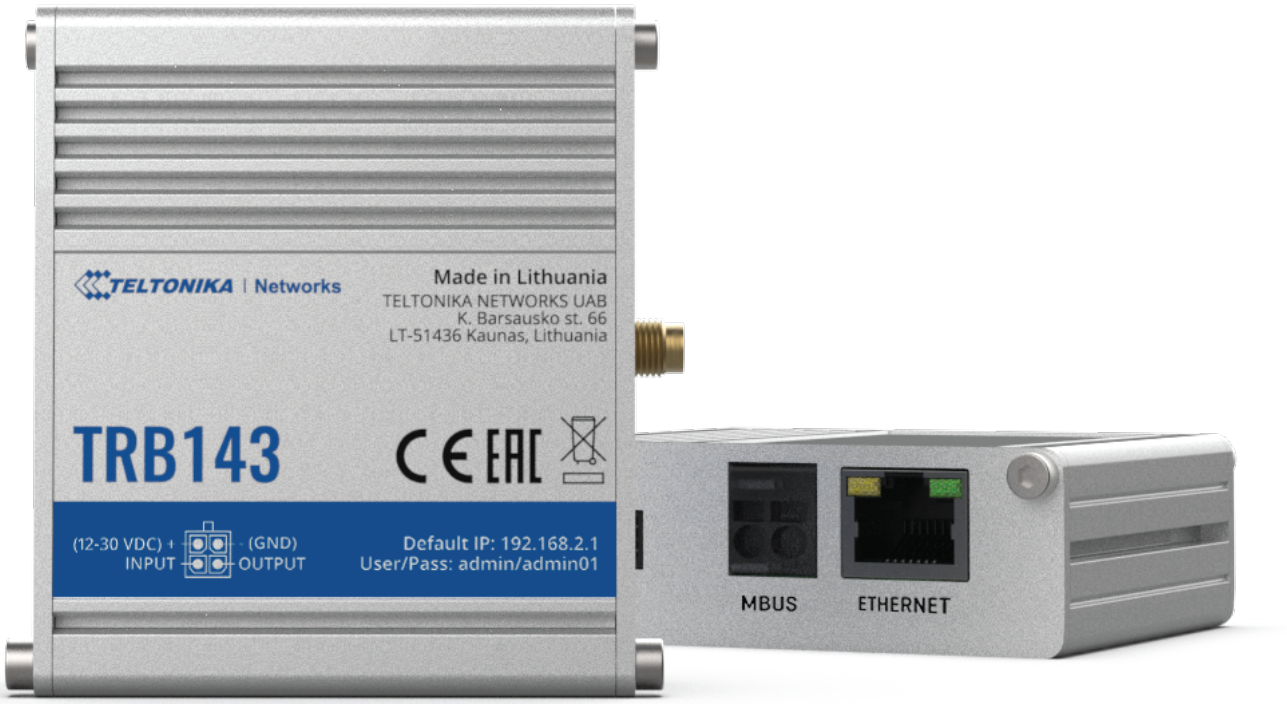
TELTONIKA | Networks

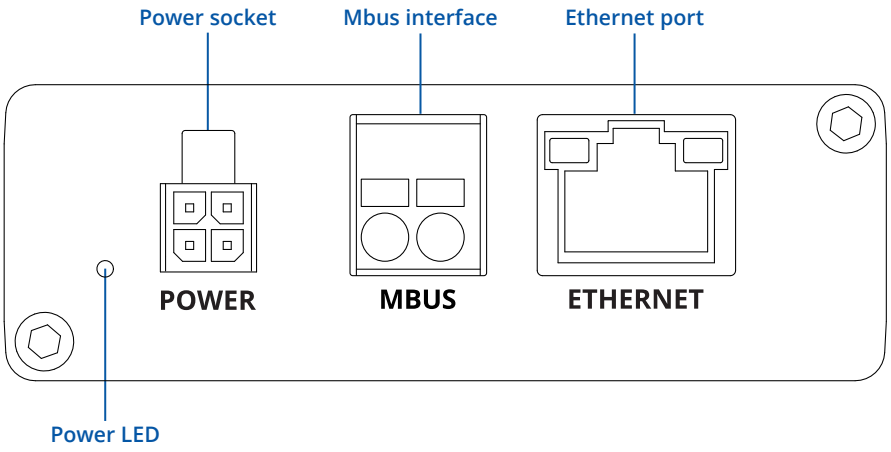
TRB143



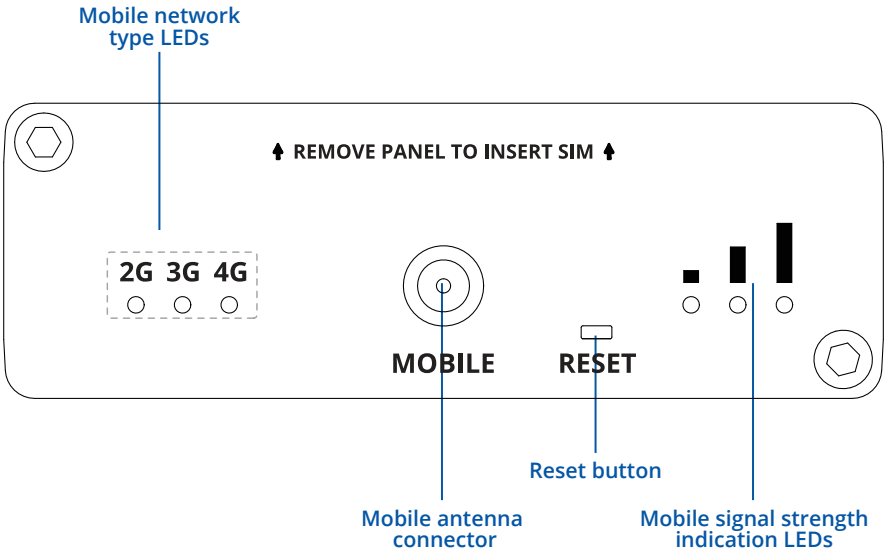
Copyright © 2022, TELTONIKA NETWORKS. Specifications and information given in this document are subject to change by TELTONIKA NETWORKS without prior notice.

HARDWARE

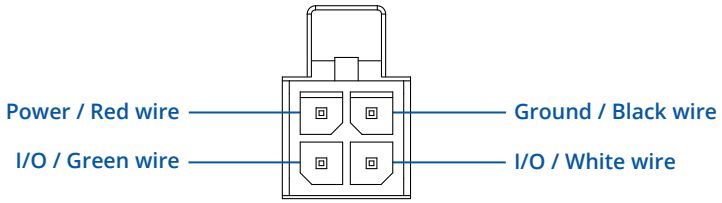
FRONT VIEW



BACK VIEW



POWER SOCKET PINOUT



Copyright © 2022, TELTONIKA NETWORKS. Specifications and information given in this document are subject to change by TELTONIKA NETWORKS without prior notice.

FEATURES

MOBILE

Mobile module	4G (LTE) – Cat 4 up to 150 Mbps, 3G – Up to 42 Mbps, 2G – Up to 236.8 kbps
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

ETHERNET

LAN	1 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
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
QoS / Smart Queue Management (SQM) (planned)	Traffic priority queuing by source/destination, service, protocol or port
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 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)
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
Access control	Flexible access control of TCP, UDP, ICMP packets, MAC address filter

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
Psec	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
ZeroTier	ZeroTier VPN
WireGuard	WireGuard VPN client and server support

M-Bus

M-Bus port	M-Bus port on TRB143 can support aup to 6 Slave M-Bus devices. If slaves are self-powered, the max slave count is 250.

Copyright © 2022, TELTONIKA NETWORKS. Specifications and information given in this document are subject to change by TELTONIKA NETWORKS without prior notice.

DATA TO SERVER

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

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)

IoT PLATFORMS

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, 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/ 3G 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

SYSTEM CHARACTERISTICS

CPU	ARM Cortex-A7 1.2 GHz CPU
RAM	128 MB (50 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/configuration from server
RMS	Update FW/configuration for multiple devices
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	1 x Digital Input, 0 - 6 V detected as logic low, 8 - 30 V detected as logic high
Output control	HTTP POST/GET, Schedule
Events	SMS, EMAIL
I/O juggler	Allows to set certain I/O conditions to initiate event

Copyright © 2022, TELTONIKA NETWORKS. Specifications and information given in this document are subject to change by TELTONIKA NETWORKS without prior notice.

POWER

Connector	4 pin industrial DC power socket
Input voltage range	12 – 30 VDC (4 pin industrial socket), reverse polarity protection, surge protection >33 VDC 10us max
Power consumption	up to 3 W idle, up to 6W max

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

Ethernet	1 x RJ45 port, 10/100/1000 Mbps
MBUS	1 x M-BUS port
I/Os	2 x Configurable I/O pins on 4 pin power connector
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	1 x 4 pin DC power connector
Anntena	1 x SMA for LTE
Reset	Reboot/User default reset/Factory reset button

PHYSICAL SPECIFICATION

Casing material	Aluminum housing
Dimensions (W x H x D)	74.5 x 25 x 64.4 mm
Weight	135 g
Mounting options	Bottom and sideways DIN rail, Flat surface

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

EMI

Standards	EN 55032:2015 + A1:2020, EN 55035:2017 + A11:2020, EN IEC 61000-3-2:2019 + A1:2021, EN 61000-3-3:2013 + A1:2019, EN 301 489-1 V2.2.3, EN 301 489-17 V3.2.4, EN 301 489-52 V1.2.1
ESD	EN 61000-4-2:2009
Radiated Immunity	EN 61000-4-3:2020
EFT	EN 61000-4-4:2012
Surge protection	EN 61000-4-5:2014+A1:2017
CS	EN 61000-4-6:2014
DIP	EN IEC 61000-4-11:2020

RF

Standards	EN 301 511 V12.5.1, EN 301 908-1 V13.1.1, EN 301 908-2 V13.1.1, EN 301 908-13 V13.1.1

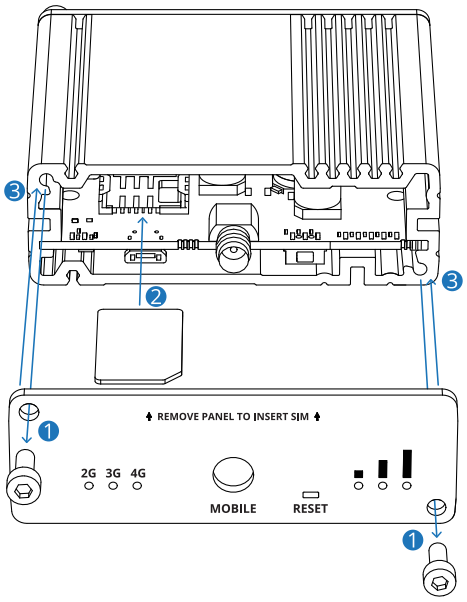
SAFETY

Standards	IEC 62368-1:2018, EN IEC 62368-1:2020 + A11:2020, BS EN IEC 62368-1:2020 + A11:2020, EN IEC 62311:2020, EN 50665:2017

Copyright © 2022, TELTONIKA NETWORKS. Specifications and information given in this document are subject to change by TELTONIKA NETWORKS without prior notice.

HARDWARE INSTALLATION

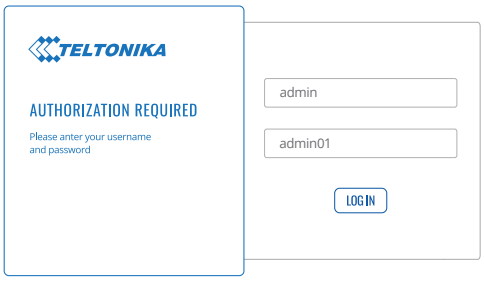
1. Unscrew two back panel hex bolts and remove the back panel.
2. Insert your SIM card into the SIM socket.
3. Attach the panel and tighten the hex bolts.
4. Attach the mobile antenna (max torque 0.4 N·m / 3.5 lbf·in) and connect the Ethernet cable.
5. M-Bus is a multi-drop 2-wire bus with no polarity. For M-Bus connection, use a cable of area 0.25-1.5 mm2, e.g. a standard telephone cable (EKKX 2x2x0.5). Connect the wiring to the M-Bus interface. Do not exceed the maximum cable length of 1000 m.



LOGIN TO DEVICE

1. To enter the gateway's Web interface (WebUI), type http://192.168.2.1 into the URL field of your Internet browser*.
2. Use login information shown in image A when prompted for authentication.
3. After you log in, you will be prompted to change your password for security reasons. The new password must contain at least 8 characters, including at least one uppercase letter, one lowercase letter, and one digit. This step is mandatory, and you will not be able to interact with the router's WebUI before you change the password.
4. When you change the router's password, the Configuration Wizard will start. The Configuration Wizard is a tool used to set up some of the router's main operating parameters.
5. Go to the Overview page and pay attention to the Signal Strength indication (image B). To maximize the cellular performance try adjusting the antennas or changing the location of your device to achieve the best signal conditions.

A.



B.

TECHNICAL INFORMATION

Radio specifications	
RF technologies	2G, 3G, 4G
Max RF power	33 dBm@GSM, 24 dBm@WCDMA, 23 dBm@LTE
Bundled accessories specifications**	
Power adapter	Input: 0.6 A@100-240 VAC, Output: 12 VDC, 1.5 A, 4-pin plug
Mobile antenna	699~868 / 1850~2690 MHz, 50 Ω, VSWR<3, gain*** 1 dBi, omnidirectional, SMA male connector

*To ensure maximum compatibility please use following latest internet browsing applications: Chrome, Firefox, Edge, Opera, Safari, Android Chrome, Android Firefox.
**Order code dependent.
***Higher gain antenna can be connected to compensate for cable attenuation when a cable is used. The user is responsible for the compliance with the legal regulations.

Copyright © 2022, TELTONIKA NETWORKS. Specifications and information given in this document are subject to change by TELTONIKA NETWORKS without prior notice.

WHAT'S IN THE BOX?

STANDARD PACKAGE CONTAINS*

- TRB143
- 18 W PSU
- 1 x LTE antenna (magnetic mount, SMA male, 3 m cable)
- 1 x hex key
- LAN cable
- QSG (Quick Start Guide)
- RMS Flyer
- Packaging box

TRB143	18 W PSU	1 X LTE ANTENNA (MAGNETIC MOUNT, SMA MALE, 3 M CABLE)
1 X HEX KEY	ETHERNET CABLE (1.5 M)	

* For all standard order codes standard package contents are the same, execpt for PSU.

Copyright © 2022, TELTONIKA NETWORKS. Specifications and information given in this document are subject to change by TELTONIKA NETWORKS without prior notice.

STANDARD ORDER CODES

PRODUCT CODE	HS CODE	HTS CODE	PACKAGE CONTAINS
TRB14300B000	851762	8517.62.00	Standard Package

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

AVAILABLE VERSIONS

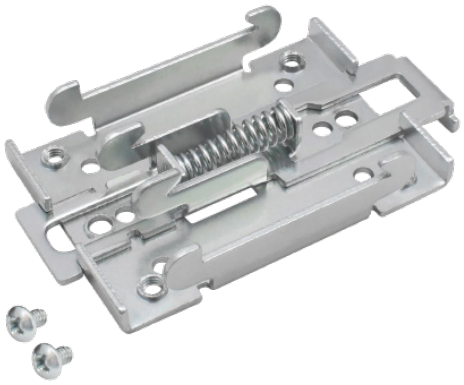
PRODUCT CODE	REGION (OPERATOR)	FREQUENCY
TRB143 0*****	Europe, the Middle East, Africa, Korea, Thailand, India	• 4G (LTE-FDD): B1, B3, B7, B8, B20, B28A • 3G: B1, B8 • 2G: B3, B8 • 2G: B3, B8

Copyright © 2022, TELTONIKA NETWORKS. Specifications and information given in this document are subject to change by TELTONIKA NETWORKS without prior notice.

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.

Copyright © 2022, TELTONIKA NETWORKS. Specifications and information given in this document are subject to change by TELTONIKA NETWORKS without prior notice.