SPECIFICATIONS

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

TRB500 Industrial 5G Gateway

Ethernet

WAN	1 x WAN port (can be confifigured as LAN) 10/100/1000 Mbps, compliance with IEEE 802.3, IEEE 802.3u, 802.3az standards, 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

Security

Authentication	Pre-shared key, digital certificates, X.509 certificates
Firewall	Pre-configured firewall rules can be enabled via the WebUI, 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

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, supports up to 5 x VPN IPsec tunnels (instances), with 5 encryption methods (DES, 3DES, AES128, AES192, AES256)
GRE	GRE tunnel
PPTP, L2TP	Client/Server services can run simultaneously, L2TPv3 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 fifirst); 32 bit: flfloat, 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 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
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

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

System Characteristics

CPU	Single core ARM Cortex A7, 1,5 GHz
RAM	256 MB (128 MB available for userspace)
FLASH Storage	512 MB (200 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
Keep Settings	Update 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

Input/Output

Configurable I/O	2 x Configurable Inputs/Outputs. Digital input 0 - 5 V detected as logic low, 8 - 40 V detected as logic high. Open collector output, max output 30 V, 300 mA
Output Control	HTTP POST/GET, Schedule
Events	SMS, Email
I/O Juggler	Allows setting certain I/O conditions to initiate event

Physical Interfaces (Ports, LED, Antennas, Buttons & SIM)

Ethernet	1 x RJ45 port, 10/100/1000 Mbps
I/O Juggler	Allows setting certain I/O conditions to initiate event
USB	1 x Virtual network interface via micro USB
Status LEDs	3 x connection type status LEDs, 3 x connection strength LEDs, 2 x LAN status LEDs, 1 x Power LED
SIM	1 x SIM slot (Mini SIM – 2FF), 1.8 V/3 V

Power

Connector	4-pin industrial DC power socket
Input Voltage Range	9 – 50 VDC, reverse polarity protection, surge protection >51 VDC 10us max
Power Consumption	Idle: <4 W, Max: <18 W

Physical Specification

Casing Material	Aluminum Housing
Dimensions (W x H x D)	100 x 30 x 93.4 mm
Weight	241g
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

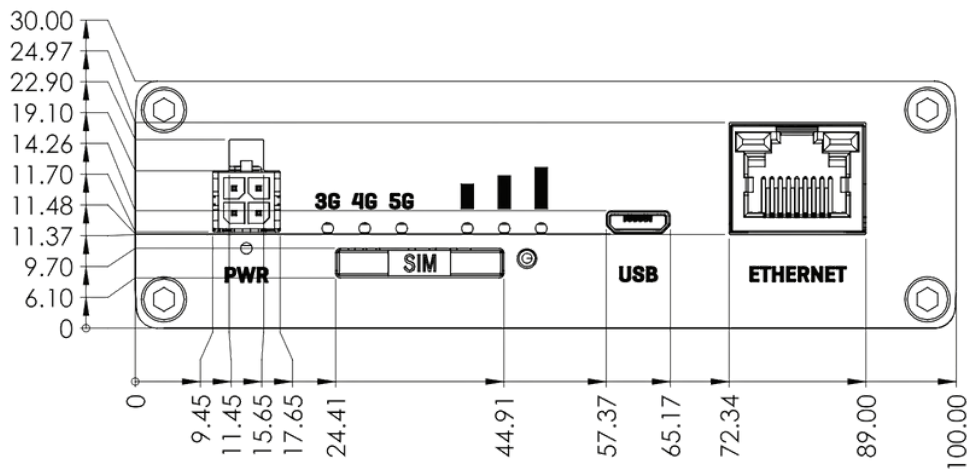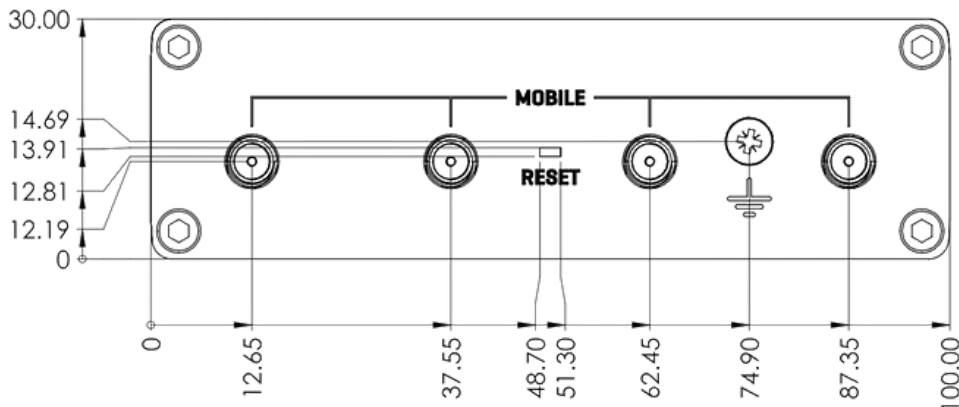# DIMENSIONS (MM) & DIAGRAMS

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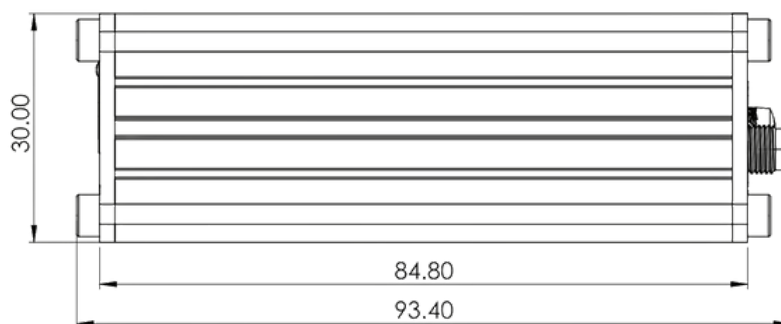
Right View

TRB500 Industrial 5G Gateway
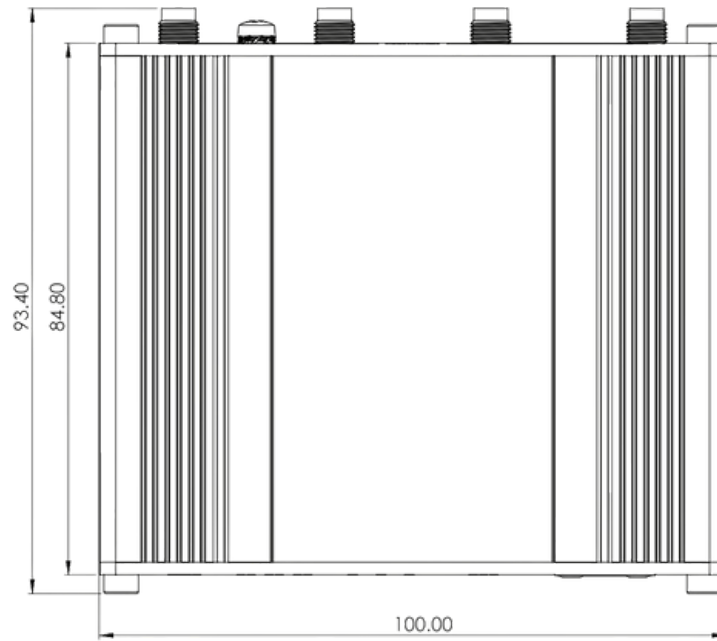
Top View

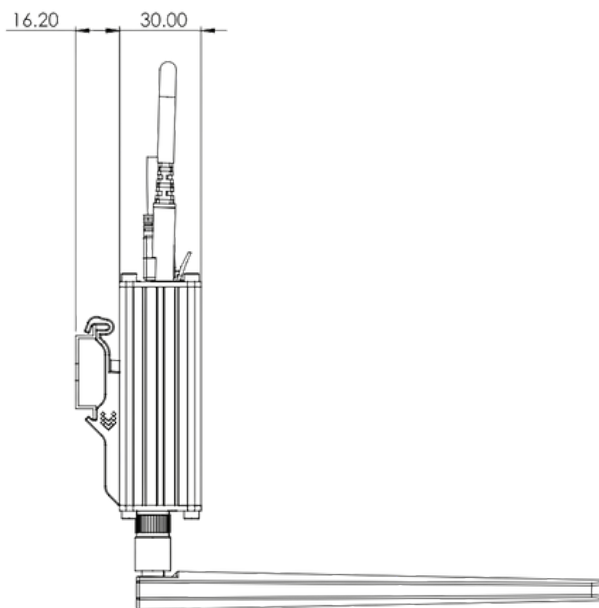**Front View**

Rear View
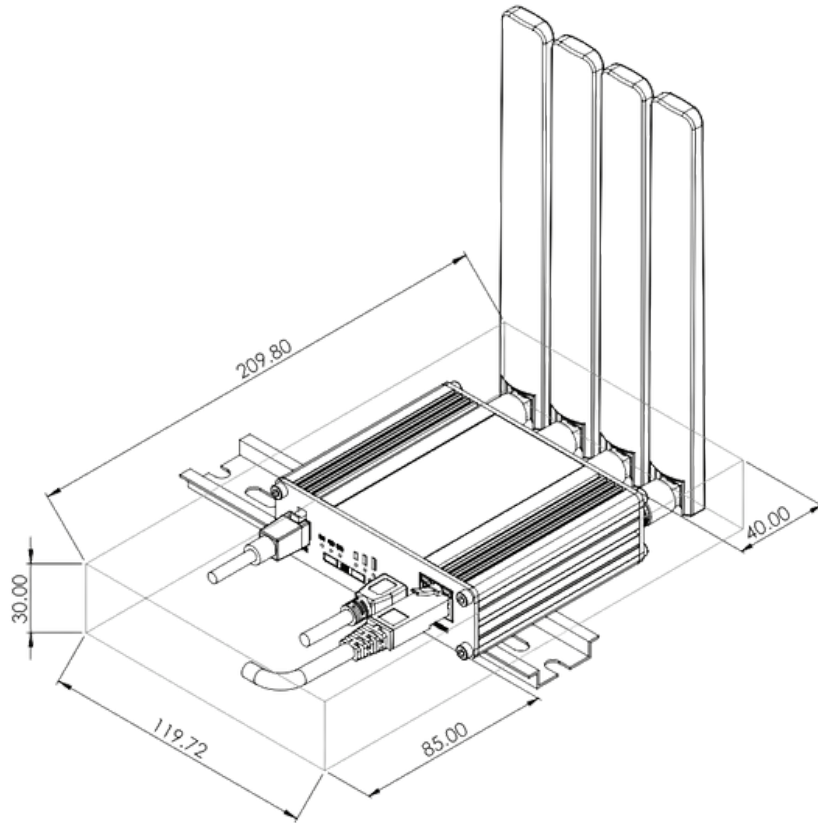
Mounting Space Requirement

DIN Rail

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