



RUT301

INDUSTRIAL ETHERNET ROUTER



Industrial &
automation



Energy &
utilities



Enterprise



Retail



Smart city

INTERFACES

5 x Ethernet ports (10/100 Mbps), Digital I/Os, and USB 2.0

RMS

For remote management, access & VPN services

SECURITY SUITE

Pre-configured firewall and multiple VPN services

DURABLE

Industrial-grade design for withstanding harsh environments

Ethernet

WAN	1 x WAN port 10/100 Mbps, compliance IEEE 802.3, IEEE 802.3u, 802.3az standards, supports auto MDI/MDIX
LAN	4 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), VXLAN
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, TTL target customisation
Firewall status page	View all your Firewall statistics, rules, and rule counters
Port 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, DHCP server configuration, status, static leases: MAC with wildcards
QoS / Smart Queue Management (SQM)	Traffic priority queuing by source/destination, service, protocol or port, WMM, 802.11e
DDNS	Supported >77 service providers, others can be configured manually
DNS over HTTPS	DNS over HTTPS proxy enables secure DNS resolution by routing DNS queries over HTTPS
Network backup	VRRP, Wired options, each of which can be used as an automatic Failover
Load balancing	Balance Internet traffic over multiple WAN connections
Hotspot	Captive portal (hotspot), internal/external Radius server, Radius MAC authentication, SMS authorisation, SSO authentication, internal/external landing page, walled garden, user scripts, URL parameters, user groups, individual user or group limitations, user management, 9 default customisable themes and optionality to upload and download customised hotspot themes
SSHFS	Possibility to mount remote file system via SSH protocol
Traffic Management	Real-time monitoring, wireless signal charts, traffic usage history

Security

Authentication	Pre-shared key, digital certificates, X.509 certificates, TACACS+, Internal & External RADIUS users authentication, IP & login attempts block, time-based login blocking, built-in random password generator
Firewall	Preconfigured firewall rules can be enabled via WebUI, unlimited firewall configuration via CLI, DMZ, NAT, NAT-T, NAT64
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	Block list for blocking out unwanted websites, allow list for specifying allowed sites only
Access control	Flexible access control of SSH, Web interface, CLI and Telnet
Certificate Manager	Certificate creation tool allows to create CA, server, client, let's encrypt, SCEP certificates
802.1x	Port-based network access control server

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	XFRM, 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, Phase 2 and Phase 3 and Dual Hub support
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.

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 Client 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; Custom LUA scripting, allowing scripts to utilize the router's Data to server feature

BacNET

Supported modes	Router
Supported connection types	IP, RTU (USB)
Configuration options	Support for multiple BACnet/IP interfaces, Network number assignment, Preconfigured BDT entries for BBMD (BACnet Broadcast Management Device)

MQTT Gateway

Modbus MQTT Gateway	Allows sending commands and receiving data from MODBUS Server through MQTT broker
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DNP3

Supported modes	Station, Outstation
Supported connection	TCP, USB

DLMS/COSEM

DLMS Support	DLMS - standard protocol for utility meter data exchange
Supported modes	Client
Supported connection types	TCP, USB

API

Teltonika Networks Web API (beta) support	Expand your device's possibilities by using a set of configurable API endpoints to retrieve or change data. For more information, please refer to this documentation: https://developers.teltonika-networks.com
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Monitoring & Management

WEB UI	HTTP/HTTPS, status, configuration, FW update, CLI, troubleshoot, multiple event log servers, firmware update availability notifications, event log, system log, kernel log, Internet status
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, Brute force protection
JSON-RPC	Management API over HTTP/HTTPS
RMS	Teltonika Remote Management System (RMS)

IoT Platforms

Cumulocity - Cloud of Things	Allows monitoring of: Device Model, Revision and Serial Number, WAN Type and IP. Has reboot and firmware upgrade actions
Azure IoT Hub	Can be configured with Data to Server to send all the available parameters to the cloud. Has Direct method support which allows to execute RutOS API calls on the IoT Hub. Also has Plug and Play integration with Device Provisioning Service that allows zero-touch device provisioning to IoT Hubs

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
Factory settings reset	A full factory reset restores all system settings, including the IP address, PIN, and user data to the default manufacturer's 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
GPL customization	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
Package Manager	The Package Manager is a service used to install additional software on the device

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	Up to 2 x Configurable digital Inputs (shared), 0 - 6 V detected as logic low, 8 - 30 V detected as logic high
Output	Up to 2 x Configurable digital Outputs (shared), 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	9 - 30 VDC, reverse polarity protection, voltage surge/transient protection
PoE (passive)	Passive PoE (Optional - different hardware required; contact your sales manager)
Power consumption	Idle: < 0.8 W, Max: < 3.8 W

Physical Interfaces

Ethernet	5 x RJ45 ports, 10/100 Mbps
I/O's	2 x Configurable digital I/O on 4-pin power connector
Status LEDs	1 x WAN type LED, 4 x LAN status LEDs, 1 x Power LED
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	Anodised aluminium housing and panels
Dimensions (W x H x D)	100 x 30 x 85 mm
Weight	233 g
Mounting options	DIN rail, wall mount, flat surface (all require additional kit)

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, FCC, RCM, UKCA, IC(ISED), RoHS, CB Scheme, REACH, NOM, Kenya, ICASA, ANRT, Giteki
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EMC Emissions & Immunity

Standards	EN 55032: 2015+A11:2020+A1:2020 EN 61000-3-3: 2013+ A1:2019+A2:2021 EN IEC 61000-3-2: 2019+A1:2021 EN 55035: 2017+A11:2020
ESD	EN 61000-4-2:2009
Radiated Immunity	EN IEC 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 61000-4-6:2014
DIP	EN IEC 61000-4-11:2020

Safety

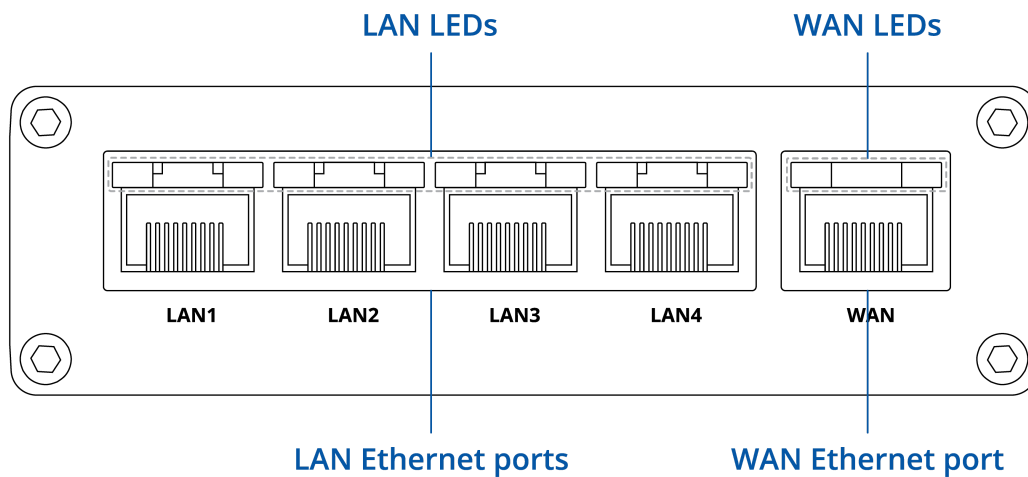
Standards	RCM: AS/NZS 62368.1:2018 CB: IEC 62368-1:2018
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Safety (Ordinary Locations)

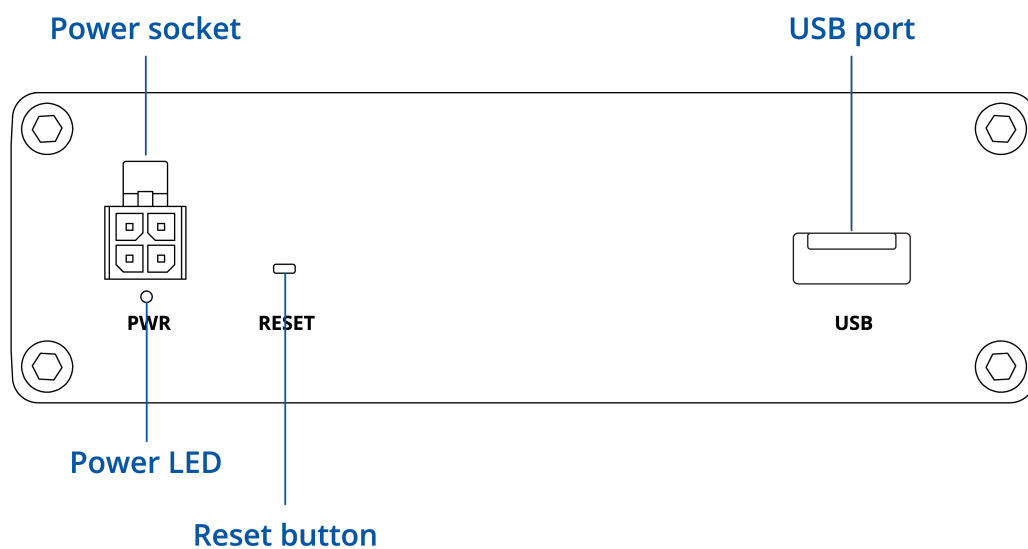
Standards	CB: IEC 62368-1:2018 UL/CSA Safety:
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Hardware

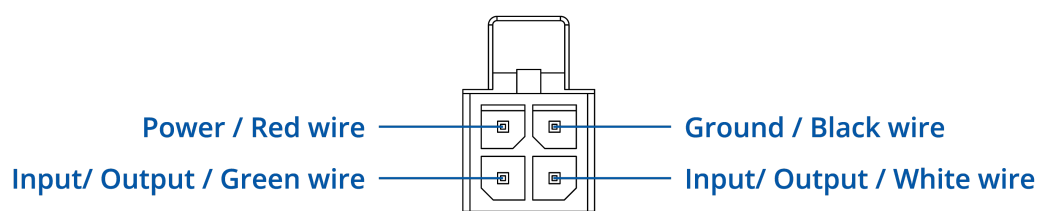
FRONT VIEW



BACK VIEW



POWER SOCKET PINOUT



Ordering

Standard package*



RUT301



QUICK START GUIDE



9W PSU



ETHERNET CABLE 1.5 M

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

For more information on all available packaging options – please [contact us](#) directly.

Classification codes

HS Code: 851762

HTS: 8517.62.00

For more information on all available packaging options – please [contact us](#) directly.

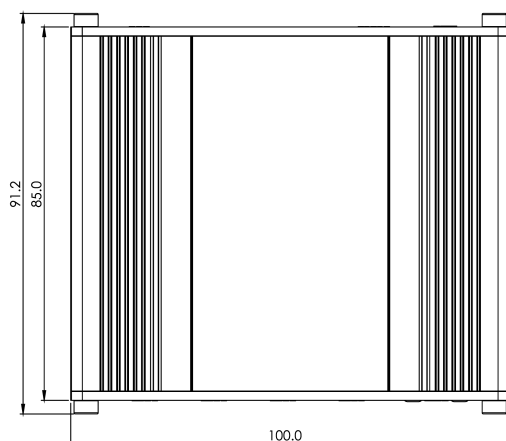
Available versions

Hardware version	Supported frequencies	Standard order code / Package Contains
RUT301 *****	N/A	RUT301000000 / Standard package with EU PSU RUT301000400 / Standard package with JP PSU RUT301000500 / Standard package with AU PSU RUT301000600 / Standard package with Universal PSU RUT301000700 / Standard package with US PSU RUT301000800 / Standard package with UK PSU RUT301000300 / Standard package with power cable (4-way screw terminal) RUT301000100 / Mass packing code

For more information on all available packaging options – please [contact us](#) directly.

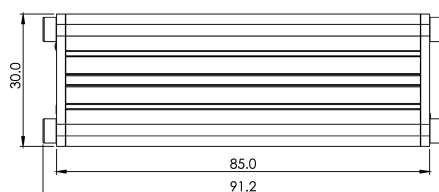
TOP VIEW

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



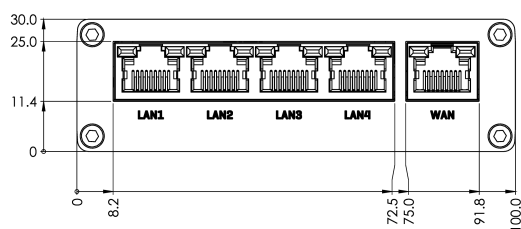
RIGHT VIEW

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



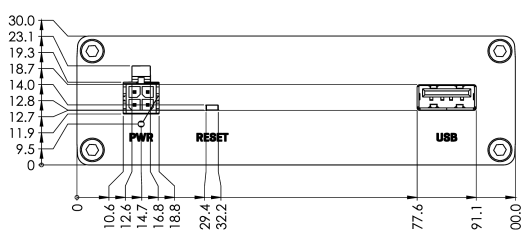
FRONT VIEW

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



REAR VIEW

The figure below depicts the measurements of device 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:

