

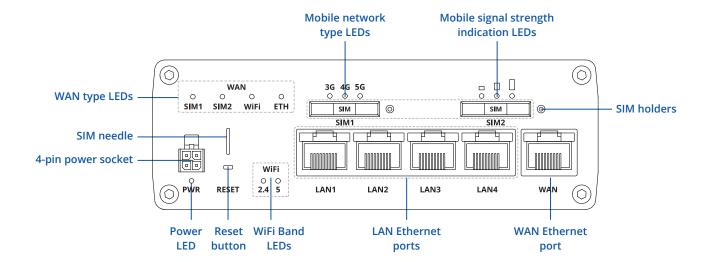
RUTX50



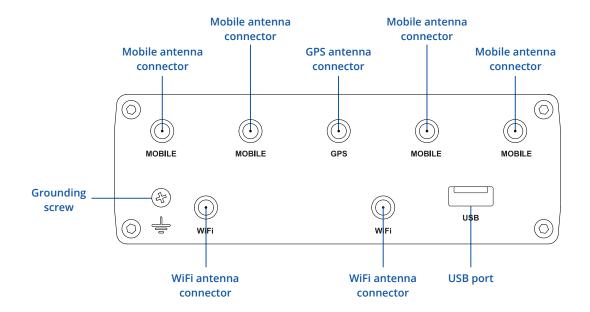


HARDWARE

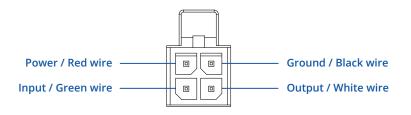
FRONT VIEW



BACK VIEW



POWER SOCKET PINOUT





FEATURES

MOBILE

Mobile module	5G Sub-6Ghz SA/NSA 2.1/3.3Gbps DL (4x4 MIMO), 900/600 Mbps UL (2x2); 4G (LTE) – LTE Cat 20 2.0Gbps DL, 200Mbps UL; 3G – 42 Mbps DL, 5.76Mbps UL
Status	Signal strength (RSSI), SINR, RSRP, RSRQ, EC/IO, RSCP Bytes sent/received, connected band, IMSI, ICCID.
SMS/Call	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, Call utilities
USSD	Supports sending and reading Unstructured Supplementary Service Data messages
Black/White list	Operator black/white list
Band management	Band lock, Used band status display
APN	Auto APN
Bridge	Direct connection (bridge) between mobile ISP and device on LAN
Passthrough	Gateway assigns its mobile WAN IP address to another device on LAN
Multiple PDN	Possibility to use different PDNs for multiple network access and services
WIRELESS	
Wireless mode	802.11b/g/n/ac Wave 2 (WiFi 5) with data transmission rates of up to 867 Mbps (Dual Band, MU-MIMO), 802.11r fast transition 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
WiFi users	Up to 150 simultaneous connections
Wireless Hotspot	Captive portal (Hotspot), internal/external Radius server, built in customizable landing page
Wireless mesh/ roaming	Wireless mesh (802.11s), fast roaming (802.11r)
ETHERNET	
WAN	1 x WAN port (can be configured as LAN) 10/100/1000 Mbps, compliance with IEEE 802.3, IEEE 802.3u, 802.3az standards, supports auto MDI/MDIX crossover
LAN	4 x RJ45 port, 10/100/1000 Mbps, supports auto MDI/MDIX crossover
NETWORK	
Network protocols	TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, HTTPS, SMTP, SSL v3, TLS, PPP, PPPoE, SSH, DHCP, SNMP, MQTT, Wake on LAN (WOL)
Routing	Static routing, Dynamic routing (BGP, OSPF v2, RIP v1/v2, EIGRP, NHRP)
Connection monitoring	Ping Reboot, Wget Reboot, Periodic Reboot, LCP and ICMP for link inspection
Firewall	Port forwards, traffic rules, custom rules
DHCP	Static and dynamic IP allocation
DDNS	Supported >25 service providers, others can be configured manually
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 the WebUl, unlimited firewall configuration via CLI; 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	Set up custom data limits for SIM card
WEB filter	Blacklist for blocking out unwanted websites, Whitelist for specifying allowed sites only



VFIN	
OpenVPN	Multiple clients and a
	DEC CDC DC3 CDC D

a server can run simultaneously, 12 encryption methods 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, OpenVPN Encryption AES-192-CBC, AES-256-CBC

IPsec IKEv1, IKEv2, supports up to 5 x VPN IPsec tunnels (instances), with 5 encryption methods (DES, 3DES, AES128, AES192, AES256)

GRE

PPTP, L2TP Client/Server services can run simultaneously, L2TPv3 support

SSTP SSTP client instance 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

WireGuard VPN client and server support ZeroTier ZeroTier VPN

MODBUS TCP SLAVE

WireGuard

VDN

ID filtering Respond to one ID in range [1;255] or any Allow remote access Allow access through WAN

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

Custom registers

Supported functions 01, 02, 03, 04, 05, 06, 15, 16 8 bit: INT, UINT; 16 bit: INT, UINT (MSB or LSB first); 32 bit: float, INT, UINT (ABCD (big-endian), DCBA (little-endian), CDAB, Supported data formats BADC), HEX, ASCII

MQTT GATEWAY

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

DNP3

Supported modes TCP Master, DNP3 Outstation

DATA TO SERVER

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

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
	Can send device IP, Number of bytes send/received, Mobile connection state, Network link state, IMEI, ICCID, Model, Manufac-

Azure IoT Hub turer, 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

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)



CI	CTENA	CHAR	RACTER	ICTICS
~	YSIFIVI	(HAF	(AL IFR	18110.8

CPU	Quad-core ARM Cortex A7, 717 MHz
RAM	256 MB (100 MB available for userspace)
FLASH storage	256 MB (80 MB available for userspace)

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
Keen settings	Undate FW without losing current configuration

FIRMWARE CUSTOMIZATION

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

LOCATION TRACKING

GNSS	GPS, GLONASS, BeiDou, Galileo
Coordinates	GNSS coordinates via WebUI, SMS, TAVL, RMS
NMEA	NMEA 0183
Server software	Supports server software: TAVL, RMS
Geofencing	Multiple configurable geofence zones

USB

Data rate	USB 2.0
Applications	Samba share, USB-to-serial, Modbus gateway
External devices	Possibility to connect external HDD, flash drive, additional modem, printer
Storage formats	FAT, FAT32, NTFS

INPUT/OUTPUT

Input	1 x Digital Input, 0 - 6 V detected as logic low, 8 - 30 V detected as logic high
Output	1 x Digital Output, Open collector output, max output 30 V, 300 mA
Events	SMS, Email, RMS
I/O juggler	Allows setting certain I/O conditions to initiate event

POWER

Connector	4-pin industrial DC power socket
Input voltage range	9 – 50 VDC, reverse polarity protection, surge protection >51 VDC 10us max
PoE (passive)	Passive PoE. Possibility to power up through LAN1 port , not compatible with IEEE802.3af, 802.3at and 802.3bt standards
Power consumption	Idle: <4 W Max: <18 W

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

Ethernet	5 x RJ45 ports, 10/100/1000 Mbps		
I/Os	1 x Digital Input, 1 x Digital Output on 4-pin power connector		
Status LEDs	3×2 x connection status LEDs, 3×2 connection strength LEDs, 10×2 Ethernet port status LEDs, 4×2 WAN status LEDs, 1×2 x 2.4G and 1×2 WAN status LEDs, 1×2 x 2.4G and 1×2 WAN status LEDs, 1×2 Y Power LED, 1×2 Y Power LEDs, $1 $		
SIM	2 x SIM slot (Mini SIM – 2FF), 1.8 V/3 V		
Power	1 x 4-pin DC power connector		
Antennas	4 x SMA for Mobile, 2 x RP-SMA for WiFi, 1 x SMA for GNSS		
USB	1 x USB A port for external devices		
Reset	Reboot/User default reset/Factory reset button		
Grounding	1 x Grounding screw		



PHYSICAL SPECIFICATION

Casing material	Aluminum housing
Dimensions (W x H x D)	132 x 44.2 x 95.1 mm
Weight	533 g
Mounting options	DIN rail (can be mounted on two sides), flat surface placement

OPERATING ENVIRONMENT

Operating temperature	-40 °C to 75 °C
Operating humidity	10 % to 90 % non-condensing
Ingress Protection Rating	IP30



WHAT'S IN THE BOX?

STANDARD PACKAGE CONTAINS*

- RUTX50 Router
- 18 W PSU
- 4 x Mobile antennas (swivel, SMA male)
- 2 x WiFi antennas (magnetic mount, RP-SMA male, 1.5 m cable)
- 1 x GNSS antenna (adhesive, SMA male, 3 m cable)
- Ethernet cable (1.5 m)
- SIM Adapter kit
- QSG (Quick Start Guide)
- Packaging box





RUTX50 ROUTER



18 W PSU



4 X MOBILE ANTENNAS (SWIVEL, SMA MALE)



2 X WIFI ANTENNAS (MAGNETIC MOUNT, RP-SMA MALE, 1.5 M CABLE)



1 X GNSS ANTENNA (ADHESIVE, SMA MALE, 3 M CABLE)



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	HS CODE	HTS CODE	PACKAGE CONTAINS
RUTX50 000000	851762	8517.62.00	Standard package

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

AVAILABLE VERSIONS

PRODUCT CODE	REGION (OPERATOR)	FREQUENCY
RUTX50 0****	Europe¹, the Middle East, Africa, Oceania, Brazil	 5G NR NSA: n1, n3, n5, n7, n8, n20, n28, n38, n40, n41, n77, n78 5G NR SA: n1, n3, n5, n7, n8, n20, n28, n38, n40, n41, n77, n78 4G (LTE-FDD): B1, B3, B5, B7, B8, B20, B28 4G (LTE-TDD): B38, B40, B41, B42, B43 3G: B1, B5, B8

The price and lead-times for region (operator) specific versions may vary. For more information please contact us. 1 - Regional availability - excluding Russia & Belarus.



MOUNTING OPTIONS

DIN RAIL KIT

Parameter	Value
Mounting standard	35mm DIN Rail
Material	Low carbon steel
Weight	57g
Screws included	Philips Pan Head screw #6-32×3/16, 2pcs
Dimensions	82 mm x 46 mm x 20 mm
RoHS Compliant	V

DIN RAIL KIT

- DIN Rail adapter
- Philips Pan Head screw #6-32×3/16, 2pcs for RUT2xx/RUT9xx



ORDER CODE	HS CODE	HTS CODE
PR5MEC00	73269098	7326.90.98

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

COMPACT DIN RAIL KIT

Parameter	Value
Mounting standard	35mm DIN Rail
Material	ABS + PC plastic
Weight	6.5 g
Screws included	Philips Pan Head screw #6-32×3/16, 2pcs
Dimensions	70 mm x 25 mm x 14,5 mm
RoHS Compliant	V

DIN RAIL KIT

- Compact plastic DIN Rail adapter (70x25x14,5mm)
- Philips Pan Head screw #6-32×3/16, 2pcs

ORDER CODE	HS CODE	HTS CODE
PR5MEC11	73269098	7326.90.98

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

SURFACE MOUNTING KIT

Parameter	Value
Mounting standard	Flat surface mount
Material	ABS + PC plastic
Weight	2x5 g
Screws included	Philips Pan Head screw #6-32×3/16, 2pcs
Dimensions	25 mm x 48 mm x 7.5 mm
RoHS Compliant	V

DIN RAIL KIT

- Surface mounting kit
- Philips Pan Head screw #6-32×3/16, 2pcs

ORDER CODE	HS CODE	HTS CODE
PR5MEC12	73269098	7326.90.98

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





RUTX50 SPATIAL MEASUREMENTS & WEIGHT

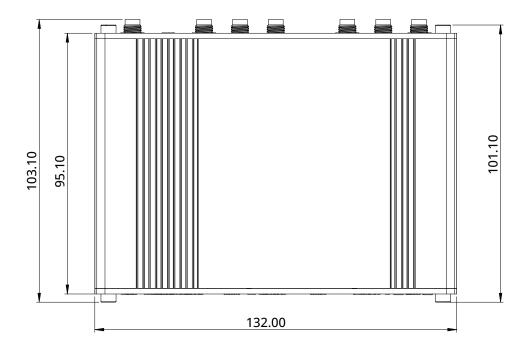
MAIN MEASUREMENTS

W x H x D dimensions for RUTX50:

Device housing*: 132 x 44.2 x 95.1 Box: 355 x 60 x 175

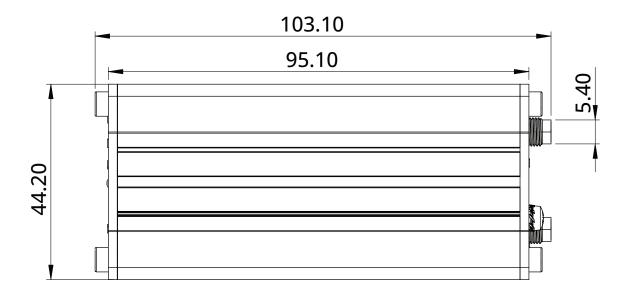
TOP VIEW

The figure below depicts the measurements of RUTX50 and its components as seen from the top:



RIGHT VIEW

The figure below depicts the measurements of RUTX50 and its components as seen from the right side:

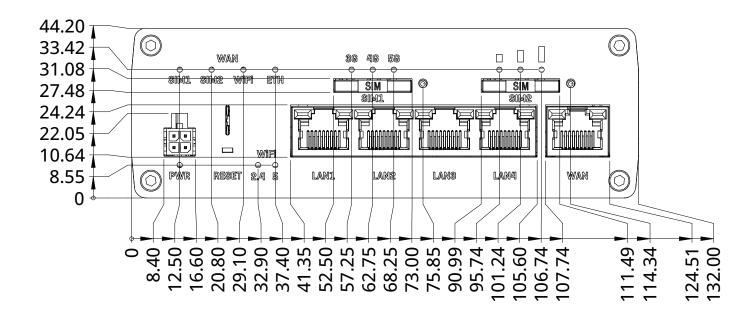


^{*}Housing measurements are presented without antenna connectors and screws; for measurements of other device elements look to the sections below.



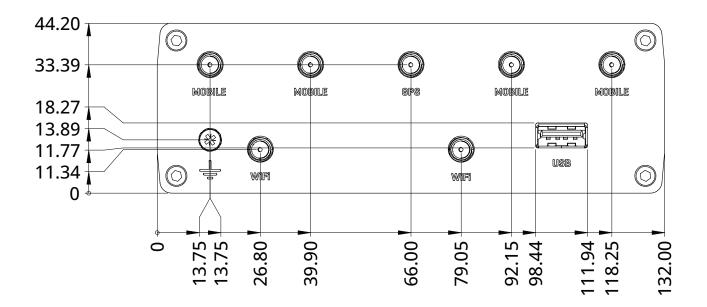
FRONT VIEW

The figure below depicts the measurements of RUTX50 and its components as seen from the front panel side:



REAR VIEW

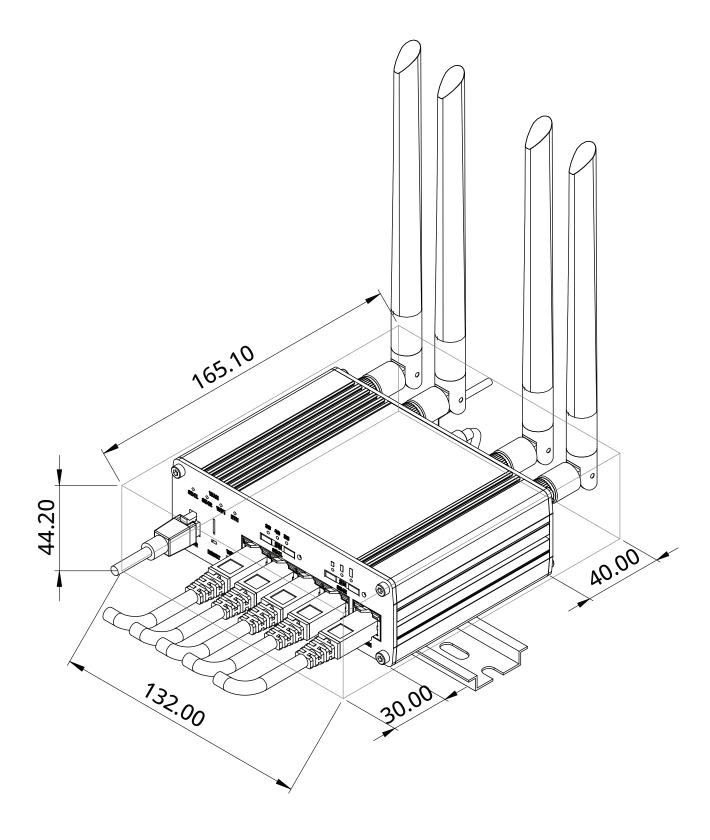
The figure below depicts the measurements of RUTX50 and its components as seen from the back panel side:





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:

