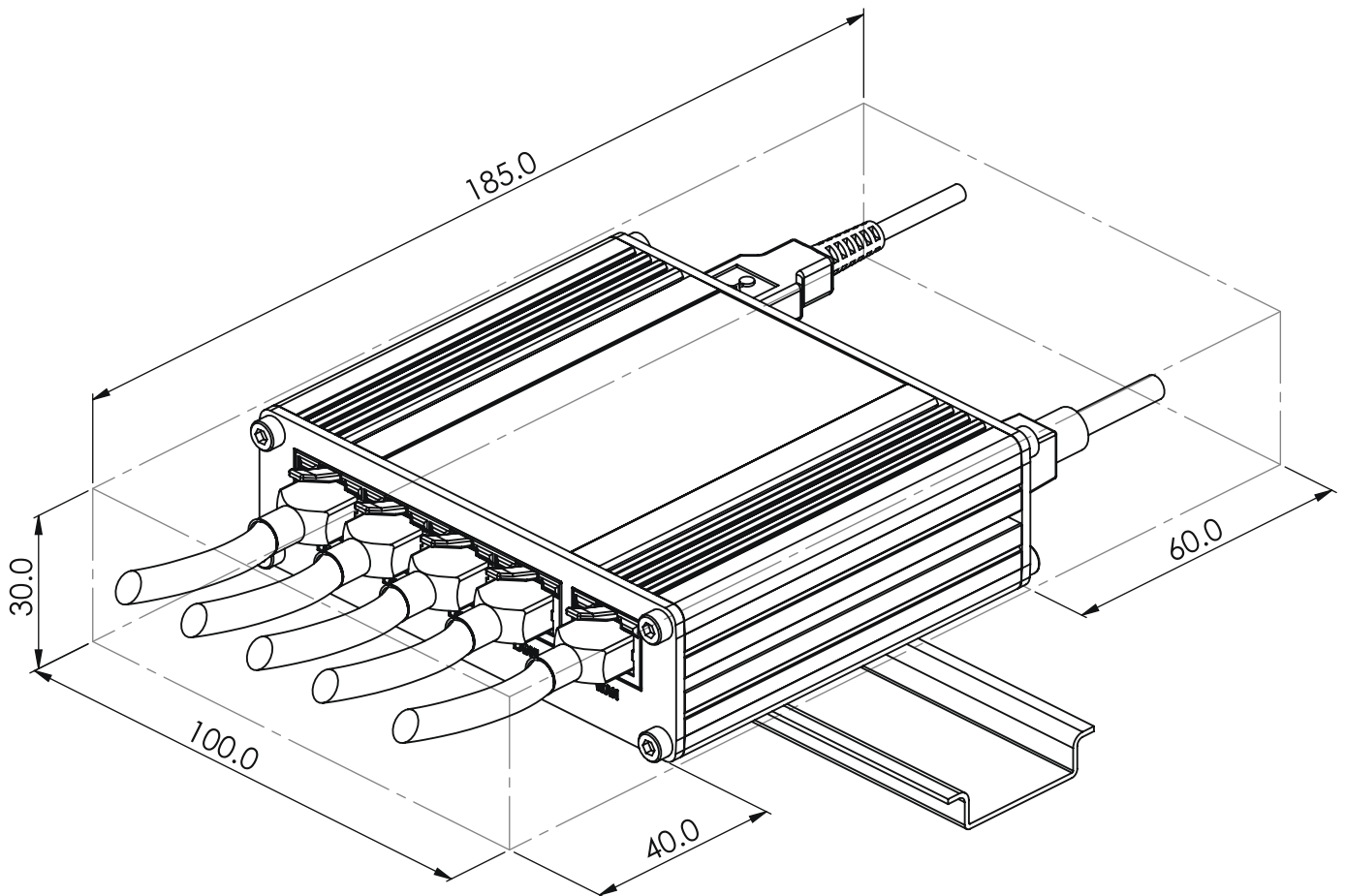
**REAR VIEW**

The figure below depicts the measurements of RUT300 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:

