

# TRB160 Firmware Downloads

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This page contains firmware files for TRB160 devices. Look to the table below or the [changelog](#) to find download links.

To upgrade firmware using WebUI, follow the instructions in [TRB160 Firmware](#).

File	Type	Release date	Size	MD5	Changelog
<a href="#">TRB16_R_00.07.08.2_WEBUI.bin</a>	Latest FW	2024.08.12	20.2 MB	58762d48d81b2b754ab7593cd3f878ad	<a href="#">Link</a>
<a href="#">TRB16_R_00.07.07.3_WEBUI.bin</a>	Mass production FW	2024.06.25	21.06 MB	8df4ed6968790b5e77eac9abfc4797bb	<a href="#">Link</a>
<a href="#">TRB16_R_SDK_00.07.08.2.tar.gz</a>	SDK	2024.08.12	409.96 MB	fdd3ee87cd42f8117486456ba13c456f	

**Note:** packages for [Package Manager](#) are independent from firmware and can be downloaded in the [Package Downloads](#) page.

## FW checksums

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Checksums for firmware files can be found [here](#).

## Changelog

### [TRB16\\_R\\_00.07.08.2](#) | 2024.08.12

- **Fix**
    - **System**
      - Update Firmware: fixed inconsistent firmware download from FOTA
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### [TRB16\\_R\\_00.07.08.1](#) | 2024.08.06

**Note:** This firmware version was removed due to an issue with FOTA firmware download.

- **Improvements**
  - **Network**
    - Mobile: improved firmware downgrade validation for Quectel modules
  - **Services**
    - Zerotier: updated version to 1.14.0
- **Fix**
  - **Network**

- Mobile: fixed an issue where in some cases mobile network interfaces would not be brought down properly
  - Mobile: fixed memory fault while allowlist and denied data roaming enabled
  - Network: fixed default route not being added for PPPoE connections
  - **Services**
    - OPC UA Client: fixed connections not being closed after using testing functionality
  - **System**
    - WebUI: fixed SDK WebUI package compilation
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## TRB16\_R\_00.07.08 | 2024.07.18

**Note:** This firmware version was removed due to an issue with FOTA firmware download.

- **New**

- **Network**

- DNS: added inherited server status to configuration page
- HTTPS DNS Proxy: added new HTTPS DNS Proxy package to package manager
- Mobile: added SIM card lock/unlock functionality in Mobile->Utilities page
- Mobile: added SIM card PIN change functionality in Mobile->Utilities page
- Mobile: added new Mobile->Limits page which shows information and allows to configure Data and SMS limits
- Mobile: added DFOTA support for RG520N modems
- Mobile: added nr-arfcn display to mobile status page
- Mobile: added dfota support for devices with RG520N-EB modem

- **Services**

- Data to Server: added 'Lua script' data input
- Input/Output: added ability to configure gpio debounce timer and changed default gpio debounce timer value from 200 ms to 10 ms
- IPsec: added initial XFRM support
- MQTT Modbus Gateway: added JSON message type format
- OpenVPN: added DCO support

- **System**

- API Core: added option to configure api session timeout
- Certificates: added "Let's encrypt" certificate generation
- PAM: added RADIUS external user support
- UI Core: added data analytics support
- Update Firmware: added warning message about device being temporarily unreachable on firmware update

- **Improvements**

- **Network**

- DNS: separated field "DNS forwardings" into two: one for simple server forwarding other for domain-specific
- DNS: moved "DNS Forwardings", "Listen interfaces", "Exclude interfaces", "Local service only", options to advanced tab
- Firewall: improved protocol field in all firewall pages by making that "All" value would be mutually exclusive with any other value
- Mobile: improved IMS context initialization
- Mobile: updated SMS memory management for multipart SMS
- Mobile: added error message when attempting to enable the SIM switch without

any criteria set

- Mobile: added informative message in SIM switch page when Data/SMS limit criteria are enabled but the limits themselves are not set up
- Mobile: moved operator list allowlist/blocklist selection to Network selection page
- Mobile: refactored Scanned operators modal, added repeat scan button
- Mobile: added ability to view previously scanned operators in Network selection and Operator lists pages
- Mobile: added ability to edit operator list name and initiate scans for operators in Operator lists page
- Mobile: updated operator code field list to include APNs from the APN database in Operator lists page
- Mobile: split Mobile->General page into three pages: General, Connection and Utilities pages
- Mobile: added mobile interface with highest priority APN configuration in Mobile->General page
- Mobile: added icons with hints which show SIM card, operator, data connection statuses in Mobile->General page
- Mobile: moved Mobile data limit section to a tab in WAN page
- Mobile: added informative message in WAN page to indicate whether the connection will be made using APN from APN database, empty or custom APN
- Mobile: improved logging of ping error messages
- Mobile: added 5G SA/NSA mode selection
- Mobile: improved modem updater to stop ping reboot service while update is in progress
- Mobile: improved the handling of denied messages upon SIM switch
- Mobile: added notification when a multi-IMSI SIM card is using Auto APN
- Mobile: added validation to not allow passthrough and bridge mode when one already exists
- Mobile: improved safeguards for modem services startup
- Mobile: improved modem update status display
- Mobile: added corrupted mobile statistics database restoration functionality
- Mobile: improved setting of IPv4 and IPv6 types inside the modules
- Mobile: improved provider name parsing for SLM750 modem
- Multi WAN: improved interface status representation when using load balancing
- Network: added more options for "IPv6 assignment length" field

○ **Services**

- Azure IoT Hub: added DPS symmetric key attestation support
- Azure IoT Hub: added Direct Method support
- Azure IoT Hub: added Plug and Play integration
- Azure IoT Hub: added link to "Data to Server" page
- Data to Server: added support for multiple filters
- Data to Server: improved HTTP output hostname definition with automatic protocol specification in URL
- Data to Server: improved MQTT input connection handling
- DNP3 Client: added option to enable/disable service
- GRE: increased Inbound and Outbound key limit to 4294967295
- Input/Output: added custom name support in I/O status page
- IPsec: added certificate warning message
- Mobile Utilities: added interface option to sms\_utils cellular command
- Mobile Utilities: improved error log message
- Mobile Utilities: improved naming of I/O pins in initial I/O status rule

- Mobile Utilities: sms utilities authentication brute force prevention
- Modbus Server: added mobile last month and last week usage registers
- Mosquitto: added large package size check for MQTT clients
- MQTT Modbus Gateway: improved mosquitto reconnect time and service will try to recover few times before exiting
- MQTT Publisher: improved MQTT connection handling
- OPC UA Client: added security modes
- OPC UA Server: added security modes
- OPC UA Server: added service status display
- OpenVPN: added support for decrypting private key when uploading a configuration file
- OpenVPN: improved instance status state
- OpenVPN: added options to specify an IP address pool for dynamic assignment to clients
- SMPP: added brute-force prevention
- SMPP: added TLS/SSL support
- SMS Utilities: added security warning in "Authorization method" configuration
- SNMP: changed interface module OID structure
- SNMP: improved User-based Security Model (USM) brute force attack prevention measures
- SNMP: added power voltage trap support
- Stunnel: improved global instance settings dependencies
- emailrelay: updated version to 2.4.1
- OpenVPN: updated version to 2.6.9
- stunnel: updated version to 5.72
- **System**
  - Access Control: added certificate key length warnings
  - Access Control: adjusted access control when all pages are blocked
  - Access Control: added certificate file download for CLI to work on all browsers
  - API Core: implemented functionality to include warning messages for vulnerable certificates
  - Boot: improved modem startup reliability
  - Package Manager: added multi package actions
  - Package Manager: added status filter
  - Package Manager: moved package upload action to main page
  - Package Manager: added links to installed packages pages
  - Package Manager: refactored "Packages" page
  - Package Manager: updated opkg repository link to use https
  - RutOS: improved GPL example page to align with new software architecture
  - Troubleshoot: refactored Modem debug section to display responses in single field, added clear button to remove received responses
  - Troubleshoot: added support for multiple syslog servers
  - UI Core: added additional message with IP address to loading screen for scenarios when redirect to different IP address happens
  - UI Core: added toast message hiding when text is too long
  - Update Firmware: added 'Firmware version' data in screen after firmware upload
  - WebUI: added functionality to cancel loading screen if it takes 30 or more seconds
  - WebUI: removed all ubus method calls from webui
  - WebUI: improved language caching
  - WebUI: added password generator for first login modal
  - WebUI: added sticky position to side menu

- WebUI: added default password hint to login error message
- WebUI: added warning messages for low-security certificates
- Kernel: updated version to 5.4.276
- libexpat: updated version to 2.6.2
- SSL/TLS: updated version to 3.0.14
- vue: updated version to 3.4

- **Fix**

- **Network**

- Devices: fixed missing API devices status endpoint permission
- DHCP: fixed "DHCP option" allow empty input value
- DHCP: fixed IPv4 leases being not correctly shown when NTP synchronizes time
- DHCP: fixed DHCP error that occurred after changing the subnet of the LAN IP address in the setup wizard
- Dynamic routes: fixed duplicated external routes cards
- Firewall: fixed firewall zone validation when adding interfaces
- Mobile: fixed low signal reconnect being available on modems where it is not supported
- Mobile: fixed gsmctl -E output to return only json values
- Mobile: fixed Carrier Aggregation signal strength info
- Mobile: fixed wrong mobile data limit used data format for sms messages
- Mobile: fixed duplicate data connection event reporting
- Mobile: fixed an issue where low signal notifications were displayed without a SIM card
- Mobile: fixed modem serial number acquisition after modem reboot
- Mobile: fixed an issue when 4G-only network type selection may have resulted in a slower connection to the operator
- Mobile: fixed issue where USSD responses were returned in HEX format instead of text format for EC200A module
- Mobile: fixed issue where DHCP filter was not set correctly for RG501Q
- Mobile: fixed modem restart using gsmctl
- Mobile: fixed an issue where the wrong IP address was used after a DFOTA upgrade
- Network: fixed overriding MAC address for interfaces that are bridged
- Network: fixed not getting IP address when switching LAN to WAN
- Ports Settings: fixed port advertisement change
- Realtime Traffic: fixed mobile usage by week day translation by device language
- SQM: fixed missing PPP mobile device selection in SQM configuration

- **Services**

- BACnet: fixed incorrect BACnet IP port used for sending responses
- BGP: fixed route map sequence going out of range
- BGP: fixed listen range field allowing multiple entries
- Call Utilities: fixed table header switch to be disabled if no rules were created
- DLMS: fixed DLMS test response format
- DLMS: fixed COSEM group validation
- DLMS: fixed API POST error for /dlms/devices/config endpoint
- DLMS: fixed serial connection not working after reboot
- DNP3 Client: fixed to allow reading objects past 255 index
- DNP3 Client: fixed incorrect hints
- DNP3 Outstation: fixed serial outstation starting issues
- I/O Juggler: fixed improper dout action config handling
- I/O Juggler: updated profile change action

- Input/Output: allow unselecting all Post/Get access methods
  - Input/Output: fixed issue when onewire configuration is not saved
  - IPsec: fixed connectivity issues when using WAN failover
  - IPsec: fixed the instance status when the local firewall option is disabled
  - Ledman: fixed issue when after some time network type LED starts blinking
  - Modbus Client: fixed test request option validation
  - Modbus Client: fixed alarm output action display values
  - Modbus Client: fixed incorrect period hint
  - Modbus Server: fixed APN register not clearing APN
  - Modbus Server: fixed 148 and 164 modbus registers
  - Modbus Server: fixed incorrect hints
  - OPC UA Server: fixed not starting while modem is down
  - OpenVPN: fixed displaying imported files from device
  - OpenVPN: fixed the private key decryption for cases when a password is used
  - OpenVPN: fixed data cipher migration
  - Overview: fixed issue when devices without WiFi send additional request without data
  - SMPP: fixed username bypass problem
  - SMPP: fixed password validation
  - SMS Gateway: fixed SMS to Email recipient formatting according to RFC5322
  - SNMP: fixed GSM mSignal OID value type
  - SNMP: fixed GSM module memory leaks
  - SSTP: fixed functionality when the default route option is not enabled
  - Web Filter: fixed whitelist not working for some hosts when using IPv6
  - **System**
    - Administration: fixed repeated validation on cleared inputs and added validation when new password matches the old one
    - API Core: fixed API method validation during upload action
    - API Core: fixed error messages for POST method
    - API Core: fixed option list validation
    - Boot: fixed factory settings restore (firstboot) not deleting hidden files
    - Events Log: fixed refresh button in event log table
    - IP Block: fixed adding MAC addresses back to whitelist when unblocking all of them
    - Recipients: made phone number field required
    - Setup Wizard: fixed lan ip step not changing ip address
    - Troubleshoot: fixed system log and kernel log buttons to be enabled with read only rights
    - Update Firmware: fixed misleading "Firmware version" status of "N/A" to "FOTA service is disabled" when FOTA is disabled
    - Update Firmware: fixed issue when infinite spinner appears after updating device firmware from server without having internet connection
  - **CVE Patches**
    - Patched CVE-2023-52425
    - Patched CVE-2023-52530
    - Patched CVE-2024-25629
    - Patched CVE-2024-28757
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**TRB16\_R\_00.07.07.3 | 2024.06.12**

- Initial firmware release