

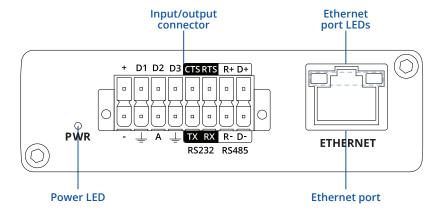
# **TRB246**



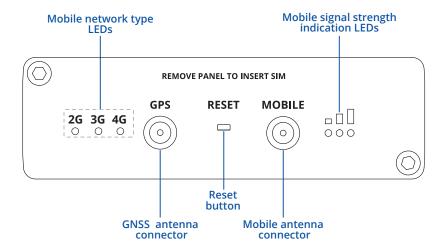


# **HARDWARE**

## **FRONT VIEW**



## **BACK VIEW**



## INPUT/OUTPUT 16-PIN CONNECTOR PINOUT

D1, D2, D3 - 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.

+ -9-30 VDC positive power pin

CTS - RS232 clear data to send pin (output).

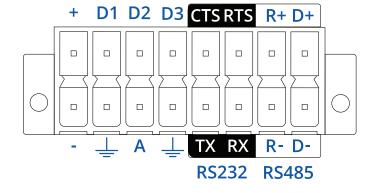
RTS - RS232 request data to send pin (input).

R+ - RS485 receiver positive signal pin.
D+ - RS485 driver positive signal pin.

- Negative/ground power pin.
 - Ground pins for D1, D2, D3, A, RS232 and RS485.
 - Analog input pin. Analog voltage range 0-30 V.
 TX - RS232 transmitted data (input).

RX - RS232 received data (output).

R- - RS485 receiver negative signal. D- - RS485 driver negative signal.





# **FEATURES**

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Mobile module	4G (LTE) – LTE Cat 4 150 Mbps DL, 50Mbps UL; 3G - 42 Mbps DL, 5.76 Mbps UL; 2G - 296 Kbps DL, 236.8 Kbps UL	
SIM switch	2 SIM cards, auto-switch cases: weak signal, data limit, SMS limit, on roaming, no network, network denied, data connection fail	
Status	Signal strength (RSSI), SINR, RSRP, RSRQ, EC/IO, RSCP, Bytes sent/received, connected band, IMSI, ICCID	
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	
SIM idle protection service	When working with devices with two SIM slots, the one not currently in use will remain idle until the device switches to it, meaning that no data is used on the card until then	
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	
ETHERNET		
Ethernet	1 v ETH part 10/100 Mbps, compliance with IEEE 902.2 IEEE 902.2 902.22 standards supports auto MDI/MDIV crossovo	
Luieniet	1 x ETH port, 10/100 Mbps, compliance with IEEE 802.3, IEEE 802.3u, 802.3az standards, supports auto MDI/MDIX crossove	
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 o	
Network topology	Visual representation of your network, showing which devices are connected to which other devices	
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	
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	Mobile, VRRP, Wired options, each of which can be used as an automatic Failover	
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	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	



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 192, AES-128-CFB1 192, AES-192-CFB 192, AES-192-CFB 192, AES-192-CFB 192, AES-192-CFB 192, AES-192-CFB 192, AES-192-CFB 192, AES-256-CFB 256, AES
IPsec	IKEv1, IKEv2, with 14 encryption methods for IPsec (3DES, DES, AES128, AES192, AES256, AES128GCM8, AES192GCM8, AES256GCM8, AES128GCM12, AES256GCM12, AES256GCM16, AES128GCM16, 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
BACNET	
Supported modes	Router
Supported connection types	RS485, TCP
OPC UA	
Supported modes	Client, Server
Supported connection types	TCP
MODBUS	
Supported modes	Server, Client
Supported connection types	RS232, RS485, TCP
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, Kinesis
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 types	RS232, RS485, TCP
DLMS	
DLMS Support	DLMS - standard protocol for utility meter data exchange. Support trough serial and TCP
MONITORING & MANAGEM	ENT
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
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
RMS	Teltonika Remote Management System (RMS)



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Cloud 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 loT 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
FLASH storage	16 MB

# 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
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

# **LOCATION TRACKING**

GNSS	GPS, GLONASS, BeiDou, Galileo and QZSS
Coordinates	GNSS coordinates via WebUI, SMS, TAVL, RMS
NMEA	NMEA 0183
NTRIP	NTRIP protocol (Networked Transport of RTCM via Internet Protocol)
Server software	Supported server software TAVL, RMS
Geofencing	Configurable multiple geofence zones

# SERIAL

RS232	Terminal block connector: TX, RX, RTS, CTS	
RS485	Terminal block connector: D+, D-, R+, R- (2 or 4 wire interface)	
Serial functions	Console, Serial over IP, Modem, MODBUS gateway, NTRIP Client	

# INPUT / OUTPUT

Input	3 x Digital Input, 0 - 6 V detected as logic low, 8 - 30 V detected as logic high
Output	3 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	2-pin in 16-pin industrial terminal block
Input voltage range	9 – 30 VDC, reverse polarity protection, surge protection +/-1 kV 50 μs max
Power consumption	Idle: < 1.5 W, Max: < 3.5 W

## **PHYSICAL INTERFACES**

Ethernet	1 x RJ45 port, 10/100 Mbps	
I/O's	3 x Configurable digital I/O in 16-pin terminal block	
Status LEDs	3 x connection status LEDs, 3 x connection strength LEDs, 1 x power LED, 1 x Eth port status LED	
SIM	2 x SIM slots (Mini SIM – 2FF), 1.8 V/3 V, double stacked SIM tray	
Power	1 x 16-pin terminal block	
Antennas	1 x SMA connector for LTE, 1 x SMA connector for GNSS	
RS232	4-pin in 16-pin terminal block (TX, RX, RTS, CTS)	
RS485	4-pin in 16-pin terminal block (D+, D-, R+, R-)	
Reset	Reboot/User default reset/Factory reset button	



# PHYSICAL SPECIFICATION

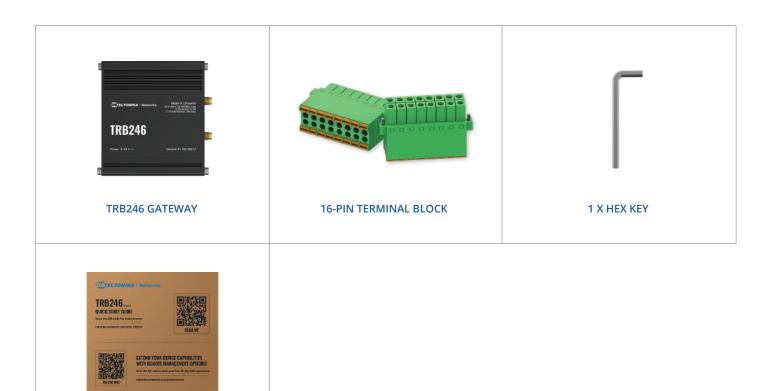
Casing material	Aluminium housing
Dimensions (W x H x D)	83 x 25 x 74.2 mm
Weight	165 g
Mounting options	DIN rail, flat surface placement
OPERATING ENVIRONMENT	NT
Operating temperature	-40 °C to 75 °C
Operating humidity	10% to 90% non-condensing
Ingress Protection Rating	IP30
REGULATORY & TYPE APP	PROVALS

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



# **STANDARD PACKAGE\***

- TRB246 Gateway 16-pin terminal block
- 1 x hex key
- QSG (Quick Start Guide) Packaging box



QSG

<sup>\*</sup> Standard package contents may differ based on standard order codes.



# **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

**4G (LTE-FDD)**: B1, B3, B7, B8, B20, B28A **4G (LTE-TDD)**: B38, B40, B41 **3G**: B1, B8 **2G**: B3, B8 TRB246 0\*\*\*\* EMEA, Thailand

TRB246000000 / Standard package with



# **TRB246 SPATIAL MEASUREMENTS**

## **MAIN MEASUREMENTS**

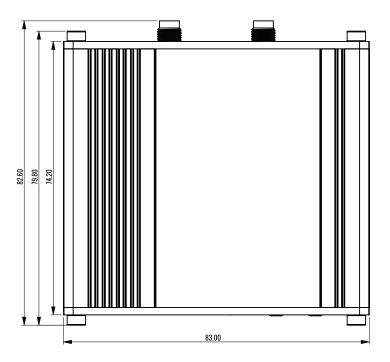
W x H x D dimensions for TRB246:

Device housing\*: 83 x 25 x 74.2 mm Box: 111 x 31 x 89 mm

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

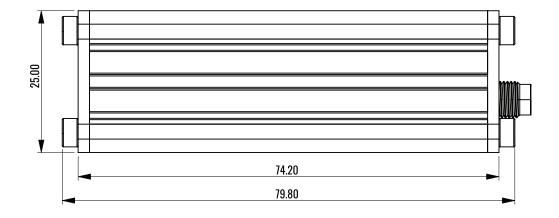
## **TOP VIEW**

The figure below depicts the measurements of TRB246 and its components as seen from the top:



# **RIGHT VIEW**

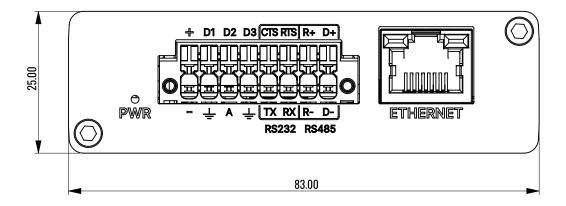
The figure below depicts the measurements of TRB246 and its components as seen from the right side:  $\frac{1}{2} \left( \frac{1}{2} \right) = \frac{1}{2} \left( \frac{1}{2} \right) \left( \frac{1}$ 





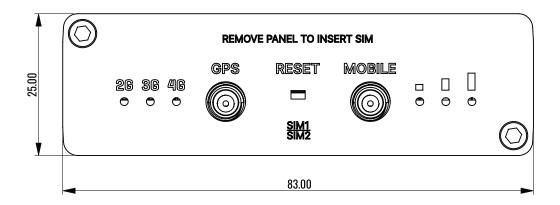
## **FRONT VIEW**

The figure below depicts the measurements of TRB246 and its components as seen from the front panel side:  $\frac{1}{2} \left( \frac{1}{2} \right) = \frac{1}{2} \left( \frac{1}{2} \right) \left$ 



## **REAR VIEW**

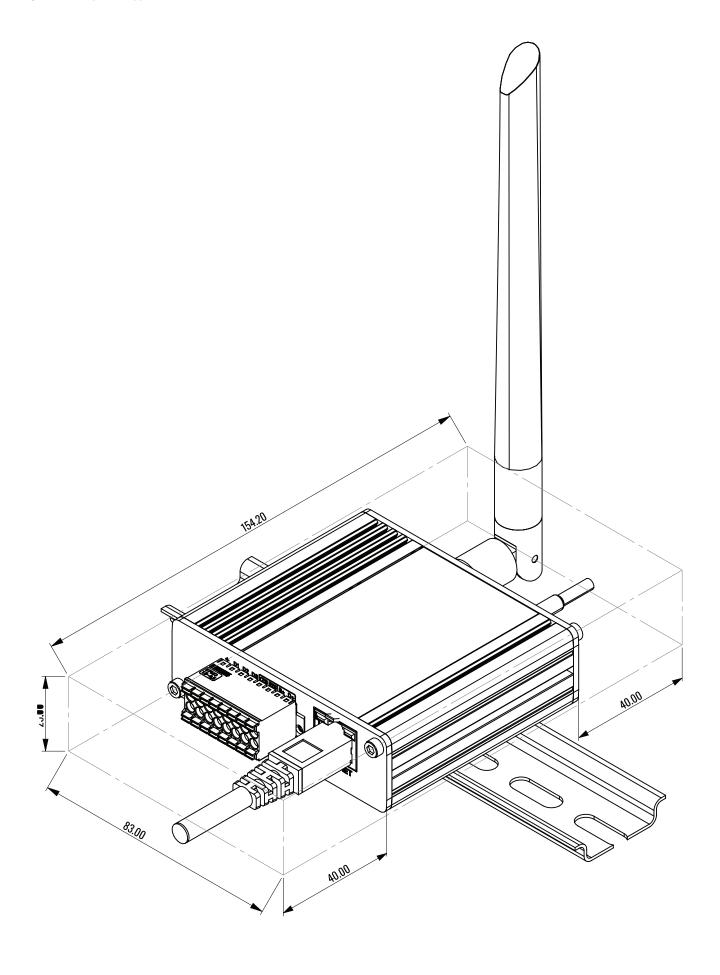
 $The figure \ below \ depicts \ the \ measurements \ of \ TRB246 \ and \ its \ components \ as \ seen \ from \ the \ back \ panel \ side:$ 





# 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:

