

# RUTX11 Firmware Downloads

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This page contains firmware files for RUTX11 devices. Look to the table below or the [changelog](#) to find download links.

To upgrade firmware using WebUI, follow the instructions in [RUTX11 Firmware](#).

File	Type	Release date	Size	MD5	Changelog
<a href="#">RUTX_R_00.07.10_WEBUI.bin</a>	Latest FW	2024.10.10	23.72 MB	b38043f5be8b1de67dd732575c891167	<a href="#">Link</a>
<a href="#">RUTX_R_00.07.08.3_WEBUI.bin</a>	Mass production FW	2024.08.23	23.35 MB	08717f5680d0b3b43aa06053cab40e78	<a href="#">Link</a>
<a href="#">RUTX_R_GPL_00.07.10.tar.gz</a>	SDK	2024.10.10	78.99 MB	f539e2f63a73bd447376f9a09d551add	

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

## FW checksums

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

## Changelog

### [RUTX\\_R\\_00.07.10](#) | 2024.10.10

- **New**
  - **Network**
    - Mobile: added ability to export modem debug and USSD responses to CSV file
    - Mobile: added "hologram" APN for "Hologram" operator
    - Mobile: added "wbdata" APN for "Granite" operator
    - Mobile: added "netw.vp" and "netw2.vp" APNs for "Networth" operator to APN database
    - NAT64: added "jool" package for NAT64 support
  - **Services**
    - AWS IoT Core: added service
    - BACnet: added ability to configure several BIP interfaces, to set network numbers and preconfigure BDT entries for BBMD
    - Console: added service status information display
    - DLMS: added service status information display
    - DNP3 Client: added service status information display
    - DNP3 Outstation: added service status information display
    - GPS: added service status information display

- Modbus Client: added service status information display
- Modbus Server: added service status information display
- Modbus TCP over Serial Gateway: added service status information display
- Modem Control: added service status information display
- MQTT Modbus Gateway: added service status information display
- NTRIP: added service status information display
- OPC UA Client: added service status information display
- OPC UA Server: added variable "rut\_wan\_type" which shows if WAN is on a wired or a mobile network
- OPC UA Server: added service status information display
- RMS: added SOCKS5 proxy support
- **System**
  - Certificates: added SCEP certificate generation method
- **Improvements**
  - **Network**
    - Curl: added unix socket support
    - Firewall: added most options to basic mode for all firewall pages
    - Firewall: added all firewall pages to basic mode
    - Interfaces: increased interface metric maximum value from 10000 to 4294967295
    - Mobile: added "frolive.net" APN for "Telecom Italia", "Telefonica O2" and "Telefonica Movistar" operators to APN database
    - Mobile: changed the default APN for IMS protocol from "VZWIMS" to "IMS" for "Verizon" operator
    - Mobile: fixed an issue where the ICCID was not returned correctly when the SIM card's ICCID ended with letters
    - Mobile: improved 5G NSA CA information display
    - Mobile: improved SIM and eSIM management via LPAC service
    - Multi WAN: added rules table to basic mode
    - Network: improved performance under stateless single-directional traffic (RFC2544)
    - Network: improved throughput stability of "Hardware flow offloading"
    - Static Routes: added page to basic mode
    - VRRP: added page to basic mode
    - Wireless: added interface status message when DFS CAC is in progress
    - Wireless: added most options to basic mode
    - Wireless: added SSID creation and deletion to basic mode
    - Wireless: moved Travelmate from Package Manager to base Firmware
  - **Services**
    - DLMS: added meter COSEM object scanning
    - DNP3 Client: made menu names more consistent
    - Hotspot: added "Coova-Chilli-SSID" (28) Vendor Specific Attribute for Radius
    - IPsec: improved 'Remote endpoint' validation to allow '%any', '%any4', '%any6' values and netmask
    - IPsec: added ability to use certificates from Certificate Manager
    - L2TPv3: added Tunnel ID and Session ID validation to avoid creating multiple tunnels with the same parameters
    - Modbus Client: updated Modbus Client menu position
    - Modbus Server: updated Modbus Server menu position
    - Python3: changed python3-light package libraries
    - SMS Utilities: added an option to enable or disable the return of status code message

- Tailscale: improved status information by including health messages
- Tinc: added options to set the tunnel's IP address
- Tinc: added a port option to listen for incoming connections and the ability to specify a port for outgoing connections
- Wireguard: added tunnel source mode selection
- Python3: updated version to 3.11.7
- Strongswan: updated version to 5.9.14
- Tailscale: updated version to 1.70.0
- **System**
  - Access Control: refactored 'General', 'Security' and 'PAM' Web pages
  - Auto Reboot: added support for multiple hosts/URLs in Ping/Wget Reboot
  - Backup: encrypting backup does not require 7zip package anymore
  - Certificates: split "Let's Encrypt" certificates into multiple files
  - Troubleshoot: added dynamic routes debugging information
  - WebUI: added ability to open new page in new tab without entering user credentials
  - WebUI: improved SDK example application
  - Glib2: updated version to 2.80.5
  - Kernel: updated version to 5.10.224
  - Ncurses: updated version to 6.5
- **Fix**
  - **Network**
    - Firewall: fixed automatic priority option change
    - Mobile: fixed hang up of QMI WDS service
    - Mobile: fixed QMI errors when multi APN is configured
    - Mobile: fixed typo in "m2m.airinternet.eu" APN for "Airinternet" operator in APN database
    - Network: fixed mobile Bridge/Passthrough mode not working after changing LAN interface settings
    - Wireless: fixed BSSID show for interface in Client mode
    - Wireless: fixed hostapd ubus call timeout after wireless configuration change
    - Wireless: fixed reporting disconnection from external AP when device in STA+AP mode
    - Wireless: fixed missing rx frame types needed for wifi scanner
  - **Services**
    - BACnet: fixed communication issues between the ports
    - BACnet: added all available default baud rates
    - BGP: fixed AS field to allow duplicate values
    - BGP: fixed Access list filters not applying fully
    - DLMS: added all available default baud rates
    - DMVPN: fixed DMVPN GRE instance disappearing when creating new IPsec instance
    - DNP3 Client: removed unnecessary max length display for test response field
    - DNP3 Client: renamed TCP Station to TCP Client in the API documentation
    - DNP3 Client: added all available default baud rates
    - DNP3 Outstation: added all available default baud rates
    - GPS: fixed NMEA collecting and cache file path validations
    - GPS: added validation for missing required AVL options
    - GPS: fixed an issue where a firmware update with keep settings would remove existing hosts
    - GPS: fixed HTTPS hostname validation

- GRE: fixed interface not showing up in OSPF and RIP selections if it is off
- Hotspot: fixed blacklist not working when no addresses are provided
- Hotspot: fixed uploaded custom landing page file permissions
- Hotspot: fixed certificates to be required to enable https redirect
- IPsec: fixed IP rule not appearing after network restart
- IPsec: fixed duplicate port values in IPsec firewall rules
- Ledman: fixed issue when power LED turns off when rebooting device
- Modbus Client: added all available default baud rates
- Modbus Client: added missing API docs for Modbus test request
- Modbus Server: added all available default baud rates
- Modbus Server: fixed firewall rule staying enabled when app is disabled
- Modbus Server: fixed firewall rule creation
- Modem Control: added all available default baud rates
- NTRIP: added all available default baud rates
- OpenVPN: fixed the configuration after disabling the use of external services
- OpenVPN: fixed OpenVPN restarting when mobile interface comes up
- Over IP: added all available default baud rates
- SNMP: fixed Hotspot OIDs' hssID and hssUsername display
- Tinc: fixed adding routes to remote subnets
- Tinc: fixed configuration generation issues when creating multiple network and host instances
- Tinc: fixed issues with route creation when using IPv6 addresses in tunnel configuration
- Tinc: fixed validation for uploading key files
- **System**
  - Backup: fixed uploading backup with memory expansion enabled
  - CLI: fixed some private IPs being incorrectly determined as public
  - JSON-RPC: fixed login "Access Denied" error
  - Memory Expansion: fixed input element alignment issues
  - WebUI: added API required values validation when enabling BACnet, DLMS, DNP3, Modbus, MQTT, NTRIP services
  - WebUI: fixed 'Memory' status card progress bars visuals
  - WebUI: fixed search bar suggestions after removing packages
  - WebUI: fixed showing data in modals for users with only read permissions
  - WebUI: fixed custom SDK pages not loading correctly
- **CVE Patches**
  - CVE-2021-3520
  - CVE-2021-44540
  - CVE-2021-44541
  - CVE-2024-4032
  - CVE-2024-6119
  - CVE-2024-6232
  - CVE-2024-6923
  - CVE-2024-7264

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**[RUTX\\_R\\_00.07.09.4](#) | 2024.10.02**

- **Improvements**
  - **Services**

- NTP Client: changed default NTP servers
  - **Fix**
    - **Services**
      - NTP Client: fixed NTP server usage to work with next in line server if current server does not respond
- 

## [RUTX\\_R\\_00.07.09.3](#) | 2024.09.27

- **Fix**
    - **Network**
      - Multi WAN: fixed ipsets not getting deleted correctly when Multi WAN gets restarted
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## [RUTX\\_R\\_00.07.09.1](#) | 2024.09.13

- **Improvements**
    - **Services**
      - Python3: updated version to 3.11.7
  - **Fix**
    - **Network**
      - Mobile: fixed eSIM profile config generation
- 

## [RUTX\\_R\\_00.07.09](#) | 2024.09.03

- **New**
  - **Network**
    - Devices: added VXLAN support
    - Firewall: added ability to configure NAT rule action
    - Firewall: added additional TTL target for firewall rules
    - Mobile: added "datamobile.ag" APN for "Datamobile.ag" operator to APN database
    - Mobile: added "m2m.ajrinternet.eu" APN for "Airinternet" operator to APN database
    - Mobile: added "wbdata" APN for "Webbing" operator to APN database
    - Mobile: added "inetd.vodafone.iot" APN for "Vodafone" operator to APN database
    - Mobile: added "asm" APN for "ASM" operator to APN database
    - Realtime Traffic: added historical traffic charts
    - Realtime Traffic: added overall quality measurement to wireless signal charts
    - Wireless: added option to enable 802.11w Management frame protection when using non-WPA3 encryption
  - **Services**
    - Events Reporting: added new firmware version notification event
    - SNMP: added Multiwan data module
  - **System**
    - WebUI: added notifications menu
- **Improvements**
  - **Network**

- Mobile: improved network bring up after operator scan
- Mobile: updated bands selection to include band number and frequency
- Mobile: improved SIM card notifications to get removed when SIM card state or active SIM changes
- Mobile: improved modem update notifications to show modem name
- Mobile: removed the USSD feature from the data-only modems
- Ports Settings: added more PoE state symbols, colored disabled port differently and improved port status hint
- Realtime Traffic: improved chart styles
- Wireless: increased EAP authentication logging
- Wireless: added various validations for network that is being used by wireless interface
- Wireless: added insecure configuration warnings when configuring SSIDs
- Wireless: updated wireless cards to display each radio device's signal quality and band data
- Wireless: reduced time required for Fast Transition in STA mode
- **Services**
  - Call Utilities: added check if the number is blocked before doing action
  - Data to Server: added warning messages about insecure certificates for http\_certfile and mqtt\_certfile options in API and WebUI
  - DLMS: added SHA256 authentication
  - DLMS: improved COSEM group enable validation
  - GRE: reduced GRE keepalive packet buffer size
  - Hotspot: increased throughput performance
  - Hotspot: increased maximum length of 'Local users' username to 255 characters
  - Hotspot: added walled garden allowlist and blocklist
  - IPsec: added support for route based tunnel
  - L2TP: added field for custom options
  - SMPP: added timeout option
  - Web Filter: added hostname count message after successful file upload
- **System**
  - Access Control: improved system user's access control rules logic
  - Access Control: added option to disable password auth for the root user
  - Administration: improved write/read access control options display to match menu path style
  - Backup: improved backup page by splitting it into backup and reset settings page
  - Side Widget: added port status widget
  - Update Firmware: changed firmware update log to include firmware version
  - WebUI: updated firmware and backup verification pages design
  - WebUI: improved global alerts display
  - WebUI: added confirmation prompt for disabling service in side widget
  - Kernel: updated version to 5.10.221
- **Fix**
  - **Network**
    - Devices: fixed configured VLAN 0 device cannot be selected in interface physical settings configuration
    - Mobile: fixed data limit widget to show used data for inactive interface
    - Mobile: fixed Bridge/Passthrough modes for routed networks
    - Mobile: fixed incorrect date values when setting SMS limit
    - Mobile: fixed SINR display for EG060K module
    - Mobile: fixed SMS used data header counter

- Mobile: fixed the issue where the PUK event was not displayed when the SIM PIN was blocked
- Mobile: fixed uqmi start-network authentication issue
- Mobile: fixed modem info not being filled on devices with more than one modem
- Mobile: fixed mobile data limit to calculate correct used limits when using ipv4 and ipv6 simultaneously
- Mobile: fixed USSD over IMS error handling
- Mobile: fixed an issue where the interface could hang if the modem was busy
- Network: fixed incorrect date values when setting data limit
- Network: fixed switch hardware MTU being set incorrectly when changing MTU on any network interface
- RelayD: fixed relayd assigning wrong interface to zone
- Wireless: fixed station mode connection issues for 2.4 GHz radio in STA+AP mode
- Wireless: fixed wireless status API response to contain separate interface information for multiple radio configurations
- Wireless: fixed excessive log spam during 5 GHz ACS
- **Services**
  - Azure IoT Hub: fixed the Azure IoT Hub deprecated endpoint to create Data to Server sections
  - Azure IoT Hub: fixed the Azure IoT Hub deprecated endpoint so that it does not create sections in GET request
  - Azure IoT Hub: fixed the deletion of Data to Server sections when an Azure IoT Hub section is deleted through the deprecated endpoint
  - DLMS: fixed OBIS code validation
  - GPS: fixed an issue where a firmware update with keep settings would remove existing hosts
  - GPS: fixed NMEA forwarding when RMC/GGA were not synchronized when using same interval
  - Hotspot: fixed 'Hotspot network' input validation to only allow network mask from 16 to 30
  - Input/Output: added I/O juggler reload when I/O pin direction is changed
  - OPC UA Client: fixed TCL file upload
  - OPC UA Server: fixed TCL file upload
  - OPC UA Server: fixed configuration migration
  - OpenVPN: fixed default firewall zone for tap interfaces
  - SNMP: fixed negative GPS latitude display
  - SNMP: fixed TELTONIKA-MIB wireless module crash
  - SNMP: fixed mobile network state display
  - SNMP: fixed default hssDwLimit, hssUpLimit, hssDwBandwidth and hssUpBandwidth values
- **System**
  - API Core: fixed file deletion
  - Package Restore: fixed automatic package re-installation after firmware upgrade
  - Troubleshoot: fixed troubleshoot not including all the log files when log to flash is enabled
  - User Settings: fixed page to show groups and users if the user has been granted access
  - WebUI: fixed overview page to display active wireless (WLAN) clients
- **CVE Patches**
  - CVE-2021-32292
  - CVE-2022-40617

- CVE-2023-49441
  - CVE-2024-0397
  - CVE-2024-3596
  - CVE-2024-5535
  - CVE-2024-8088
  - CVE-2024-26669
  - CVE-2024-26739
  - CVE-2024-26740
  - CVE-2024-36901
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## [RUTX\\_R\\_00.07.08.3](#) | 2024.08.23

- **Fix**
    - **System**
      - Modem Firmware: Added firmware downgrade protection to EG060K modules
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## [RUTX\\_R\\_00.07.08.2](#) | 2024.08.12

- **Fix**
    - **System**
      - Update Firmware: fixed inconsistent firmware download from FOTA
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## [RUTX\\_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
      - Mobile: fixed illegal instruction fault on modem control services
      - Network: fixed default route not being added for PPPoE connections
    - **Services**
      - Modbus TCP over Serial Gateway: fixed serial connection not working after reboot
      - OPC UA Client: fixed connections not being closed after using testing functionality
    - **System**
      - WebUI: fixed SDK WebUI package compilation
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## RUTX\_R\_00.07.08 | 2024.07.18

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

- **New**

- **Network**

- 802.1X: added client support
- 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
- Hotspot: added Single Sign-on (OIDC) authentication mode
- Hotspot: added Walled Garden blocklist functionality
- 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**

- Channel Analysis: added scan error message when a DFS channel and FCC country are selected
- 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
  - Wireless: added warning when user configures mesh on radio with automatic frequency channel
  - Wireless: added support for wireless MAC-filter MAC ranges
  - Wireless: updated wireless firmware
  - Wireless: changed Radius Accounting port is not required when configuring access point with enterprise encryption
  - Wireless: enabled ACS(automatic channel selection) for 5 GHz radios by default
  - Wireless: refactored radio configuration page layout
  - Wireless: refactored assignment of wireless interfaces MAC addresses, STA interface will always use fixed address
- **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
  - GPS: added send empty feature, which sends zeroed location data after specified GNSS loss timeout

- GRE: increased Inbound and Outbound key limit to 4294967295
- Hotspot: adjusted hotspot user manager page to display active and inactive user sessions
- Hotspot: changed local users to be stored with other types of users
- Hotspot: added 'noc2c' option for enabling client isolation, option is enabled by default
- 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
- Modem Control: disabled canonical mode by default for partial mode. Now full/partial mode input from serial port works the same way
- 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
- Over IP: added label to show how many servers a client is connected to
- Over IP: connect on data feature will not disconnect immediately after data transfer but wait for inactivity timeout
- Over IP: increased TLS handshake timeout to 10 seconds
- 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
- 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
- Tailscale: updated version to 1.68.1
- **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 5.10.217
- libexpat: updated version to 2.6.2
- SSL/TLS: updated version to 3.0.14
- vue: updated version to 3.4

- **Fix**

- **Network**

- Channel Analysis: fixed network list not being updated if a single scan fails
    - 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 an issue where the wrong IP address was used after a DFOTA upgrade
    - Multi AP: fixed Multi AP not working with fast roaming
    - Multi AP: fixed switching to Multi AP mode fails due to encryption

- Multi AP: fixed Multi AP configuration being deleted when switching mode on the same radio device
- Network: fixed overriding MAC address for interfaces that are bridged
- Network: fixed instances of device dropping packets when configured with masquerading disabled and 'Hardware flow offload' enabled
- Realtime Traffic: fixed mobile usage by week day translation by device language
- RelayD: fixed API error when "network" and "lan\_mark" options are not present in a PUT request
- SQM: fixed missing PPP mobile device selection in SQM configuration
- Wireless: fixed wireless scan results sometimes not being returned
- Wireless: fixed 5 GHz Wi-Fi scanning is prohibited when a DFS channel and ETSI regulatory domain is selected
- Wireless: fixed Wi-Fi 5 GHz unsupported channel selection issue on specific widths
- Wireless: fixed wireless status page not updating wireless SSID status after page is opened
- Wireless: removed the ability to have different countries in radio configurations
- Wireless: fixed interface delete when it's unassigned from the wireless interface in access point mode
- Wireless: fixed backticks for WiFi SSID are not allowed in WebUI
- **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
  - GPS: fixed GPS start constellations issue
  - GPS: fixed an issue where NMEA sentences were parsed incorrectly at midnight, resulting in a 24-hour time discrepancy
  - GPS: fixed gpsctl datetime parameter
  - GPS: fixed issue where DPO would not get disabled if GPS is started without DPO
  - GPS: fixed AVL TAVL rule signal value issue
  - GPS: fixed default AVL rule issue where I/O would be ignored by default
  - GPS: fixed BeiDou and QZSS separation in PQGSV sentences
  - GPS: fixed NMEA sentences reading in NMEA collecting
  - Hotspot: fixed uploading more than one custom theme
  - Hotspot: fixed creating Hotspot to SSID that is disabled
  - Hotspot 2.0: fixed Venue name and Operator's name field validations
  - 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
  - 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
- Modem Control: fixed API POST request validation
- NTRIP: fixed NTRIP NMEA generation timestamp and coordinates errors
- NTRIP: fixed configuration reading with several instances added
- 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
- Over IP: fixed issue where serial device does not recover after modem reboot
- Over IP: fixed connect on data initiating TCP connection after few data transfers
- 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
  - Memory Expansion: fixed enable validation
  - 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

## [RUTX\\_R\\_00.07.07.3](#) | 2024.06.25

- **Fix**
  - **Network**

- WebUI: fixed port advertisement change
  - **System**
    - FOTA: fixed config when upgrading from older firmware with keep settings
  - **CVE Patches**
    - CVE-2024-31950
    - CVE-2024-31951
- 

## [RUTX\\_R\\_00.07.07.2](#) | 2024.06.12

- **Improvements**
    - **Network**
      - Zerotier: added backup WAN interface blacklisting if WAN failover is enabled
      - Mobile: improved communication stability with eSIM
    - **Services**
      - SNMP: added bruteforce attack prevention when using SNMP v3 user
      - L2TP: improved reconnect attempt logic
      - Wireless: removed unnecessary information from system logs
    - **System**
      - SSH: removed weak SSH algorithms
      - Telnet: moved to Package Manager
  - **Fix**
    - **Network**
      - BGP: fixed instance migration issues
      - HNAT: fixed cases of unintended forwarding when LAN and WAN subnets overlap
      - HNAT: fixed instances of device misrouting packets to wired LAN when 'Hardware Flow Offloading' was enabled
      - Wireless: fixed connection issues after disabling encryption
      - Mobile: fixed forced APN configuration
    - **Services**
      - DMVPN: fixed duplicate NHRP map entries creation
      - OpenVPN: added fixes for the insecure tls-cert-profile option usage
    - **System**
      - IP Block: fixed blocking of UDP traffic
      - Ledman: fixed WiFi LED indication when WiFi configuration is changed
  - **CVE Patches**
    - CVE-2024-31948
- 

## [RUTX\\_R\\_00.07.07.1](#) | 2024.05.03

- **New**
  - **Network**
    - WebUI: added ESM/EMM message notifications
    - WebUI: added internet status tracking configuration and overview widget
    - LAN: added a new IPv6 LAN status page
    - Static Leases: added a new IPv6 Static Leases page
    - WebUI: added custom domain name resolve option in "DNS" configuration page

- Auto APN: added "uno.au-net.ne.jp" APN for "KDDI" operator
- Auto APN: added 'eprivate010.tisparkle.com' APN for "Sparkle" operator
- QoS: added mobile interface select option
- Mobile: improved connection establish time for uqmi protocol
- Failover: added additional connection flush options
- Wireless: added auto-reconnect disable functionality
- Wireless: added ability to use PKCS#12 certificates for EAP-TLS authentication
- VRF: added initial Virtual Routing and Forwarding support
- **Services**
  - Post/Get: added I/O invert support
  - DLMS Client: added persistent TCP connections
  - Events Reporting: added unexpected shutdown event
  - Modbus Client: added 64bit data types
  - IPerf3: added iPerf3 to Package Manager
  - DNP3 Outstation: added I/O objects
  - Modbus Serial Server: added option 'Mobile data type'
  - TR-069: added PCI, LAC, TAC, EARFCN and Neighbour cells data to Device.MobileInfo node
  - Hotspot: added domain and subdomain options for external landing page
  - Over IP: added option 'Keep alive enable'
- **System**
  - WebUI: added the ability to generate random passwords for password input fields
  - WebUI: added reset to "Factory defaults" option
  - System: changed firmware certificate verification tool
  - IP Block: added time-based login attempt blocking
  - WebUI: added firmware update notification support
  - PAM: added the ability to set port for TACACS+
  - Logging: added multiple remote syslog servers support
- **Improvements**
  - **Network**
    - Static Leases: added possibility to use MAC with wildcard
    - WebUI: added ability to disable modem update notifications
    - Topology: changed network devices scanning application
    - WebUI: improved design of Status - LAN page
    - DHCP: simplified DHCP configurations in other pages and moved full DHCP configuration to a separate page
    - DHCP: removed default disabled server configuration for WAN interface
    - WebUI: simplified data entry of DNS forwardings by separating hostname and IP address fields
    - BGP: added Virtual Routing and Forwarding (VRF) support
    - BGP: added multiple BGP instance support
    - WebUI: adjusted responsive design breakpoints
    - HNAT: improved WAN->LAN packet offloading
    - WebUI: added additional field for warning threshold to allow entering value as percentage in Mobile Data Limit section
    - Mobile: improved mobile services stability when SIM card is lost during SMS sending
    - Mobile: updated bridge/passthrough mode logic to flush ARP and add static ARP entry if MAC is specified
    - Mobile: improved SIM switch logging and protection on failure to acquire data
    - WebUI: added partial data loading to APN database page



- Mobile: improved SMS sending timeouts during network issues
- Mobile: improved connection handling when data limit is reached
- Mobile: added metric to default gateway when using passthrough mode
- WebUI: added validation for 2 same APNs
- WebUI: updated Band selection field to show duplex modes in Mobile General page
- WebUI: added an information icon and disabled delete button for wireless instance when it is associated with a hotspot interface
- Wireless: improved hidden AP handling when showing scan results
- Wireless: added a range of channels to 5 Ghz radio to use as fallback if it drops after radar detection when using DFS channel
- Dnsmasq: updated dnsmasq to version 2.89
- **Services**
  - Wireguard: added option to bind tunnel to a specific interface
  - OPC UA Client: added limits (10 servers, 20 groups, 50 nodes per server, 50 values per group)
  - DLMS Client: increased maximum count of connection sections to 30
  - DLMS Client: added short name referencing
  - SNMP: set strict default community access when IPv6 address is used
  - SNMP: improved sysName OID to set device's hostname
  - Network Shares: moved to Package Manager
  - Auto Reply: added available SMS message parameters to "Message text" input
  - Modbus Client: allow using diacritics in SMS alarms
  - Hotspot: moved MAC blocking option from Access Control to Hotspot page
  - WebUI: added MAC authentication support when using RADIUS authentication mode
  - WebUI: moved licenses to footer
  - AVL: added HDOP in TAVL settings
  - AVL: added ADC and ACL I/O types for secondary AVL rules
  - NTRIP: added a limit of 20 configurations
  - OpenVPN: added the bridge option for selecting the network device to be bridged with
  - OpenVPN: added possibility to create more than one TAP client
  - SSTP: updated package version to 1.0.19
  - Mosquitto: updated package version to 2.0.17
  - Tailscale: updated package version to 1.62.1
- **System**
  - WebUI: added more strict password requirements for restoring backup
  - SMTP: added option to either not verify SMTP server or upload SMTP server's CA file to verify authenticity
  - WebUI: Added the ability to choose the ROOT CA when using certificates from the device
  - WebUI: unified time format to ISO8601 across the entire WebUI
  - WebUI: added ability to choose imported certificate and key as 'Server certificate' and 'Server key' in 'Access Control'
  - WebUI: added 'Hosts' and 'IP Addresses' options for 'Simple' certificate generation and certificate signing
  - WebUI: changed firmware update option to server as a default option
  - WebUI: improved first login password change logic
  - Certificates: updated Root CA certificates
  - GPL: added offline package preparation command for GPL builds

- Speedtest: added multiple connections support to improve accuracy
- Libcap: updated package version to 2.69
- **Fix**
  - **Network**
    - Topology: fixed showing interfaces with assigned VLAN
    - WebUI: fixed static routing creation for GRE instance
    - Network: fixed DHCPv4 relay mode enabling
    - Mobile: fixed PIN code set after modem restart
    - Mobile: fixed an issue where using SIM change command on one SIM slot modems would reset connection
    - Mobile: fixed an issue where message storage would not be checked correctly
    - Mobile: fixed temperature value sometimes returning 0
    - Mobile: fixed denied roaming flag set
    - SIM Switch: fixed an issue when low "Check interval" was causing connection to fail
    - SIM Idle Protection: fixed problem when the SIM slot remained unchanged
    - Mobile: fixed an issue where SIM switch would fail when switching to PUK blocked SIM
    - Mobile: fixed an issue where sim switch would be executed twice immediately causing sim to not be switched
    - Mobile: fixed SIM PIN saving for non primary SIM cards
    - Failover: fixed Failover missing active rules when using multiple source and destination IP addresses
    - Failover: fixed an issue where failover would not function correctly while using a mobile interface
    - WebUI: fixed network and failover interface metric sorting synchronization issue
    - WebUI: fixed failover rule policy save issue with newly added WAN interface
    - Interfaces: fixed failover value for new WAN being taken from WAN that was just deleted
    - Wireless: fixed Wifi Scanner not saving scanned WiFi SSIDs
    - Wireless: fixed missing CCMP-256 and GCMP-256 cipher types in scan results
    - Wireless: fixed missing GCMP-256 cipher when using WPA3-EAP encryption in Client mode
    - Wireless: fixed skipped MAC address value for interface in Client mode
    - Wireless: fixed setup issue when client or mesh interfaces are configured on both radios
    - Wireless: fixed changing regulatory domain configuration
    - WebUI: fixed mesh nodes not being shown in Status->Wireless->Interfaces page
    - WebUI: fixed proposed configuration settings when connecting to a mesh point network
    - MultiAP: fixed client not switching to another AP if incorrect password was provided
    - HNAT: fixed multicast packet leakage when 'Hardware flow offloading' is enabled
  - **Services**
    - Modbus Client: allow using negative floating point values in requests
    - Azure IoT Hub: fixed Data to Server minor WebUI dependency bugs
    - Data to Server: fixed DLMS data formatting
    - Data to Server: fixed Network link state data display
    - DLMS Client: fixed segfault while reading profile generic COSEM object
    - DLMS Client: fixed profile generic entries reading
    - DLMS Client: fixed application memory allocation issues

- SSTP: fixed route adding when default route is enabled
- SNMP: fixed VLAN OID naming
- OpenVPN: added fixes for instance status tracking functionality
- OpenVPN: resolved uptime counting issues
- PPTP: fixed PPTP instance deletion problem
- Azure IoT Hub: fixed 'contentType' telemetry message parameter
- Hotspot: fixed password validation for locally created users and signed-up users
- Hotspot: fixed session invalidation after deleting registered user
- Hotspot: fixed SMS OTP password reuse
- Hotspot: fixed firewall rule creation
- PPTP: fixed problem related with routes when failover is enabled
- USB Tools: fixed to not display a non-existent MSD
- Modbus Client: fixed issue where service freezes when SMS alarm is sent
- Modem over serial: improved robustness against modem reboots
- Modbus TCP Over Serial Gateway: fixed gateway returning corrupted data with larger baud rates
- Modbus Server: updated 'GPS fix time' register to store the UTC date and time of GPS position
- WebUI: fixed data loading error in Input/Output > Post/Get page
- UPnP: updated package version to 2.3.4
- **System**
  - NTP Client: fixed 'Count of time synchronizations' execution when synchronization to mobile operator is chosen
  - Package Manager: fixed spinner message when restarting network after package upload or download
  - Package Manager: fixed supported devices check when installing a package from server
  - WebUI: fixed language install from uploaded package after upgrade with keep settings
  - WebUI: fixed an issue when a user was not logged out after changing profiles
  - Telnet: fixed segmentation fault during concurrent connections
  - CLI: fixed enter key issue on mobile chromium based browsers
  - System Users: fixed SSH session close after deleting user or disabling SSH access
  - Profiles: fixed profile migration with installed packages
  - JVM: fixed package installation
  - WebUI: fixed Hotspot log page table search functionality
  - Speedtest: fix missing download speed on some servers
  - PAM: updated libpam to version 1.6.0
- **CVE Patches**
  - CVE-2022-4603
  - CVE-2022-23308
  - CVE 2022-45061
  - CVE-2023-0466
  - CVE-2023-6129
  - CVE-2023-7042
  - CVE 2023-24329
  - CVE 2023-27043
  - CVE-2023-42366
  - CVE-2023-46218
  - CVE-2023-46219
  - CVE-2023-46752

- CVE-2023-46753
- CVE-2023-48795
- CVE-2024-2397
- CVE-2024-25062
- CVE-2024-27913
- CVE-2024-22365

## [RUTX\\_R\\_00.07.06.10](#) | 2024.04.04

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- **Fix**
  - **System**
    - Ledman: fixed memory leak

## [RUTX\\_R\\_00.07.06.8](#) | 2024.03.25

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- Firmware **R\_00.07.06.8** was removed due to an issue with inefficient memory allocation for LED control.
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- **New**
  - **WebUI**
    - Added eSIM support
- **Improvements**
  - **Services**
    - IPsec: disabled libgmp in favor of openssl
    - IPsec: updated Strongswan to 5.9.6
- **Fix**
  - **Services**
    - IPsec: increased charon load timeout
    - IPsec: fixed loading of large private keys

## [RUTX\\_R\\_00.07.06.6](#) | 2024.03.04

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- **New**
  - **Services**
    - Added domain and subdomain options for external landing page in Hotspot
- **Improvements**
  - **System**
    - Minified \*.svg WebUI files to save space on the device
    - Removed unused easy-rsa package to increase free space
- **Fix**
  - **Network**
    - Fixed mobile daily data usage representation
    - Fixed the issue with Wireless bgscan functionality not operating correctly
  - **Services**
    - Fixed OverIP serial utility issue where after some time server mode can't accept incoming connections anymore

## [RUTX\\_R\\_00.07.06.5](#) | 2024.02.21

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- **New**
  - **Network**
    - Added support for multi line USSD
- **Improvements**
  - **Network**
    - Improved DMZ to use its source zone on port forwards creation
  - **System**
    - Updated netifd version to 2024-01-04
    - Updated PPP package version to 2.4.9
    - Updated E2fsprogs package version to 1.47.0
    - Updated Musl package version to 1.2.4
- **Fix**
  - **Network**
    - Fixed possible packet corruption on RUTX devices with mobile
    - Fixed an issue where DNS resolution failed for wireless clients connected to an access point configured on a specific VLAN
  - **Services**
    - Fixed Modbus TCP Over Serial Gateway crash occurring at start up in some edge cases
    - Fixed tailscale VPN firewall zone creation issue
    - Fixed custom GPS NMEA prefix
  - **WebUI**
    - Fixed action descriptions in the traffic rules table
  - **System**
    - Fixed WiFi LED indication when access point is turned off
    - Fixed year 2038 problem with time counter overflow

## [RUTX\\_R\\_00.07.06.3](#) | 2024.01.17

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- **Improvements**
  - **Services**
    - Added multiple hosts support for GPS HTTPS, NMEA and AVL services
    - Increased DLMS Client connection timeout for TCP sockets
- **Fix**
  - **Services**
    - Fixed DLMS Client memory leak with profile generic COSEM class
    - Fixed function 5 not working with high register numbers in MQTT Modbus Gateway service
  - **WebUI**
    - Fixed Events Log sorting and search features
  - **System**
    - Patched CVE-2024-0193 vulnerability
    - Patched CVE-2023-51779 vulnerability
    - Updated OpenSSH to 9.6p1 version, fixed CVE-2023-51385 and CVE-2023-51384
    - Fixed profile migrations, added error handling when trying to change profile while

it is still applying

## [RUTX\\_R\\_00.07.06.1](#) | 2024.01.04

- **Fix**
  - **Services**
    - Fixed issue with NTPclient zombie processes

## [RUTX\\_R\\_00.07.06](#) | 2023.12.20

- **New**
  - **Network**
    - Enabled IPv6 by default for mobile interfaces
    - Added operator blacklisting and whitelisting based on mobile country code
    - Added SIM card not inserted event in Events Log
    - Added 802.11v BSS Transition Management and 802.11k Radio Resource Measurement
  - **Services**
    - Added OPC UA Server
    - Added the ability to set port for TACACS+ in PAM service
    - Added switch to enable using root certificate authority for MQTT alarms in Modbus Client services
    - Added new alarm action "Ubus event" in Modbus Client services
    - Added new input "Modbus alarms" in Data to Server service
    - Added wget ping subtype support in Events Reporting service
    - Added new I/O SNMP OID that returns numeric I/O state
    - Added new Post/Get service action "mobile\_sim\_pin" for changing used SIM PIN code on the device
    - Added TLS support for OverIP serial functionality
  - **WebUI**
    - Added Tailscale VPN support
    - Renewed user interface design
    - Added network interface name change functionality
    - Added last resort configuration option for multiwan policy rules
    - Added indication when new modem firmware is available
    - Added mobile connection establishment display in mobile status page
    - Added default value for "Reset threshold" field in Low Signal Reconnect feature
  - **System**
    - Added ability to enable/disable SSH access for specific users in System Users
    - API support
- **Improvements**
  - **Network**
    - Disabled operator scan when SIM card is not inserted
    - Updated carrier aggregation value to be shown as active/inactive
    - Changed default MTU to 1500 for Mobile interfaces
    - Added two radio support on one SSID in Wireless
  - **Services**
    - Expanded GRE VPN keep alive functionality to disable routes from unreachable tunnel
    - Added PKCS#12 certificate container authentication method in IPsec VPN
    - Added TLV message\_payload support for SNMP service

- Added Purple.ai configuration profile
- Replaced option "No leading zeros" with "Remove all zeros" in Over IP serial functionality
- Added possibility to assign mobile interface in SQM service
- Added reboot on storage device disappearance and re-appearance
- Added additional anonymous phone number validation in Mobile Utilities service
- Added "N/A" signal strength response in DNP3 service if SIM card is not inserted
- **WebUI**
  - Improved Events Log page loading by adding asynchronous pagination
  - Removed requirement for Diffie-Hellman parameters in OpenVPN service
  - Added improvements for creating OpenVPN IPv6 configurations
  - Added auto redirect after changing router's IP address or port
  - Added "Interface" dropdown for interfaces selection in Wake on LAN service
  - Increased Data to Server service MQTT topic length limit to 65535 characters
  - Added OSPF external routes section to Status page
  - Moved device menu entry "Reboot" to header menu
  - Added indication in Overview, Status -> Mobile and WAN pages when mobile data limit is reached
  - Updated Operator state field to show if modem is in limited service
  - Combined Mobile Usage day, week, month and total pages into one
  - Updated Realtime data -> Mobile signal page design to show all available modems and their bands data in one graph
  - Added message when SIM card requires PIN/PUK code in Status -> Mobile page
  - Moved WiFi scanner page to Services section
- **System**
  - Added Mosquitto CVE patch 2023-28366
  - Added Mosquitto CVE patch 2023-3592
  - Updated hostapd version to 2023-09-08
  - Updated cURL version to 8.4.0
  - Updated kernel version to 5.10.199
  - Updated Mac80211 version to 6.1.24
  - Added RMS data display to generated troubleshoot
  - Added downloaded Package Manager packages list to generated troubleshoot
  - Added process activity load list to generated troubleshoot
  - Changed default OPKG feed to use Teltonika's URL
- **Fix**
  - **Network**
    - Fixed DMVPN firewall rule creation issues
    - Fixed RUTX VLAN keep settings issue when WAN port configuration are overwritten with 1st vlan
    - Fixed Failover missing active rules when using multiple source and destination IP addresses
    - Fixed mobile service crash due to buffer overflow while reading partially overwritten SMS
    - Fixed an issue with Manual APN connection making attempts too rapidly
    - Fixed deny data roaming functionality when transitioning between roaming and home operator network
    - Fixed network disconnection on mobile network detach and DHCP lease loss situations
    - Fixed VoLTE configuration after modem reboot

- Fixed Mobile interface bridge and passthrough mode connectivity loss
- Fixed an issue where rarely PIN code would get removed after SIM switch
- Fixed mobile operator list being not updated after changes in WebUI
- Fixed issue where mobile interface was unreachable after device reboot or interface restart while using Failover service
- Fixed unstable Wireless mesh connection
- Fixed low Wireless mesh throughput
- Fixed concurrent Wireless STA and AP functionality on 5 GHz band
- **Services**
  - Fixed SSH module enable in PAM service
  - Added minimum free space check when saving logs to flash in Logging service
  - Fixed "Set multiple coils" function sending too many bytes in Modbus Client services
  - Fixed multiple Events Reporting messages being sent when Firewall configuration is changed
  - Fixed VRRP instances advertising wrong virtual IPs
  - Added Hotspot information in SNMP MIB file
  - Fixed registered Hotspot Local Users showing random username
  - Fixed selection of MAC Auth for LAN interfaces in Hotspot service
  - Fixed inconsistent Hotspot login behaviour when using MAC Auth with Password
  - Fixed instance shutdown after last local user deletion
  - Fixed Cumulocity app not sending any telemetry data
  - Fixed Call Utilities failure when caller id is hidden during a call
  - Fixed AVL with poor mobile connections
  - Fixed default profile SMS Utilities I/O status rule configuration in Profiles functionality
  - Fixed serial timeout not working in Over IP serial functionality
  - Removed "Echo" option in Modbus TCP over Serial functionality
  - Fixed CRC verification failing when CRC is correct in Modbus TCP over Serial functionality
  - Fixed crash when getting unexpected messages from RTU in Modbus TCP over Serial functionality
- **WebUI**
  - Fixed side menu style issues when Japanese language is used
  - Fixed displaying of vendor names in Topology page
  - Fixed language packs being selectable when still in Package Manager queue
  - Added ability to configure IPv6 BGP peer
  - Fixed RelayD configuration issues after keep settings
  - Fixed realtime graphs responsive design issues
  - Fixed Network Shares users deletion
  - Fixed not all LAN interfaces shown in dropdown in Hotspot service page
  - Fixed modem updater legacy firmware flashing
  - Fixed wireless realtime data to show signal as unavailable with no connected clients
  - Fixed WiFi scanner disconnecting AP users
  - Fixed setup wizard errors in Wireless configuration page
- **System**
  - Patched FRR CVE-2023-38406
  - Patched FRR CVE-2023-38407
  - Patched FRR CVE-2023-41358
  - Patched FRR CVE-2023-41360



- Patched FRR CVE-2023-41909
- Patched FRR CVE-2023-47234
- Patched FRR CVE-2023-47235
- Patched OpenSSL CVE-2023-3446
- Patched OpenSSL CVE-2023-3817
- Patched LibXML2 CVE-2023-39615
- Patched LibXML2 CVE-2023-45322
- Patched FFMPEG CVE-2021-28429
- Patched FFMPEG CVE-2022-48434
- Patched dnsmasq CVE-2023-28450
- Fixed running out of space when SSHFS is mounted in /tmp while generating troubleshoot
- Fixed WebUI access after upgrading from legacy RutOS version

## [RUTX\\_R\\_00.07.05.4](#) | 2023.11.09

- **Improvements**

- **WebUI**

- Improved asynchronous pagination in events log pages
    - Optimized Overview page load
    - Added resource loading cancellation after switching to different page

## [RUTX\\_R\\_00.07.05.3](#) | 2023.10.30

- **New**

- **System**

- Added support for GD5F2GM7 and GD5F2GQ5 GigaDevice NAND flashes

- **Fix**

- **Network**

- Improved device stability when using IPv6 for modem connections

## [RUTX\\_R\\_00.07.05](#) | 2023.10.19

- **New**

- **Network**

- Added "shared.m2m.ch" APN for Swisscom IoT operator to APN database
    - Added "gamma" APN to auto-APN database
    - Added "soracom.io" APN for Soracom operator to APN database
    - Added "simbase" APN to auto-APN database
    - Added "pnd" APN for Pond IoT to auto-APN database
    - Added "spitfire1" APN for Spitfire operator to APN database
    - New argument in "gsmctl" CLI command for Carrier aggregation
    - Numeric mode support for modem AT commands
    - Enabled dynamic MTU configuration on mobile interfaces by default
    - WDS support for wireless bridging

- **Services**

- DLMS Client package
    - 7zip package
    - TincVPN package
    - Added router uptime and mobile connection uptime data parameters to SNMP
    - Custom MQTT publisher/subscriber topics definition support

- Alternative configuration file upload support for MQTT Broker service
- Device Provisioning Service support for Azure IoT Hub service
- Added DPO configuration support in GPS
- Added more mobile usage parameters to SNMP
- SIM Idle Protection package
- AVL collection based on minimum accuracy for GPS service
- **WebUI**
  - Firewall status page
  - Page search feature
  - Network Topology page
  - "Allow insecure connection" option for MQTT TLS protocol in Data to Server service
  - Package Restore feature Enable/Disable option
  - Hotspot client connection/disconnection trap option for SNMP service
  - Added Events log trap option for SNMP service
  - Confirm dialog when cancelling a verified package in Package Manager
  - "Bridge ALPN" option for Bridge configuration in MQTT Broker service
  - New subtypes of events that specify a specific port on "Events Reporting" and "SNMP Trap rules" pages
  - Specific firmware packages repository link in Package Manager page
  - Ability to enter decryption passphrase for encrypted private keys
  - "Reconnect" button in RMS page
  - New event "Device startup completed" in Events Reporting service
  - Port status and configuration page
  - IP6 table configuration option for DHCPv6 protocol in Network -> WAN page
  - Wireless interface QR code generator
  - Channel analysis page Status -> Wireless -> Channel Analysis
  - Disabled direct network interface deletion when it is associated with a wireless interface
  - Limited to a single section configuration and added IP address field for Relayd service
  - "Fast roaming" configuration for Wireless service in Client mode
  - Updated Status->Network->Wireless page to display interfaces as cards and added ability to filter connected clients by selected interface
  - "Write to config" option for SIM Switch action in I/O Juggler service
  - Configurable GPS NMEA prefix
  - Modem Debug page
  - APN database management page added to package manager
  - Added "Message forwarding" option in SMS Rules page when rule type is "Execute custom script"
  - Ability to unblock SIM card and insert SIM PIN in Overview page
  - New SMS rules "Reset mobile connection" and "Reload config"
  - "SMS limit clear due" display in Overview page
  - Added modem temperature to System -> Status page
- **System**
  - Mechanism to rebrand WebUI using GPL
  - Possibility to create web applications with closed-source GPL
- **Improvements**
  - **Network**
    - Moved FRR VTYSH package to package manager

- Made newly created Firewall Traffic, NAT rules and Port Forwards disabled by default
- Improved Interfaces to enable IPv6 DHCP server when mobile v6 or v4v6 PDP type is set
- Improved IPsec performance throughput
- Improved auto APN selection
- SMS sending event is now logged into events log
- Improved roaming control
- Removed unused APN usernames and passwords from auto-APN database
- Added connection to the operator when no mobile interfaces are active
- Improved VoLTE management functions
- Improved cases where Low Signal Reconnect sometimes executed prematurely
- Improved wrong SIM PIN remove logic
- Added automatic reconfiguration when switching between wireless interface modes
- Added automatically generated name option for new network
- **Services**
  - New reworked Data to Server
  - UPNP moved to package manager
  - Added IPv6 support for Modbus TCP Server/Client services
  - Refactored Azure IoT Hub service
  - Improved resiliency to timeouts in Modbus Client service
  - Added PDU data type to Modbus read requests
  - Added new formatters for MQTT alarms in Modbus Client service
  - Added main section to make test functions independent in Modbus Client service
  - Improved WAN IP register reading time in Modbus service
  - Sped up default profile and profile template generation for Profiles functionality
  - Optimized profile change time for Profiles functionality
  - Added IPv6 support for Stunnel VPN
  - Added MAC blocking for client connections after set amount of failed login attempts in Hotspot service
  - Improved TCPdump by allowing to capture packets from any interface
  - Added OSPF support for DMVPN
  - Updated Hotspot password hashing to sha512
  - A single SMS message with multiple PDUs is sent instead of multiple SMS messages in Email to SMS service
  - Allowed connection to SMPP server using IPv6 address
  - Extended IP unblock action functionality in SMS Utilities
  - Increased allowed Email to SMS service message size to 61440 bytes
  - Added parameter "%gs" that sends GPS data in formatted info message
  - Updated AVL to prefer checking network status through Failover if configured
  - Added I/O pin name to trap notification message
- **WebUI**
  - Reorganized menu
  - Updated header design
  - Split Interfaces configuration in Advanced mode into two pages: WAN and LAN, identically as in Basic WebUI mode
  - Moved Interfaces IPv6 configuration into separate tab
  - Added client/server status information in OpenVPN instance overview page
  - Added more IPv6 information to interface status in Interfaces page
  - Removed "Custom delegated IPv6-prefix" field from DHCPv6 configuration in

## Interfaces page

- Disabled DHCPv6 interface editing while in basic mode
- Refactored custom DHCP options into separate modal
- Added automatic start and end IP allocation for DHCP server configuration in Interfaces
- Added client/server status information in L2TP VPN page
- Added "MTU" field to L2TP client configuration page
- Added CHAP, PAP and MSCHAP-v2 authentication fields to L2TP instance configuration
- Added more detailed IPsec VPN status information
- Encryption AES-256-CBC added as default in OpenVPN
- Added "Authentication algorithm" support to OpenVPN configuration with static key mode
- Added GRE (DMVPN) VPN tunnel source support to any instead of specific interface
- Improved Hotspot landing page theme package removal
- Added upload and download theme functionality to Hotspot Landing page
- Improved ZeroTier VPN bridge configuration
- Added ability to adjust order of rules in Firewall page
- Added IPv6 RAW table to be displayed in Status -> Firewall
- Improved file upload component's visual appearance
- Change "Allow anonymous" option default value to 0 in MQTT Broker
- Added option to specify "Client ID" in MQTT Publisher
- Added functionality to select specific interface in Web Filter service
- Allowed to select FTP server subfolder in Traffic Logging service
- Renamed various service master/slave naming convention in config files, package names and webUI to client/server
- Added "Create static" button in Status -> Network -> LAN which bind DHCP lease for device
- Updated Status -> Network -> Mobile page layout
- Added bandwidth, provider in Status -> Network -> Mobile page
- Added colors for signal strength values in Status -> Network -> Mobile page
- Added frequency, pcid, mcc, mnc and LAC values in Status->Network->Mobile page
- Refactored network type selection in Network -> Mobile -> General page
- Serving cell information is not returned anymore when SIM card is not inserted
- Changed default "Check interval" option value in Network -> Mobile -> SIM Switch page
- Added button in a Scanned operators table which allows to add an operator to the operator list
- Added search bar in Mobile Utilities -> SMS Utilities page
- Added SMS sent and limit count to Network -> Mobile -> General page
- Added GPS longitude and latitude data in TR069
- Updated Mobile Signal graphs to show EC/IO and RSCP values when network type is 3G
- Added DFS channel marking in Network -> Wireless
- Show wireless MAC address even when interface is inactive in Status -> System page
- Merged Multi AP configuration to wireless interface edit modal
- Added automatic network switch to bridge if selected in Wireless configuration
- Added default encryption for newly created wireless interfaces

- Simplified "802.11r Fast Transition" configuration options in Wireless interface configuration
- Updated "Change SIM" action type to display configured SIM target in I/O Juggler  
-> Actions overview page
- **System**
  - Updated kernel version to 5.10.188
  - Updated UCI version to 2021-10-22
  - Updated SSHFS version to 3.7.1
  - Updated FRR suite to 8.4.2
  - Updated cURL version to 8.2.0
  - Updated TCPdump version to 4.99.4
  - Updated C-ares version to 1.19.1
  - Updated iproute2 version to 5.19.0
  - Updated libubox package version to 2021-08-19
  - Added CVE patch CVE-2023-2650
  - Added additional firmware information in CLI prompt banner
  - Connection mode LED now blinks on data transfer
  - Changed "routename" to "devicename" in system config file
  - Made all clients get disconnected out once dropbear service is disabled
  - Improved firmware downgrade restrictions for certain regions
  - Device name is now displayed in browser tab when in WebUI login page
  - Added NF conntrack information in generated troubleshoot archive
- **Fix**
  - **Network**
    - Fixed UDP Broadcast Relay service crashing on start without physical network device
    - Fixed wrong or empty WAN state info
    - Fixed connection tracking for main interface in Failover
    - Fixed SMS limit period migration
    - Fixed SMS limit size breaking various functionality
    - Fixed custom IPv6 DNS option not overriding default DNS from operator
    - Fixed an issue with blacklist and whitelist connection
    - Fixed multipart SMS handling
    - Fixed wrong SIM state display when SIM is fully blocked
    - Fixed incorrect virginmobile APN MNC
    - Fixed mobile operator scanning fault when no mobile interfaces are active
    - Fixed mobile interfaces generating multiple events on mobile connection
    - Fixed PDU SMS parsing when operator provides user data header in single part SMS
    - Added scheduled data limit clear for inactive mobile interfaces
    - Fixed Wireless AP and STA functionality for 5GHz band
    - Fixed Wireless scanning issue with certain configuration
    - Fixed Wireless transmit power changing without user input after saving different country code
    - Fixed clients isolation functionality in Wireless
    - Fixed Wireless STA authentication failure in case of channel change
    - Fixed Multi AP startup when changing Multi AP configuration in Wireless
    - Fixed client connection to EAP Wireless network
  - **Services**
    - Fixed reconnecting to inactive connections for Modbus Server service

- Fixed Modbus Client response after reboot write request
  - Fixed Modbus Server to show error when trying to get operator name without SIM
  - Updated Modbus Client to handle large numbers of schedule rules, when frequency is set to schedule (Daini)
  - Fixed "Input" rule displaying incorrect and missing ports in Network -> Firewall -> Traffic Rules
  - Fixed WireGuard VPN endpoint resolving problem
  - Peer cache is no longer deleted when ZeroTier service is restarted
  - Fixed RMS data collection about the list of devices connected to WiFi
  - Fixed showing incorrect Internet state in RMS
  - Fixed WiFi client info display in RMS
  - Implemented error handling when device is blocked or unrecognized by RMS
  - Fixed L2TP client sometimes not adding routes on successful connection
  - Fixed NTP time sync with browser functionality in some edge cases
  - Fixed reinstalled packages" verification when device name is changed
  - Fixed an issue where signal query would return invalid value instead of error in case of no signal in MQTT Publisher service
  - Fixed OpenVPN firewall rule creation for both IPv4 and IPv6
  - Fixed OpenVPN server crash loop after changing authentication from TLS to Static Key
  - Fixed IPsec VPN connection problem with small lifetime values
  - Fixed IPsec "Default Route" not working when Flow Offloading is enabled
  - Fixed an issue where system directory could be used as a mount point in SSHFS service
  - Fixed IP block feature to unblock an OpenVPN IP address on successful authentication
  - Fixed package installation process bug when packages have different architecture names
  - Added "bearer token" authentication functionality in Dynamic DNS
  - Fixed MQTT Broker "local\_port" option keep settings migration
  - Remove public keys when key-based authentication is disabled in Access Control
  - Fixed "Parity" field "Mark" and "Space" options being ignored in DNP3 Serial services
  - Corrected SNMP MIB file syntax according to standards
  - Fixed returned port count in SNMP
  - Fixed disabled CLI remote access taking up a session slot
  - Fixed user deletion in Network Shares service
  - Fixed router reboot inconsistencies after Storage Memory Expansion
  - Fixed received SMS messages parsing with trailing whitespaces
  - Fixed VPN status rule message text in SMS Utilities
  - Fixed UDP payload size in GPS AVL
- **WebUI**
    - Fixed empty events cards in Overview page when no content is available
    - Fixed modal form inputs not clearing upon closing after nested modal is saved
    - Fixed select menu closing when selecting custom option
    - Fixed multi select expanding table row when adding new values
    - Fixed global section caching after deleting a section in a table
    - Fixed unpredictable search logic in tables
    - Fixed interfaces reordering by metrics in Failover page
    - Removed ability to select ports on ICMP and ESP protocol in Failover page
    - Fixed wrong status when interface is disabled in Failover page

- Fixed firewall zone and rule creation/deletion on VPN configuration creation/deletion
- Fixed STP enabling issue in Interfaces
- Fixed EIGRP status info in Dynamic Routes
- Fixed issue with custom DHCP options where you could not have multiple values per rule
- Fixed Routing/NAT Offloading section display in Network -> Firewall -> General Settings when device is not supported
- Fixed SSH/HTTP/HTTPS/ICMP setting in Network -> Firewall -> Attack Prevention page
- Fixed failing Firewall rules with united protocol formats
- Fixed zone select component not closing options menu when selecting an option in Firewall pages
- Fixed memory leak when cancelling file uploads on Chromium-based browser
- Fixed group settings saving by removing deprecated ":section" routes in Administration -> User Settings -> System Users
- Fixed allowing IDs above 247 in Modbus Client service
- Fixed selecting SIM in Modbus Client service Alarms
- Fixed Modbus Alarm telephone number limit
- Fixed to show available options for test requests on error in Modbus Client service
- Fixed Modbus Alarm I/O pin display values
- Fixed issue when creating instance named "gre" does not show in GRE VPN
- Remote endpoint field now allows underscore character in IPsec VPN
- Fixed ZeroTier wrong service status display in Status -> Services
- Fixed problems with L2TP/PPTP VPN firewall rules automatic creation
- Fixed problem related to the enable/disable toggle in OpenVPN instance overview page
- Added fixes for key-direction missing problem when uploading OpenVPN config file
- Fixed login page read-only inputs after custom user logout
- Fixed issue when double clicking firmware upgrade cancel button returned error
- Fixed Package Manager prompt message to appear when package requires network restart
- Fixed showing in queue packages when they contained special symbols in the Package Manager page
- Fixed various visual Side Widget bugs
- Fixed Data to Server DNP3 filter from flash display
- Fixed incorrect source data displayed in Realtime Data -> Connections table
- Fixed memory expansion confirmation prompt title
- Fixed incorrect configuration saving in Hotspot 2.0 service
- Disabled password hashing for new user creation in Hotspot service
- Fixed Hotspot landing page themes saving bug
- Fixed test email sending to more than one recipient in Events Reporting page
- Fixed VLAN OID values in SNMP service
- Output proper error message in case of hardware not being supported in Firmware Upgrade
- Fixed being able to open side widget when user does not have read access
- Fixed profile creation when current configuration is not present
- Fixed wrong protocol data display in "Access control" page
- Fixed LAN interfaces not showing up before WAN interfaces in Status -> Realtime Data -> Traffic

- Fixed incorrect Bluetooth details modal size
- Updated to display "MAC address" on device details page
- Fixed disabling DLNA service when USB drive is removed
- Fixed error when user has no write permissions in Speed Test page
- Fixed "Clear Collect Data" button logic to not clear overall mobile usage info
- Fixed "Used data" showing large negative numbers for disabled mobile interfaces with Data Limit enabled
- Fixed carrier aggregation information when no connection is made or SIM card is not inserted
- Changed representation of mobile cell ID from hexadecimal to integer type
- Fixed Mobile Utilities "SMS forwarding to HTTP" URL generation
- Fixed an issue where sometimes bands were not represented correctly on certain modems
- Fixed provider information and IMSI value representation when SIM and modem cannot provide this information
- Fixed mobile pages throwing 404 error when modem disconnects
- Fixed WebUI showing mobile connection when no SIM card is inserted
- Updated Network -> Wireless interface add and delete button visibility in basic mode
- Fixed Wireless Multi AP incorrect SSID list after removal of an instance
- Fixed MAC address filtering in Network -> Wireless page to list only connected WiFi devices
- Fixed GPS AVL I/O trigger option filtering
- **System**
  - Patched CVE-2023-0386 vulnerability
  - Patched CVE-2023-0464 vulnerability
  - Patched CVE-2023-0465 vulnerability
  - Patched CVE-2023-2602 vulnerability
  - Patched CVE-2023-3772 vulnerability
  - Patched CVE-2023-3773 vulnerability
  - Patched CVE-2023-4128 vulnerability
  - Patched CVE-2023-33476 vulnerability
  - Patched CVE-2023-28484 vulnerability
  - Patched CVE-2023-29469 vulnerability
  - Patched CVE-2023-31490 vulnerability
  - Patched CVE-2021-36369 vulnerability
  - Patched CVE-2023-40283 vulnerability
  - Patched CVE-2023-48174 vulnerability
  - Delayed Custom Scripts execution on boot, after storage devices are mounted
  - Fixed Custom Scripts permissions after save
  - Changed certificate expiry calculation mechanism to fix Y2K38 bug
  - Fixed downloading of certificates that have a space in their name in Administration -> Certificates -> Certificates Manager
  - Fixed Events Log database rotation to prevent log partition space exhaustion
  - Fixed duplication and sorting of all events IDs in Events Log
  - Fixed FOTA crash when current hours is with leading 0
  - Fixed crontab job removal after disabling FOTA
  - Changed Mosquitto build options to not include cJSON library
  - Fixed device name resetting to default upon refresh in Administration
  - Fixed backup upload validation with memory expansion



## [RUTX\\_R\\_00.07.04.5](#) | 2023.07.24

- **Improvements**
  - **Network**
    - Improved MBN reselection algorithm when switching SIM
    - Improved SIM card change detection algorithm
    - Improved connection establishment speeds after sim switch
    - Added metric field support in BGP Route-maps page
  - **WebUI**
    - Updated SIM slot labeling in modem card Overview page
- **Fix**
  - **Network**
    - Fixed an issue with MBN selection when device is started for the first time
    - Fixed an issue where MBN activation would not be successful
    - Fixed service provider parsing when operator does not provide all fields for Quectel modems
    - Fixed a condition where mobile connection would not get established after a SIM switch
    - Fixed an issue with SIM switch causing connection problems

## [RUTX\\_R\\_00.07.04.4](#) | 2023.06.26

- **New**
  - **Network**
    - Travelmate package for captive portal redirection
- **Improvements**
  - **Network**
    - Improved mobile operator query methods and operator name parsing in various services
  - **Services**
    - Improved UPNP lease file validation
    - Improved DLNA 'Database directory' field validation to not allow ', ` and spaces
  - **System**
    - Device name is now displayed in browser tab when in login page
- **Fix**
  - **Network**
    - Fixed a connection issue with bridge/passthrough mode when reconnecting ethernet cable
    - Fixed long mobile operator list parsing for whitelist/blacklist functionality
    - Patched CVE-2023-32233 vulnerability
    - Fixed an issue with Multi AP service remaining enabled when disabling
    - Fixed default networks in WAN firewall zone and possibility to add a network that is not yet created
  - **Services**
    - Fixed connection establishment for RMS MQTT service
    - Implemented partial restart when connection with RMS server fails
    - Fixed device name resetting to default upon WebUI page refresh
    - Fixed being able to set device name without passing validations
    - Fixed WireGuard port change in firewall traffic rule when modifying instance port

## [RUTX\\_R\\_00.07.04.3](#) | 2023.05.11

- **Improvement**
  - **System**
    - Removed SSH RSA key generation
    - Added SSH ECDSA key generation
- **Fix**
  - **Network**
    - Fixed an issue with mobile when Call Utilities configuration is invalid
    - Fixed clients being unable to connect to wireless AP when multi AP configuration is empty
    - Fixed an issue where sometimes PIN/PUK code was deleted when performing a SIM switch
  - **Services**
    - Fixed incorrect mobile data usage provided to RMS service
  - **System**
    - Fixed an issue on bootloader web recovery hanging with certain firmware sizes

## [RUTX\\_R\\_00.07.04.2](#) | 2023.04.18

- **New**
  - nftables support
- **Improvement**
  - **Network**
    - Added PDP profile registry and LTE SMS format functions & management for the Verizon network
    - Improved SIM detection algorithm
    - Improved Multi-APN connection establishment time
  - **WebUI**
    - Improved Overview page performance
  - **System**
    - Changed hostname to router name
    - Updated OpenSSL to version 1.1.1t
    - Updated CA certificates to version 20211016
    - Updated libiwinform to version 2022-08-19
- **Fix**
  - **Network**
    - Fixed IPv4, IPv6 mobile connection restarts
    - Fixed operator scanning when mobile interface is disabled
    - Fixed data limit and tracking when software flow offloading is enabled
    - Added network reload call before bringing the mobile interface up
    - Fixed a segmentation fault issue which would occur occasionally when switching between SIM cards
    - Fixed Port-based VLAN ID calculation issue
    - Fixed Ethernet interfaces showing incorrect transferred data values
    - Fixed EEE disable issue that caused reduction in data transfer speed
    - Fixed PDP context authentication when using special characters
  - **Services**
    - Fixed event text for configurable inputs/outputs on I/O Juggler

- Fixed I/O PIN3 value not changing via MODBUS TCP
- Added I/O status request error handling in various WebUI pages when the I/O service is booting up
- Fixed wrong timezone returned issue in Operator Station Synchronization & Timezone Synchronization
- Fixed MODBUS TCP Slave memory leak issue when requesting mobile parameters
- Fixed OpenVPN enabling/disabling when using Password or TLS/Password authentication modes
- Fixed OpenVPN keep alive setting migration issue
- Fixed PPTP server name setting migration issue
- Fixed missing WebUI issue caused by Email Relay installation
- Fixed NTP's Operator Station Synchronization memory leak issue
- Fixed test email validation
- **System**
  - Fixed libcares vulnerability CVE-2022-4904
  - Fixed frr vulnerability CVE-2022-37035
  - Removed ability for non root users to edit scripts that get executed as root

## [RUTX\\_R\\_00.07.04.1](#) | 2023.03.24

- **Fix**
  - **Network**
    - Fixed Data Limit issue

## [RUTX\\_R\\_00.07.04](#) | 2023.03.07

**Note:** Firmware version **RUTX\_R\_00.07.04** was removed from downloads list due to issues with Mobile Data Limit functionality not working correctly when Software offloading is enabled.

- **Improvements**
  - **WebUI**
    - Improved data persistence between page refreshes
    - Improved page navigation behavior
    - Improved redirect logic to open configuration edit modals
    - Updated the 'Status -> Mobile' page
    - Updated interface card in the Overview page
    - Separated Sent and Received data bars on the chart in the Mobile Usage page
  - **Network**
    - Made Software Flow Offloading Enabled by default
    - Added an info message displayed when a faulty SIM card is inserted
    - Added ResIOT operator's APNs to the APN database
    - Improved mobile connection re-establishment after reboot
    - Improved mobile connection recovery in cases where it was lost unexpectedly
    - Improved 'Deny data roaming' operation when switching between operators
    - Changed default WiFi AP cipher to CCMP (AES)
    - Added the logging of MAC addresses rejected by a WiFi AP
  - **Services**
    - Added MQTT support to I/O Juggler
    - Added support for new NMEA sentences: GARMC, GAGGA, GAGSA, GAVTG, GBGSV, GBGSA, GQGSV, GQGSA
    - Added an error message when trying to send an SMS from the 'Send Messages' page with no SIM card inserted

- Changed the behavior of setting the 'Write to config' flag in the 'mobileoff' SMS rule
- Added argument support for the 'Execute custom script' SMS rule
- Added a frequency option 'schedule' Modbus Master
- Added pagination to Events Reporting overview
- Added limit to Events Reporting rule list
- Added email logging for Events reporting
- 'Sync with browser' button in the NTP page now also synchronizes the time zone
- Added a limit of 30 for NTP instances
- Made Networks selections in the 'Traffic Logging' page to display interface choices dynamically
- Added "make before break" option to IPsec configuration
- Added MODBUS TCP connection handling layer to MQTT-MODBUS Gateway
- Improved MODBUS Master connection handling to reduce connection count
- Updated modbus request error messages
- Added OpenVPN server ip block support
- Added MQTT support for MODBUS Master alarms
- Added the possibility to get the device's Ethernet port data via SNMP
- Improved error messages in the Serial Utilities page
- **System**
  - Updated bash to version 5.1.16
  - Added detailed FW update failure error message to Events Log
  - Improved firmware upload/validation error messages
  - Updated Turkish language support
  - Added protocol column to IP block page
  - Added "vpns.log" file to the Troubleshoot package
  - Added Wireguard tunnel information to the Troubleshoot package
  - Updated DFOTA notification to show "More info" only when the update is forced
- **Fix**
  - **WebUI**
    - Fixed MAC address showing on mobile interfaces
    - Fixed mobile cell ID displaying in hexadecimal
    - Fixed mobile data limit card creation in the Overview page
    - Fixed modem widget disappearing from the Overview page
    - Fixed Services page not displaying data after Thingworx package is installed
    - Added DNP3 to the 'Status > Services' page
  - **Network**
    - Fixed interface priority change issue
    - Fixed a Custom Firewall Rule editing issue
    - Fixed DMZ configuration saving while it is disabled
    - Fixed Port Scan script execution failure
    - Fixed Firewall zone duplication issue
    - Fixed call function when VoLTE is disabled
    - Fixed VoLTE control when IMS is not enabled
    - Fixed mobile IPv6 IP checking when the device didn't get a correct IP address
    - Fixed APN authentication when using empty credentials
    - Fixed manual APN selection from list
    - Fixed disabled WiFi interface after factory reset
    - Fixed WiFi interface creation with SAE mixed encryption
  - **Services**

- Fixed the listing of slow USB devices such as HDDs
- Fixed disappearing GPS NMEA and HTTPS fields
- Fixed unused NTRIP option deletion on NMEA source change
- Fixed I/O Scheduler overlapping instances issue
- Fixed Input/Output image pin colors
- Fixed issue that causes ADC subscribers to receive notifications for when ACL is active
- Fixed DNP3 serial master not working when Stop bits are set to 2
- Fixed DNP3 requests not deleting along with instance
- Fixed DNP3 memory leak occurring after spamming the test request button
- Fixed Serial Over IP related Firewall rule setting
- Fixed WiFi Hotspot landing page uploaded theme image display
- Fixed WiFi Hotspot trial user deletion issue
- Fixed WiFi Hotspot service crash when associated WiFi interface is not up
- Fixed WiFi Hotspot password request by SMS
- Fixed WiFi Scanner starting process when the WiFi interface is disabled
- Added limitations on message size and quantity of email messages in Email to SMS
- Fixed SMTP HELLO value parsing issue
- Fixed SMS message window reset button
- Fixed not being able to save empty 'Message text' field in Auto Reply
- Fixed multi-part SMS concatenation
- Fixed multi-part SMS processing
- Fixed SMS error message on 'Mobile Data Reset' action
- Fixed Data To Server JSON format %n, %N and %s flag issues
- Fixed Events Reporting email data clean
- Fixed Events Reporting missing config selections
- Fixed GRE Tunnel's 'Tunnel source' field validation when the source is custom
- Fixed IPsec instance deletion after removing DMVPN package
- Fixed IPsec migration via Backup file when DMVPN is configured
- Fixed IPsec naming issue when the includes an equals sign
- Fixed L2TP client to use correct interface on failover events
- Fixed L2TP over IPsec connection dropping issue when connecting from a Windows client
- Fixed MODBUS database size limiting issue
- Fixed MODBUS MQTT Gateway client ID input
- Fixed MODBUS TCP Slave RSSI value
- Fixed MODBUS test button returning errors when several non-connected devices are configured
- Fixed NTP Etc/GMT+1 and Etc/GMT-1 time zones
- Fixed OpenVPN password validation when no CA certificate is uploaded or 'custom' template is selected
- Fixed OpenVPN Static Key configuration saving by making Static key upload required
- Fixed OpenVPN TLS client creation issue while LAN is down
- Fixed Package Manager displaying non-existent packages
- Fixed Package Manager errors showing up after successful installations
- Fixed Periodic Reboot entry duplication after a power cycle
- Fixed PPTP 'Client to client' option not being applied after save
- Fixed receiving excessive device state emails after a reboot is initialized over RMS
- Fixed WebUI unavailability after unsuccessful package install

○ **System**

- Fixed vulnerabilities CVE-2022-3524, CVE-2022-3566, CVE-2022-3567, CVE-2022-39188, CVE-2022-45934, CVE-2022-47929
- Fixed bash vulnerability CVE-2022-3715
- Fixed CGI-IO file download vulnerability CVE-2022-38333
- Fixed libxml2 vulnerability CVE-2022-40304
- Fixed libcurl vulnerabilities CVE-2022-43551 and CVE-2022-43552
- Improved file upload logic
- Fixed GPL firmware compilation with selected Tinc package
- Fixed OpenVPN Static Key migration via keep settings issue
- Fixed NTP time zone name setting migration when the name contains whitespaces
- Fixed language setting issue
- Fixed integer validation on industrial services
- Fixed LED indications when PDP type is IPv6
- Fixed issues with PDP type and SMS limit period migration via keep settings
- Fixed mobile network type LED indications when device is in Bridge or Passthrough modes
- Fixed LAN port LEDs staying on after being disabled

### [RUTX\\_R\\_00.07.03.4](#) | 2023.02.09

- **Fix**
  - **Network**
    - Changed generic modem restart method
    - Fixed mobile page VoLTE switching issues
    - Fixed CVE-2023-32349 vulnerability
  - **Services**
    - Sanitized tcpdump storage location

### [RUTX\\_R\\_00.07.03.3](#) | 2023.01.25

- **Fix**
  - **Network**
    - Updated init sequence

### [RUTX\\_R\\_00.07.03.2](#) | 2023.01.13

- **New**
  - **System**
    - Japanese language
- **Improvements**
  - **Network**
    - Optimized mobile netifd script installation
- **Fix**
  - **Network**
    - Shortened modem hang monitor timeout
    - Fixed VLAN option setting when changing VLAN ID
    - Fixed VLAN and Fiber Priority options

### [RUTX\\_R\\_00.07.03.1](#) | 2023.01.03

- **Improvements**

- **System**
  - Remove front-end certificate validation
- **Network**
  - Optimized mobile netifd script installation
- **Fix**
  - **Network**
    - Fixed modem communication validation
    - Fixed connection establishment in IPv6 only mode
  - **Services**
    - Fixed libxml2 vulnerability CVE-2022-40303
    - Fixed an IPsec Phase one & two setting migration issue
    - Returned missing udp\_client\_count option to Over IP mode
    - Fixed operator index in DNP3 outstation; added GPS resubscribe; fixed segfault when GPS is enabled
  - **System**
    - Fixed JSON key parsing; keys can now be any printable character sequence
    - Fixed memory leak in 'session' module
  - **WebUI**
    - Fixed file pretty name parsing

## [RUTX\\_R\\_00.07.03](#) | 2022.12.16

- **New**
  - **Network**
    - Firewall DMZ page
  - **Services**
    - Java package
    - SFTP server support
    - OPC UA client
    - NTRIP
    - Hotspot registered users management page
  - **System**
    - Portuguese language
    - Spanish language
    - Turkish language
    - Email Relay package
  - **WebUI**
    - New Web menu design
- **Improvements**
  - **Network**
    - Updated modem handling, attachment, tracking and connection establishment processes
    - Added the possibility to select multiple ports in all firewall port fields
    - Added 'Match' traffic by type option to firewall traffic rules
    - Added DNS servers and routing table fields to the Wireguard page
    - Improved generating network topology
    - Moved Relayd, UDP Relay & Static Leases to the Interfaces menu section
    - Update Firewall Traffic Rules page with DSCP and MARK options
    - Added keepalive, holdtime and connect timers to BGP configuration
    - Added 'Use gateway metric' to network protocols web interface

- Added more DHCPv6 client events to system log
- Moved IP Filter rules from Modbus TCP Gateway and Over IP services to Firewall page
- Added option to select subnet parameters in mobile Passthrough/Bridge modes
- Added WhereverSIM operator APN and fr.lebara.mobi APN to APN database
- Added mobile connection state for IPv6
- Added wget tracking method to WAN Failover
- Added interface checks to remove inaccurate Failover events from the Event Log
- **Services**
  - Added OpenVPN IPv6 Web support
  - Added format button for each USB device in USB Tools General page
  - Reduced waiting time during storage device setup for Memory Expansion
  - Optimized Storage Memory Expansion package size
  - Replaced ntfs-3g with kernel-mode driver
  - Added USB to Serial support for Modbus, MQTT Modbus Gateway, NTRIP, DNP3
  - Added CSP headers to Hotspot Landing Page
  - Added hotspot user script validation
  - Improved logging of disconnecting client devices
  - Added the possibility to switch profiles on GPS geofencing events
  - Added satellite count and accuracy columns to GPS Map page
  - Added execute custom script SMS Utilities rule
  - Added receiver and transceiver mode support to SMPP
  - Added timezone synchronization with GSM operator option to NTP Client
  - Updated Zerotier web interface
  - Added IPsec Flush connection option on tunnel initialization
  - Added MODBUS slave regfile validation
  - Added delay, number of timeouts, always reconnect options to MODBUS Master service
  - Added DMVPN Phase 2 and Phase 3 support
  - Added synchronization counting to NTP client
  - Expanded the data that is sent to the Cumulocity cloud with device log, mobile data usage and GPS data
  - Added 'Unregister' button to RMS page
  - Added new data monitoring options to SNMP: configuration state of wireless, smart queues & VLANs
  - Updated Zerotier package to version 1.10.1
  - Added automatic package removal upon failed installation in Package Manager
  - Added option to describe custom routing table and MTU auto counting to Wireguard VPN
  - Added IP blocking to MQTT Bridge for failed login attempts to prevent bruteforce attacks
  - Updated sqm-scripts to version 1.5.1
  - Improved MODBUS Master service: added multiple datatypes, added multiple register reading for alarms
  - Added monthly reboot option to periodic reboot function
  - Added support for multiple custom option selection to SSTP configuration
  - Added PKCS12 certificate chain support to OpenVPN
  - Improved MQTT to support multiple port listening, multiple bridge connections, notification settings and added support for custom configuration file
  - Added QoS selection to MQTT Modbus Gateway
  - Improved RAM usage during upload and installation of packages via Package



## Manager

- Updated curl to version 7.86.0
- Added brute-force prevention measures to Post/Get
- Added automatic private and public key generation to Wireguard VPN
- Added multiple Remote source IP support to IPsec
- Added the possibility to configure multiple IPsec phase 1 and phase 2 proposals
- Added functionality to rotate log file when log is saved to Flash memory
- Improved performance while fetching packages on repeat visits to the Package Manager page
- Updated Dbus to version 1.13.18

## ◦ System

- Added a 'test mail' button to the Administration -> Recipients page
- Added option to clear blocked IPs in the Access Control page after reboot
- Updated Web Request-Response core logic
- Added certificate validation to all services that support certificate upload
- Updated URL protocol validations
- Removed profile update requests during Save & apply
- Optimized profile switching logic

## ◦ WebUI

- Added an indication to the Interfaces page that displays when data limit is enabled
- Added bootloader version to the Device section in the System page
- Added configuration page shortcuts to Overview page widgets
- Added tooltip in Overview that show free, used and total RAM/Flash values on mouse cursor hover
- Updated network interfaces protocols web interface
- Updated 404 page to include navigation menu

## • Fix

### ◦ Network

- Fixed CVE-2023-32350 vulnerability
- Fixed jumbo frames MTU issue
- Added the 'Any' choice to source & destination IP address field in NAT rule edit
- Fixed NHRP web interface issues
- Fixed WAN interface configuration interfering with LAN
- Fixed mdcollect memory leak issue
- Fixed data limit not resetting properly
- Fixed incorrect mobile data usage calculations for multiple day periods
- Fixed an Auto APN 'Keep settings' issue
- Fixed data counting after mobile data limit has been reached
- Fixed mobile band not setting correctly on first try
- Fixed incorrect data limit conditions causing unwanted SIM switches
- Fixed Passthrough DHCP lease time setting
- Fixed mobile bridge mode issue when no DNS servers are supplied
- Added new Operator Lists instance name validations
- Added individual WiFi toggle support
- Added error message when DFS channel is selected during scanning
- Fixed mac80211 vulnerabilities CVE-2022-41674, CVE-2022-42719, CVE-2022-42720, CVE-2022-42721, CVE-2022-42722
- Fixed wireless interfaces connections not reestablishing after disabling & enabling again
- Updated DFS radar detection patterns for Japan

- Added switch back to default SIM after SIM Switch service disable
- Fixed SIM Switch issue on newly created mobile interfaces
- Fixed switch back to primary SIM rule disable when the default SIM is changed
- Fixed incorrect SIM Switch behavior on low signal value
- Fixed Wired WAN connectivity issue when Failover interfaces are disabled
- Fixed Failover fallback issue
- **Services**
  - Fixed Printer service starting issue
  - Fixed Printer service boot issues
  - Fixed DLNA service reload issues on USB drive insert/remove
  - Fixed relay state switching
  - Fixed Save & Apply issue with ADC/ACL type condition on I/O Juggler
  - Added I/O restart on configuration profile change
  - Fixed I/O voltage range display for power socket pins
  - Fixed SMNP OID for I/O state
  - Fixed I/O Juggler SMS text message Save & Apply issue
  - Fixed Hotspot connected user list maximum upload/download value limits
  - Fixed incorrect connected Hotspot user information in RMS JSON
  - Fixed Delay field in GPS HTTPS/HTTP Server Settings section
  - Fixed AVL packet timestamp display
  - Fixed issue that prevented GPS map display after clearing cache
  - Removed unnecessary field from the Port Mirroring page
  - Fixed Events Reporting 'Changing to SIM1/SIM2' options
  - Fixed Hotspot issues related to specific connected phones
  - Fixed Wireless AP enabled by MODBUS TCP Master not showing in Wireless clients
  - Fixed WiFi Scanner hostname validation issues
  - Implemented Hotspot 'forget' method, which removes user from DB by MAC
  - Fixed UCI SMS Rule return message to display new changes
  - Fixed DNP3 issues when asking for modem temperature
  - Fixed base64 encoding of SMS messages when forwarding to HTTP
  - Fixed SMS sending issues when using multiple APN
  - Added Gateway modem option to IP Block and WoL in SMS Rule edit
  - Fixed unblocking IP addresses with an SMS message
  - Fixed Mobile Utilities page not load properly on some occasions
  - Fixed dbus vulnerability CVE-2020-35512
  - Fixed dnsmasq vulnerability CVE-2022-0934
  - Fixed ext4 vulnerability CVE-2021-3428
  - Fixed kernel vulnerabilities CVE-2021-3669, CVE-2021-4203, CVE-2022-1353, CVE-2022-3435, CVE-2022-20008, CVE-2022-30594
  - Fixed libxm12 vulnerability CVE-2022-29824
  - Fixed Linux vulnerabilities CVE-2021-4148, CVE-2022-0480, CVE-2022-1055, CVE-2022-0886, CVE-2022-2663, CVE-2022-36879 for v5.4
  - Fixed MQTT DoS vulnerability CVE-2021-41039
  - Fixed privoxy vulnerability CVE-2021-44542
  - Fixed python3 vulnerability CVE-2022-42919
  - Fixed strongswan vulnerabilities CVE-2021-41991, CVE-2021-45079
  - Fixed uboot vulnerabilities CVE-2022-30552, CVE-2022-30790
  - Fixed switching between RMS connection types while the device is unregistered
  - Fixed reload issues in website blocking feature
  - Fixed IPsec PSK secret required field validation

- Fixed bandwidth limiting after QoS is enabled for the first time
- Fixed Dropbear issues when logging in over IPv6
- Fixed Modbus status in Status -> Services page
- Fixed Azure IoT Hub application issues when sending large volumes of data
- Fixed Azure IoT Hub MQTT password validation
- Fixed DMVPN configuration migration issue
- Fixed DMVPN duplicate select options, added suffix to mobile interfaces to use IPv4
- Fixed DMVPN IPsec connection issue
- Fixed DMVPN mobile interface 'Keep settings' migration issue
- Fixed Dynamic DNS long hostname text display issue
- Fixed Events Reporting memory leak issue
- Fixed Events Reporting not triggering after flipping an I/O slider
- Fixed FOTA cron job not starting after factory reset
- Fixed IPsec local firewall option parsing
- Fixed IPsec tunnel creation issue when compatibility mode is used and the tunnel name contains an underscore
- Fixed L2TP, PPTP, SSTP state display in the Status -> Services page
- Fixed NTP pool hostname validation
- Fixed OpenVPN certificate remove with Static key and TLS authentication methods
- Fixed OpenVPN configuration saving issue when using HMAC key authentication
- Fixed OpenVPN custom dev name transformation to correct format
- Fixed OpenVPN device name setting logic when uploading config from file
- Fixed OpenVPN instance status display
- Fixed OpenVPN TAP (bridged) configuration detection
- Fixed Qos configuration saving issue occurring after instance deletion
- Fixed RMS JSON incorrect WAN state and IP information
- Fixed RMS step access issue in the Setup Wizard page
- Fixed SNMP issues after reboot while using a Hotspot
- Fixed SNMP generating MIB files for devices in accordance with to their hardware
- Fixed SNMP traps not working after SNMP is installed from server
- Fixed SSTP client route creation issue
- Fixed UPNP secure mode not turning off issue
- Fixed Wireguard route to endpoint issue
- Fixed manual package installation for queued packages
- Fixed NAT Rules dependency from IPsec web instance
- Returned usleep utility
- Updated Australian and South African NordVPN server IP addresses
- Fixed paired bluetooth devices appearing nameless
- **System**
  - Fixed LED operation while device is in bootloader state
  - Fixed certificate signing issues
  - Fixed Telnet, CLI access blocking after max invalid tries
  - Fixed FW upgrade with 'Keep settings' while low free space is available
  - Fixed backup file duplication issue
  - Fixed network device handling in system
- **WebUI**
  - Fixed Hotspot interface display
  - Fixed side widget accessibility during first login
  - Fixed file upload issues

- Fixed drag and drop issue in the Traffic Rules page
- Fixed protocol display in the overview of the Interfaces page
- Fixed blocked IP settings migration during a FW upgrade with the 'Keep settings'
- Fixed login errors after browser tab restoration
- Fixed redirect to newly set IP address after Interface configuration
- Fixed firmware upgrade verify spinner not closing
- Fixed an issue with file upload via drag and drop

## [RUTX\\_R\\_00.07.02.7](#) | 2022.09.12

- **Improvements**

- Improved manual-auto connection mode

- **Fix**

- Fixed AT command for SMS storage usage
- Fixed CVE-2022-1012 memory leak vulnerability
- Fixed CVE-2022-37434 kernel vulnerability
- Fixed GPS constellation settings
- Fixed interface option reset after VLAN ID change
- Removed memory leak on port events
- Fixed WiFi Scanner out of range crash when iterating collected data

## [RUTX\\_R\\_00.07.02.6](#) | 2022.08.24

- **Improvements**

- Added 'home.vodafone.de' APN
- Improved stability of device information storage

- **Fix**

- Added SMSC type omitting when empty SMSC number parsed in SMS PDU mode
- Fixed Serial-symlink dmesg messages
- Fixed VoLTE management
- Fixed OpenVPN tls-auth and tls-crypt option names

## [RUTX\\_R\\_00.07.02.5](#) | 2022.08.12

- **Improvements**

- Updated curl to version 7.83.1
- Updated firmware validation error messages
- Added multiple source IP address support to the Port Forwards page
- Increased custom APN Username & Password field maximum length to 64 symbols
- Added auto switch to modem's SMS storage when SIM card storage doesn't exist
- Improved mobile connection status handling
- Added CSP headers Hotspot WebUI landing page
- Optimized CORE distribution for packet handling

- **Fix**

- Lixed EEE link advertisement
- Fixed CVE-2022-32205, CVE-2022-32206, CVE-2022-32207, CVE-2022-32208 curl vulnerabilities
- Fixed CVE-2022-30065 busybox vulnerability
- Fixed file upload path traversal
- Removed Data to Server limit to process less than 10 instances

- Fixed Data to Server 'out of memory' crashes when database is full or has a large amount of data
- Fixed OpenVPN dev setting logic
- Fixed OpenVPN updating from legacy issue that caused IPv6 not to work
- Fixed MAC and leasetime setting for Bridge & Passthrough modes
- Fixed modal tabs navigation when editing wireless interface with non-english languages

## [RUTX\\_R\\_00.07.02.4](#) | 2022.07.20

### • Improvements

- Added default password change warning message before firmware downgrade
- Extended time period for device to make connection to operator
- Reduced the number of modem reboots when changing mobile settings
- Reduced excessive log output when no SIM card is inserted
- Added modem restart prevention on modem init
- Added disable RPLMN option in the SIM section of the SIM card config

### • Fix

- Fixed CVE-2022-2068 vulnerability
- Disabled autoconnect on stop-network call
- Fixed Hotspot login via landing page issue
- Fixed possible I2C bus lock-up issue when upgrading firmware from 02.xx versions

## [RUTX\\_R\\_00.07.02.2](#) | 2022.06.27

### • Improvements

- Updated FSTools package to version 2022-05-03
- Added security headers to web requests
- Added ping to DNS IPv6 support
- Added modem reset to default state after device FW upgrade
- Modem init now checks NVRAM sensitive commands before setting
- GSM output was made consistent

### • Fixes:

- Fixed CVE-2019-12900 libbz2 vulnerability
- Fixed CVE-2022-23303 hostapd vulnerability
- Fixed CVE-2022-29581 Linux kernel vulnerability
- Fixed CVE-2022-29458 ncurses vulnerability
- Fixed CVE-2022-1292 c\_rehash script command injection vulnerability
- Fixed behavior of some gsmctl commands
- Fixed band locking issue
- Fixed race condition for wireless configuration initialization

## [RUTX\\_R\\_00.07.02.1](#) | 2022.06.06

### • Improvements

- Improved GSM related messages in Troubleshoot logs

### • Fixes:

- Fixed IGMP Proxy menu item not appearing after package installation
- Fixed default mobile network configuration generation
- Fixed MODBUS write requests and Mobile Utils option setting

- **New**

- Overview side widget
- IGMP Proxy
- Privileged Access Management (PAM)
- AWS Greengrass support
- HTTPS certificate and key upload feature
- SSH public keys edit box
- License page
- Bluetooth EYE sensors support
- DNP3 data for Data to Server

- **Improvements**

- Updated busybox to version: 1.34.1
- Updated curl to version 7.79.1
- Added iptables filter package for string filtering
- Added CHAP authentication for L2TP VPN
- Added IPv6 support for L2TPv3 VPN
- Added EAP-MSCHAPV2 authentication method for IPsec VPN
- Added IPv6 support to Auto Reboot
- Added 'Save to flash' and 'Test configuration' button to DNP3 configuration page
- Updated SNMP version 5.9.1
- Added OpenSSL authentication options to SNMPv3
- Added support for OSPF redistribution options and OSPF neighbors
- Added password field to BGP Peers page
- Extended BGP "AS" field validation to accept integers up to 4294967295
- Added "DHE+RSA" to OpenVPN cipher selections
- Increased OpenVPN max password length from 128 bytes to 512 bytes
- Made HMAC key direction initial value dependent on the role of the instance (client or server)
- Made HMAC key and HMAC authentication key upload fields required
- Added DES to IPsec encryption algorithms selections
- Added special character support for CHAP secrets
- Added validation requirements for PPTP user list username field
- Added option to manually enter Public key in Wireguard configuration
- Made generating Wireguard keys possible only while in auto mode
- Added Events Log database to troubleshoot archive
- Added RFC1918 filter field
- Added the possibility to unblock multiple blocked devices at once
- Added 'Port' column to blocked login attempts table
- Added Speedtest server refresh
- Updated Speedtest server list
- Added asterisk option to Site Blocking
- Added MD5 and SHA256 checksums to package validation page
- Changed certificate requirements to only require client key file if client certificate is used
- Added pagination and data retention between table pages
- Added pagination functionality to tables when there are more than 10 records
- Improved table sorting by saving user provided sort settings in the browser
- Improved drag and drop functionality

- Added the possibility to drag and drop files onto upload components
  - Moved 'Root CA' from the 'Access Control' page to the 'Certificates' page
  - Added 'Strict-Transport-Security' response header for HTTPS
  - Added 'breadcrumbs' to modal windows
  - Improved initial WebUI loading after login
  - Added mobile bytes sent and bytes received SNMP OIDs
  - Added mobile LED turn off feature ('System -> Administration' page)
  - Added 'iot.1nce.net', 'internet', 'VZWINTERNET' and Truphone APNs to APN database
  - Updated mobile usage data point calculation logic
  - Added the possibility to manually enter operator number
  - Improved obtain mobile cell ID process
  - Added modem restart if SIM card is removed during APN database fetching process
  - Added unauthorized call logging
  - Added space character support in SMS commands
  - Disabled SMS modem storage configuration form when SIM is not inserted
  - Changed SMS '%wi' parameter value to return IP address of any currently used WAN interface (not only wired)
  - Added external modem SMS limit Overview card and widget
  - Made in-use APNs visible next to mobile interface configurations (before clicking the 'Edit' button)
  - Added duplicate value check for list configuration options
  - Changed mobile card instance design
  - Fixed 'Mobile Data usage reset' SMS rule
  - Fixed the default state parameter of SMS list POST/GET command
  - Added Hotspot configuration profiles
  - Added local Hotspot user password hashing
  - Added Hotspot password encoding option
  - Improved Hotspot related firewall rule setting
  - Improved WiFi Scanner enable switch to toggle 2 and 5 GHz instances separately
  - Removed CHAP authentication protocol for WiFi Hotspots due to incompatibility with hashed passwords
  - Added ubus support to Hotspot
  - Changed default port name of WiFi devices for 'Topology state' Events Reporting rule
  - Added AVL "Static Navigation" flag
  - Added GSV parsing for NMEA collecting
  - Added newline and GPS location actions to I/O Juggler
  - Added error code 5 for reserved SAMBA user names
  - Added Mobile data and SMS limit features for external modem
  - Added I/O SNMP trap
  - Added ISO 8601 time format to I/O Juggler's '%ts' parameter
  - Added device name parameter '%pc' to I/O Juggler
  - Added PPPoE VLAN priority support
  - Made VRRP ping section dependent on main instance
  - Added 'WAN to LAN' switch
- **Fix**
    - Fixed CVE-2021-20322, CVE-2021-4197, CVE-2022-1011, CVE-2022-0847 kernel vulnerabilities
    - Fixed CVE-2022-28391 busybox vulnerability
    - Fixed CVE-2018-16789 shellinabox vulnerability
    - Fixed CVE-2021-44543, CVE-2021-44542 privoxy vulnerabilities

- Fixed CVE-2021-43618 GNU Multiple Precision Arithmetic Library vulnerability
- Fixed zlib backport security issue
- Fixed Wireguard firewall zone assignment
- Fixed queued packages disappearing from list after FW upgrade with keep settings
- Fixed error message display for multiple input validation rules
- Fixed incorrect DHCP validation range for start and limit fields
- Removed 'Bring up on boot' option from network interface configuration pages
- Fixed coma-separated DHCP options disappearing after save
- Fixed exclude and listen interfaces
- Fixed 'Use broadcast flag' option saving
- Fixed firewall zone assignment when creating new interfaces
- Fixed OpenVPN 'Netmask' and 'IP address' field validations
- Fixed OpenVPN TAP configuration saving issue
- Fixed OpenVPN switching to TUN mode when uploading a configuration from file
- Fixed dynamic BGP route state display
- Fixed BGP peer enable in edit page
- Fixed issue when no L2TP client instance could be bound to IPsec
- Fixed firewall rule and zone behavior related to config section creation
- Added default value for L2TPv3 netmask, which is now written to config after save
- Fixed passthrough option saving to IPsec file
- Fixed DMVPN issue where instance configuration could not be saved
- Fixed Wireguard peer could not be saved issue
- Fixed NTP client time synchronization after factory reset
- Fixed device time display with selected time zone
- Fixed MODBUS TCP indexation missing bracket issue
- Fixed initial MODBUS TCP request count validation
- Fixed PIN 3/4 direction switching over MODBUS TCP
- Fixed MODBUS data to MQTT socket closing issue when connection fails
- Fixed MODBUS alarm configuration deletion
- Fixed DNP3 master not working after FW upgrade with 'keep settings'
- Fixed DNP outstation not returning error messages
- Added missing SNMP objects: mobile IP, data sent/received today
- Fixed MQTT Publisher 'Remote address' field validation
- Fixed long interface name support for Azure IoT Hub
- Increased maximum Azure IoT Hub 'Connection String' length to 4096 characters
- Fixed missing sent/received data issue
- Fixed URL input field length validation
- Fixed admin login issue after upload of backup from a device with older firmware versions
- Fixed MAC address formatting in Events reporting messages
- Fixed Events reporting DHCP lease message spam, when no new lease is added
- Fixed logging crashing after downloading Troubleshoot file
- Made Wake on LAN visible only on devices with Ethernet ports
- Fixed Traffic log file transfer to FTP server
- Fixed Web Filter service reloading after a host list file is uploaded
- Fixed access denied messages when sending JSON-RPC requests from root user
- Fixed error message display about duplicated intervals in Profile scheduler
- Fixed FW upgrade with 'keep settings' migration issue for Access Control's 'Fail count' and 'Device port' fields
- Corrected OSPF Routing card values, value positions and names
- Fixed global secret instances not being removed when there are no IPsec instances



- Fixed uploaded file remove icon not staying in position on hover
- Fixed Overview card collapse issue that made it unresponsive after too many clicks
- Removed WAN6 interface from the Overview page
- Fixed mobile IPv6 display in Events Reporting status messages
- Fixed Bridge mode when DNS2 is not available
- Fixed PAP/CHAP username and password fields not saving in interface edit window
- Fixed sending email without secure connection for providers that support such an option
- Fixed 'N/A' parameter showing up in SMS Utilities monitoring status message
- Fixed Call Utilities Events Log message for reboot rule
- Fixed SMS command validation for no-authorization option
- Fixed MODBUS SMS alarms 'Enable' option saving
- Fixed running RMS with no SIM card inserted issue
- Fixed firmware available on server version checking issue
- Fixed CVE-2020-15078 openvpn vulnerability
- Fixed storage calculation for packages
- SMS Utilities: enhanced service security
- Fixed firmware deletion after leaving the page
- Fixed setup wizard redirect after LAN IP change
- Fixed various validation bugs, typos, option hints & alignments
- Fixed multiple IPv6 configuration field validations
- Fixed unnecessary SIM switch issue when Multi-APN is configured
- Fixed MODBUS TCP slave modem not starting after switching SIM cards
- Fixed PDP logging for Verizon operator
- Added multiwan support for Wireguard default route
- Fixed wireless signal strength display when no clients are connected
- Fixed loss of connectivity for clients when router is in STA+AP mode
- Added validation that prevents automatic connection to first unencrypted WiFi AP when using MULTI AP
- Fixed Wifi Scanner data not being stored in certain scenarios
- Fixed WiFi scanner not turning on after FW upgrade with 'keep settings'
- Fixed Hotspot user group limit not resetting on specified time
- Removed an RMS error message when no Hotspot users were created
- Fixed Hotspot landing page image upload issue
- Fixed restoring GPS HTTPS options after FW upgrade with 'keep settings'
- Fixed missing NMEA sentences
- Fixed NMEA cache sentence calculation
- Fixed 'outside/inside range' condition for AVL I/O Analog input trigger
- Fixed I/O Juggler external modem recognition
- Fixed flash driver reformatting after memory shrink
- Fixed DLNA package installation issue
- Changed Media Directories field to be required
- Fixed SAMBA fields value display
- Fixed relay output value display in I/O Juggler condition page
- Fixed I/O Juggler's WiFi rule not enabling or disabling WiFi interfaces
- Fixed I/O Juggler's double delete issue on I/O Juggler action and condition instances
- Fixed I/O Juggler's incorrect I/O status messages
- Fixed paired Bluetooth device RSSI display after reboot

## **RUTX\_R\_00.07.01.4 | 2022.02.25**

- **Improvements**

- Increased Port Forwards rule max name length
- Added a new '%it' parameter for UTC time in ISO 8601 format to I/O Juggler
- **Fix**
  - Added missing bracket to the end of MODBUS messages
  - Fixed preserving the contents of /etc/luci-uploads/ after FW upgrade with the 'Keep all settings' option
  - Fixed IPv4-Gateway column showing empty values in the Status -> Routes page
  - Fixed firewall extra option validation
  - Fixed Hotspot enable button validation
  - Removed invalid network interface selections from the "Network" dropdown in the Wireless interface configuration page
  - Changed the logic of uploading files to the modem
  - Fixed usage of custom headers in I/O Juggler HTTP action
  - Fixed 'verify' option parsing for I/O Juggler
  - Fixed OpenVPN server configuration with password authentication
  - Fixed NTP interval length validation
  - Fixed network interface enable after Drag & Drop
  - Updated NTP client interval to 24h
  - Fixed connection to whitelist carriers
  - Fixed Passthrough mode when DHCP is disabled
  - Fixed 'Deny data roaming' feature
  - Fixed mobile blocking dependency on region
  - Disabled Ping To DNS functionality when Bridge/Passthrough mode is enabled

## **RUTX\_R\_00.07.01.2 | 2022.01.04**

- **New**
  - DFOTA modem upgrade system for Quectel modems
- **Improvements**
  - Removed L2TP section title prefixes
  - Added necessary/forced module firmware updates to handle AT&T network update
- **Fix**
  - Fixed IPsec crashing issue using mobile
  - Fixed FW flashing when chip is in unknown state
  - Fixed CPU usage percentage display in the Overview page
  - Fixed FOTA timeout issue when server does not respond
  - Fixed installation of backup packages
  - Fixed mobile data limit display after profile change
  - Fixed Bridge mode without multi-APN
  - Fixed multi mobile interface checking
  - Fixed error handling when the modem is not responding
  - Prolonged autoconnect setting timeout

## **RUTX\_R\_00.07.01 | 2021.11.18**

**Note:** Firmware version RUTX\_R\_00.07.01 released on 2021.11.18 was removed due to an issue with IPsec tunnel while using mobile connection.

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- **New**

- Load Balancing Rules
- 802.11s based wireless mesh network support
- Multiple Wireless AP feature
- RUTX series support without STM32
- Tinc VPN
- German language support
- Manual-Auto operator select

- **Improvements**

- Updated base to OpenWrt version 21.02
- Improved WebUI functionality when multiple browser tabs are open
- Updated kernel to version 5.4.141
- Updated mtd-utils to version 2.1.2
- Updated busybox to version 1.33.1
- Updated ubus to version 2021-06-3
- Updated ubox to version 2020-10-25
- Updated rpcd to version 2021-03-11
- Updated opkg to version 2021-06-13
- Updated fstools to version 2021-01-04
- Updated wwan to version 2019-04-29
- Updated ethtool to version 5.10
- Updated uhttpd to version 2021-03-21
- Updated ppp to version 2020-10-03
- Updated odhcpd to version 2021-07-18
- Updated hostapd to version 2020-06-08
- Updated dropbear to version 2020.81
- Updated dnsmasq to version 2.85
- Updated netifd to version 2021-07-26
- Updated firewall3 to version 2021-03-23
- Updated libjson-c to version 0.15
- Updated libevent2 to version 2.1.12
- Updated mac80211 to version 5.10.42-1
- Updated wireless-regdb to version 2021.04.21
- Updated binutils to version 2.35.1
- Updated gdb to version 10.1
- Updated strace to version 5.10
- Updated trace-cmd to version 2.9.1
- Updated valgrind to version 3.16.1
- Updated ath10k-ct-firmware to version 2020-11-08
- Updated procd to version 2021-02-23
- Updated iw to version 5.9.8
- Updated iproute2 to version 5.11.0
- Updated iptables to version 1.8.7
- Updated nettle to version 3.6
- Updated libpcap to version 1.9.1 rel3
- Updated elfutils to version 0.180
- Updated cryptodev-linux to version 1.11
- Updated linux-firmware to version 20201118
- Updated util-linux to version 2.36.1
- Updated openwrt-keyring to version 2021-02-20

- Updated mtd to version rel26
- Updated fwtool to version 2019-11-12
- Updated ca-certificates to version 20210119
- Updated wireguard-tools to version 1.0.20210223
- Updated iwinfo to version 2021-04-30
- Updated ipset to version 7.6
- Updated gre to version rel12
- Updated wolfssl to version 4.7.0
- Updated ustream-ssl to version 2020-12-10
- Updated uclient to version 2021-05-14
- Updated readline to version 8.1
- Updated mbedtls to version 2.16.11
- Updated libusb to version 1.0.24
- Updated libunwind to version 1.5.0
- Updated libubox to version 2021-05-16
- Updated libnl-tiny to version 2020-08-05
- Updated libnftnl to version 1.1.8
- Updated libiconf-full to version 1.16
- Updated libbsd to version 0.10.0
- Updated gmp to version 6.2.1
- Updated ulogd to version rel6
- Updated sqm-scripts to version 1.5.0
- Updated ntpclient to version rel14
- Updated nmap to version 7.80
- Updated curl to version 7.77.0
- Updated zerotier to version 1.6.5
- Updated xtables-addons to version 3.13
- Updated xl2tpd to version 1.3.16
- Updated stunnel to version 5.59
- Updated strongswan to version 1.0.13
- Updated sstp-client to version 1.0.13
- Updated pptpd to version rel5
- Updated openvpn to version 2.5.3 rel2
- Updated ntpd to version rel3
- Updated net-snmp to version rel2
- Updated mosquito to version 2.0.11
- Updated miniupnpd to version 2.2.1 rel 3
- Updated etherwake to version rel5
- Updated libzip to version 1.7.3
- Updated libgpg-error to version 1.39
- Updated glib2 to version 2.66.4
- Updated libnetfilter-contrack to version 1.0.8
- Updated libnetfilter-log to version rel3
- Updated lzo to version rel4
- Updated nghttp2 to version 1.43.0
- Updated openvpn-easy-rsa to version 3.0.8 rel3
- Updated iperf to version rel2
- Updated iperf3 to version 3.10.1
- Updated e2fsprogs to version 1.45.6
- Updated fuse to version 2.9.9
- Updated udprelay to version 2020-02-26

- Updated qmicli to version 1.28.2
- Updated pcre to version 8.45
- Updated libsmpp34 to version 1.14.1
- Updated libiwinf to version 2.1
- Added netifd library for additional information related to network interfaces
- Updated openssl to version 1.1.1l
- Updated privoxy to version 3.0.32
- Added ACL reload method for sessions
- Added 'Advertisement interval' field to the VRRP configuration window
- Added a PPTP-to-WAN Zone Forwarding rule when default route is enabled on PPTP client
- Added email user group validation for sending test emails with Events reporting
- Added an event logging feature for Ping Reboot events
- Improved file/section deletion logic: now files are also deleted after deleting a related config section
- Improved package deletion logic
- Added the possibility to configure multiple reboot times in one Reboot Scheduler configuration instance
- Updated 'External system log server' field validation to accept IPv6 addresses
- Added redirect to Overview page after login
- Added WebUI session timeout after user inactivity
- Added placeholder text to dropdown menus
- Improved multi-select design and functionality
- Added Unix timestamp, local ISO time, UTC time to Modbus
- Added info message when selected file cannot be uploaded
- Improved IPsec throughput
- Added IPsec "Compatibility mode" configuration support
- Made SNMP 'Community name' option editable
- Added the option to delete configurations to the SMS Utilities 'UCI' rule
- Added 'hour', 'week day', 'month day' selection options to SMS Limit configuration
- Added Lithuanian and Verizon APNs
- Added modem selection for the 'Send SMS' option in Auto Reboot settings
- Added the possibility to get total data usage value without specifying time interval via ubus
- Added return SIM count command
- Added new configuration options to the Failover feature
- Changed Failover page availability from Advanced only both advanced and basic
- Made Failover Interfaces table rows draggable when in 'Load Balancing' mode
- Changed Failover page 'Ratio' fields to a smaller size
- Added the possibility to allow multiple Hotspot users to log in with the same SMS OTP
- Added 'Duplicate passwords are not allowed' error message to Hotspot landing pages
- Added 'Allow password duplicates' field to the Hotspot configuration page
- Improved wireless frequency option layout
- Added an indication to the GPS map when GPS service is disabled
- Added external modem support for the 'Mobile Usage' graph
- Added pagination, search bar and easier device selection to the Bluetooth page
- Added I/O support to SNMP
- Removed ubus list method due to security reasons
- Added MODBUS "%I, %T, %S, %r, %n" support to MODBUS Data Sender
- Removed search engine site crawling
- Improved IPsec "Local/Remote source" validation

- Added Firewall "all" and "custom" protocol options
  - Added Backup file size limit of 2 MB
  - Improved basic/advanced mode changing
  - Improved Wireguard "IP Addresses" field validation
  - Added language download support from language selection section
  - Added PPTP "Client to client" configuration support
  - Made DDNS "username", "password", "host" fields optional
  - Added SSTP "Default route" configuration support
  - Added SMS Limit hour, week day and month day support
  - Added Passthrough "Leasetime" and "Unit" configuration support
  - Added Call Utilities "Active Timeout" configuration support
  - Added support for PL2303GC serial to USB chip
  - Added bgscan feature to wpa\_supplicant
  - Optimized Wireless device status information requests in all WebUI pages
  - Added GPS AVL "Don't Contain Connection" and "Retry on Fail" configuration support
- **Fix**
    - Made RMS 'Connect' button disabled when a connection attempt is already in progress
    - Added validation for TLS Clients 'Private network' option
    - Fixed the validation range for MTU fields
    - Fixed removing firmware image file after leaving the firmware upgrade page
    - Fixed network selection list for Traffic Logging - added all available LAN networks
    - Fixed DHCP Options validation
    - Fixed configuration profile date display
    - Fixed blank page after invalid URL in login page
    - Fixed TR-069 related firewall rule loading
    - Fixed remote subnet netmask validation issues for the GRE Tunnel configuration
    - Fixed WebUI section toggle
    - Fixed package installation modal layout
    - Fixed current page values showing up in login page username field
    - Fixed the possibility to create section with a name that is already in use in the same config file
    - Fixed OpenVPN username and password deletion when deleting configuration instance
    - Fixed session closing issue for the user whose password was just changed
    - Updated MODBUS credential validation
    - Updated MQTT credential validation
    - Fixed DNS 'Rebind protection' setting when switch is disabled
    - Updated libcrypt to version 1.9.3 to fix CVE-2021-33560
    - Fixed CVE-2021-33624, CVE-2021-29648 vulnerabilities
    - Fixed DHCP 'Lease time' and 'Unit' option saving over the Setup Wizard LAN page
    - Fixed Reboot Scheduler not removing crontab file after disabling the rule
    - Fixed OpenVPN 'Extra options' field validation to allow a space character
    - Added table drag and drop functionality to the Firewall's Traffic Rules page
    - Fixed DNP3 Outstation crash caused by non-void function returning no value
    - Fixed RMS 'Copy' button functionality
    - Fixed gsmd daemon crashing after modem restart
    - Fixed gsm memory leak
    - Fixed WCDMA band names for MEIG modules
    - Fixed SMS Gateway loading screen issue when sending an SMS message
    - Fixed mobile data database error after upgrading firmware with the 'Keep settings' option

- Fixed rpcd memory leak issue
- Fixed network information gathering
- Fixed 3G LED not being active in 3G mode
- Fixed data limit accuracy issue
- Fixed SIM Switch back to default SIM crash loop when SIM1 is disabled
- Removed unused SIM Switch struct objects
- Fixed incorrect loading after saving Failover configuration
- Fixed escaping '#' symbol from hotspot username and password fields
- Fixed NTP GPS Synchronization switch to enable GPS service
- Fixed I/O Juggler hour condition interval issue
- Patched CVE-2021-40528 vulnerability
- Patched CVE-2021-40490 vulnerability
- Patched CVE-2020-16120 vulnerability
- Fixed VLAN section creation
- Returned Interfaces "Port priority" option
- Fixed missing Content-Type header to initial WebUI response
- Fixed RIP information parsing in status page
- Fixed OpenVPN IPv6 netmask validation
- Fixed SNMP Trap Settings Host/IP field validation
- Fixed Cumulocity authentication reset
- Fixed Events Reporting rule saving

## [RUTX\\_R\\_00.07.00](#) | 2021.07.16

### • New

- New WebUI based on Vue.js 2.6.12
- RutOS updated to OpenWrt 19.07.7 base
- DNP3 Master and DNP3 Oustation
- 'Restore to user's defaults' SMS Utilities rule

### • Improvements

- Updated firewall to release 3
- Updated kernel to version 4.14.221
- Updated uhttpd to version 2020-10-01
- Updated xtables-addons to release 9
- Updated mwan to version 2.8.14
- Updated pcre to version 8.44
- Updated curl to version 7.74
- Updated sqlite to version 3.33
- Updated ncurses to version 6.2
- Updated OpenSSL to version 1.1.1k
- Added full MODBUS register address expansion specifier for Data to Server
- Added full MODBUS register address legend
- Added Client ID option for the MQTT protocol in Data to Server
- Improved Data to Server sleeping accuracy
- Improved Data to Server username validation; now space is allowed
- Added firmware version OID to the SNMP service
- Added IP address family option field to the SNMP page
- Added SNMPv6 section to the SNMP Communities page
- Renamed the 'System -> Users' page to 'System -> System Users'
- Moved password changing option to the 'System -> System Users' page
- Switched to ar8216 driver

- Added IPsec XAUTH support
- Improved OpenVPN updown, init scripts to write info about instance in JSON
- Added AES-256-GCM encryption support to OpenVPN
- Added extra configuration parameters to DMVPN
- Added PSK conversion to DMVPN and single PSK types
- Improved Package Manager package installation, deletion and dependencies
- Improved Package Manager download process over FOTA
- Added new Input/Output values manageable over RMS
- Added IPv6 traffic logging
- Made 'Network -> Failover' and 'Network -> Interfaces' page data draggable on multiple browsers
- Added Input/Output Post/Get URL parameter t\_time changing delay and time to seconds or milliseconds
- Added message storage management by config value
- Improved QMI error handling and status tracking
- Turned on modem in preinit for correct power-on sequence
- Added Post/Get feature to turn mobile data on/off
- Added the possibility to use 2gonly/3gonly/4gonly arguments for cellular service command alongside current 2g/3g/lte arguments
- Added "Phone number" and "Message" fields for "Send SMS" option
- Added "Host to ping from SIM1" and "Host to ping from SIM2" fields
- Added support for multiple USB to Serial adapters
- Added option to send SMS warning messages to Hotspot users authenticated with SMS OTP when specified amount of data is used up
- Added option to switch back to primary SIM card after timeout
- Improved I2C communication
- Added peer groups to BGP access list dropdown
- Added TCP MD5 authentication support for BGP

- **Fix**

- Added glib2 patch to fix CVE-2019-13012 vulnerability
- Added ntfs-3g patch to fix CVE-2019-9755 vulnerability
- Added WolfSSL patch to fix CVE-2021-3336 vulnerability
- Added Busybox patch to fix CVE-2018-1000500 vulnerability
- Added netifd, odhcp6c IPv6 routing loop on point-to-point links patches to fix CVE-2021-22161 vulnerability
- Fixed Android clients IPsec MTU/MSS size
- Fixed wrong IPsec DPD value saving
- Changed IPsec PSK maximum length to 128 symbols
- Fixed SSTP remaining up after package removal
- Fixed DMVPN crypto\_proposal write to config
- Fixed I/O Juggler's SMS sending to correct group
- Fixed I/O Scheduler's relay state issue
- Added I/O direction check while changing IOs via I/O Post/Get
- Fixed float endianness mismatch on some devices MODBUS TCP Master, MODBUS Serial Master
- Fixed UPnP issue that caused config changes to apply only after service restart
- Fixed WebUI files caching when upgrading firmware
- Fixed WebUI date display format
- Fixed MODBUS returning incomplete MAC address data
- Fixed GPS time synchronization for DST regions



- Fixed depleting IPv6 RA timeout when the ISP doesn't send RA updates
- Added "Transaction timed out" error handling
- Fixed PPPOE connection loss when wrong session PADT packet arrives
- Added gcont object tracking and info update if this service is restarted
- Fixed default SMS storage
- Fixed SMS warning sending after Mobile Data Limit change
- Fixed DHCP relaying over mobile networks
- Changed PIN code maximum length to 8 symbols
- Fixed 'I/O status' message to include correct Input/Output name based on info in ubus ioman objects
- Fixed 'Over IP' serial type's UDP issue in client mode
- Fixed DLNA connections count total in statistics page
- Fixed WiFi Hotspot's Walled Garden issues
- Fixed WiFi Hotspot data logging issues
- Fixed P2P group information processing vulnerability in wpa\_supplicant
- Added validation to Walled Garden Address list field
- Fixed wrong VRRP IP address writing to file
- Fixed DLNA connections count total in statistics page
- Fixed JSON-RPC issue that caused incorrect state returns

## [RUTX\\_R\\_00.02.06.1](#) | 2021.02.10

### • Fix

- Added dnsmasq patch CVE-2020-25681, CVE-2020-25682, CVE-2020-25683, CVE-2020-25684, CVE-2020-25685, CVE-2020-25686, CVE-2020-25687
- Fixed SSH reachable over SIM IP in early boot
- Fixed modem status after failed network scan
- Fixed mbnfcfg function and PIN check logic
- Fixed PPTP server interface naming
- Fixed correct client PPTP interface name selection for route creation
- Fixed adding helper to firewall's wan zone when enabling PPTP configuration
- Added package size checking when manually installing a package
- Fixed 'New Firmware Available' message display after firmware upgrade

## [RUTX\\_R\\_00.02.06](#) | 2020.12.31

### • New

- External Quectel modem support
- Operator Whitelist/Blacklist
- WPA3 WiFi encryption

### • Improvements

- Updated base to OpenWrt 19.07.4
- Added Phone Groups as possible SMS recipients to SMS Post/Get
- Added PSK support for MQTT Broker/Publisher
- Changed Output Scheduler structure
- Removed limitation of one configuration per Input
- Added multiple modem support for TR-069
- Fixed parsing user uploaded custom OpenVPN configuration files containing carriage returns
- Added iptables conntrack flush on WAN Failover if IPsec is enabled
- Optimized package responsible for sending/receiving GRE Tunnel keepalive packets

- Added extra error checking to Package Manager when downloading packages
  - Added data usage info for both SIM cards to RMS
  - Added logging to syslog when Ping/Wget Reboot "Action" is set to 'None'
  - Improved display of configuration tables when a lot of information is shown
  - Renamed MODBUS strings to uppercase
  - Added redirect to configuration page after a new configuration is created with the 'Add' button
  - Added option to create a Configuration Profile from current configuration
  - Added data validation to Profiles Scheduler fields
  - Replaced the Firewall 'Helpers' page with conntrack helper configuration for each firewall zone
  - Increased dynamic list maximum amount of values to 50
  - Added the possibility to save email accounts without entering email username and password
  - Unified device access password validations
  - Expanded DDNS validation for domain input to accept emails
  - Added SMS Utilities rule to reset mobile data usage for specified interface
  - Improved SMS Utilities VPN status rule to support custom configurations
  - Added SMS storage limit check after inserting a SIM card
  - Changed modem name from primary to internal if device has only one built-in modem
  - Improved SIM count check during init
  - Added the possibility to ignore DFS channels when automatic channel selection is performed (for 5 GHz WiFi)
  - Removed unsecure WPA-PSK and WPA-EAP encryption support
  - Improved Hotspot Landing page address validation to accept a trailing slash
  - Removed unnecessary warning message in the Hotspot page
  - Disable Wireless device & interface configurations when WiFi device is in 'pending' state
  - Removed unused 'Expiration time' option in the Hotspot page
  - Added the possibility to unpair all paired Bluetooth devices at once
  - Improved Bluetooth device to pair selection
  - Moved all USB related services to the 'Services -> USB Tools' page
  - Added 'General' page to 'Services -> USB Tools'; the page contains a list of all USB devices and the option to safely unmount the devices
  - Added 'passive-interface' and 'default-information' options to the OSPF configuration page
  - Added NHRP dynamic route status page
  - Split VLAN configuration page into two separate ones: 'Port Based' and 'Interface Based'
- **Fix**
    - Fixed IPsec Passthrough subnet/ip value parsing to make it dynamic for leftsubnet
    - Fixed occasions when error messages overlap buttons
    - Fixed I/O state saving after revert back to original state
    - Fixed IPsec connection after reboot
    - Fixed bridged interface configuration for L2TPv3
    - Removed trailing newlines in returned SNMP strings
    - Fixed Events Reporting waiting to send email before rebooting
    - Fixed MQTT MODBUS Gateway not working when topics have special characters
    - Swapped pin3 and pin4 values in MQTT Publisher
    - Added an 'IP4Table' option to advanced interface configuration
    - Fixed an issue where User Scripts were being deleted after device reboot
    - Fixed various WebUI validation bugs, typos, option hints & alignments

- Fixed a bug that caused an internal sever error after logging in with a username that contained special characters
- Fixed crashes that occur after configuration files are not correctly generated
- Fixed a Firewall Port Forwarding bug which caused an internal sever error when no 'Protocol' was selected
- Fixed changing WebUI mode bug while current page is accessed with POST method
- Fixed password allowed lengths and tooltips
- Fixed mountpoint display
- Removed non-supported SMS Utilities rules
- Fixed SMS sending to Phone Group on I/O event
- Changed device name in 'Status' message to configured name instead of the default one
- Added modem reinit after SIM card initialization failure
- Fixed SMS Limit checking when messages exceed the set SMS limit
- Moved 2-8 PDP contexts to 9-16 the 2-8 are necessary for SIM card MIB APNs
- Changed mobile interface subnet to /32
- Fixed modem SIM card checking
- Fixed multi SMS handling on SMS Limit
- Fixed Call Utilities multiple SMS sending per received call
- Fixed SMS storage limit check on device reboot
- Changed SNMP mSignal, mTemperature and numSatellites datatypes to correspond to devices' MIB files
- Fixed WiFi SSID validation
- Fixed keeping Hotspot Walled Garden address list after firmware upgrade
- Fixed internal server error upon opening the 'Wireless' Status page while WiFi device band is set to 'Auto'
- Fixed erroneous data usage display of external modem after it's been disconnected

## [RUTX\\_R\\_00.02.05.2](#) | 2020.11.19

- **Fix**
  - Randomized the global rate limiter to mitigate "SAD DNS" attack

## [RUTX\\_R\\_00.02.05.1](#) | 2020.09.30

- **New**
  - DLNA media server
  - iptables NETMAP extension
  - "Flush connections on" option for WAN Failover
  - New firmware notifications
  - Updated header logo from 'Teltonika' to 'Teltonika | Networks'
  - USSD command support
  - Time sync via network operator's station
  - SQM QoS
  - USB Tools
  - USB to Serial adapter support
  - Auto format USB storage devices to NTFS
  - Storage Memory Expansion
  - 802.11r support
  - WiFi Scanner
- **Improvements**
  - Improved WebUI page loading speed

- Added Basic/Advanced mode selection in Setup Wizard
- Added a dropdown with a search function for time zone selection
- Added "copy to clipboard" button in Cloud Solutions next to MAC and Serial
- Added option to send all Modbus records in one packet
- Disabled IPV6 services on LAN by default
- Added password hashing in Post/Get pages
- Added a warning message about rebooting the device while certificate files are being generated
- Added status option to uploaded custom OpenVPN configuration file
- No longer showing "Enable OpenVPN config from file" option if "Enable external Services" is selected
- Added some missing placeholder values
- Added warning message about unsaved changes when leaving Auto Reboot, Periodic Reboot, Wireless pages
- Added port selection to SSTP configuration
- Changed Periodic Reboot service name to Reboot Scheduler
- Added table row highlights on hover
- Changed section name from 'Email users' to 'Email accounts' in the Recipients page
- Added network interface automatic assignment to firewall zones when interface protocol is switched
- Adjusted Azure validations
- Adjusted Local/Remote subnet field validations
- Adjusted Hotspot field validations
- Unified VPN overview section option names and titles
- Removed mandatory requirements for inter-zone forwarding source & destination options in Firewall zone configuration
- Added placeholder values for drop down options in Routing pages
- Increased maximum package upload size
- Removed mobile interfaces from Hotspot configuration
- Added "Passthrough subnets" option to IPsec configuration page
- Added package size checking when installing packages via Package Manager
- Optimized switching between Basic and Advanced WebUI modes
- Added missing services to Events Reporting page when selected Event is "Config change"
- Improved general web design, ordering and positioning
- Added word wrap in the Unsaved Changes page
- Centered 'Apply' button in the Profiles page
- Hid network interfaces with DHCPv6 protocol in Overview page while in Basic WebUI mode
- Changed tcpdump "Select storage" option value from 'Internal storage' to 'RAM memory' in the System → Administration → Troubleshoot page
- Added more descriptive error messages when connection to FOTA server fails
- Updated "Local address" hint in l2tpv3 page
- Updated phone number placeholders to +37000000000
- Updated SMS rule descriptions related to phone numbers and email accounts
- Made SMS/Mobile data limit options always visible in Overview Setup page
- Added indications for which antenna connector is connected to which modem
- Adjusted Modem FW file validations
- Added network selection option in Traffic logging page
- Reworked Q-in-Q configuration page
- Added loading spinner and a "No GPS signal" message to GPS Map page

- Removed incorrect GPS analog input option from GPS HTTPS settings
- Made ESSID value mandatory
- Added wireless device status display in Wireless Overview page
- Moved Hotspot2.0 to Services menu
- **Fix**
  - Fixed DDNS freeze issues
  - Fixed Firewall Traffic Rules Source and Destination address field validations
  - Started using more stable, builtin ar82xx switch driver
  - Symlinking tty devices in one place
  - Fixed period when sending packet curl timeouts in Modbus Data Sender
  - Fixed "active SIM" register value retrieval after regression in Modbus TCP Slave
  - Fixed Hotspot 'Trial access' function
  - Fixed OpenVPN TLS Cipher display and added a limit to number of ciphers
  - Fixed various WebUI validation bugs, typos & option hints
  - Fixed DHCP lease range validation and value saving in Interfaces page
  - Fixed error messages when creating interfaces with incorrect names
  - Fixed various section toggling bugs
  - Fixed username validation in SNMP page
  - Fixed certificate file importing bugs & common name display in Certificates Manager page
  - Fixed interface option related to IPv4 and IPv6 in Routing pages
  - Fixed OpenVPN multi-line command that adds client specific parameters
  - Fixed DHCP lease range validation in Basic mode
  - Fixed incorrect sorting in dynamic tables
  - Fixed routing table writing and deleting
  - Fixed incorrectly displayed type when no protocol is selected
  - Removed Wireguard interfaces from the Interfaces page
  - Fixed SNMP user access mode display in SNMPV3 Users Overview page
  - Fixed SNMP memory leak on chilli module
  - Fixed MD5 and SHA256 checksum calculations
  - Fixed DHCP-options field validation to allow separating parameters with commas
  - Fixed Package Manager side menu entry updates right after package upload
  - Fixed Wireguard port selection
  - Fixed VPN zone status display
  - Fixed lua errors when Start/End time option is empty
  - Fixed incorrectly displayed OpenVPN protocol
  - Fixed Lua errors in Profile Scheduler and Firewall Zones
  - Removed */log* folder from Troubleshoot file directories
  - Fixed endless spinner when applying profiles
  - Fixed nil value in the Traffic Logging page
  - Fixed "Units" option dependency on "Enable DHCP" option in the Setup Wizard's LAN page
  - Fixed redirecting to login page after factory setting restore (reset)
  - Removed Unsaved Changes notification when downloading Troubleshoot/tcpdump files from the System → Administration → Troubleshoot page
  - Vulnerability fixes for Package Manager and Certificates Manager pages
  - Fixed Firewall zone placeholder (removed "-- Please select --" and left "Unspecified")
  - Fixed update from server option in the Firmware page
  - Added missing error messages when password is invalid in default password change page

- Fixed "Lease time" option in the Setup Wizard's LAN page
- Fixed error 500 when accessing Advanced pages while in Basic mode
- Increased allowed character lengths for MQTT Broker and Data to Server
- Fixed XSS vulnerabilities in package manager and package file upload pages
- Fixed incorrect OpenVPN configuration saving
- Fixed NHRP lua error
- Removed "Wireguard" from Status → Services display if it is not installed
- Fixed crashing issue when getting "SIM slot in use" status value
- Fixed sending status SMS to other number
- Fixed "Change mobile settings" rule service setting
- Fixed SMS Forwarding To HTTP "URL" option validation
- Fixed Mobile Signal graph data display
- Changed message type from 'error' to 'info' from Auto Reply page
- Fixed manual operator selection validation
- Fixed mobile interface authentication settings reset after selecting auto APN mode
- Fixed libgsm password and serial authorization
- Added workaround for mobile to switch LAN port throughput problem for ath79 target
- Fixed Hotspot login page signup fields and notifications
- Removed unnecessary default Hostname and URL values from GPS pages
- Fixed AVL I/O incorrect option display in input rule configuration
- Fixed "Enabled" option design in GPS Geofencing page
- Fixed MAC address validation in Mobile Utilities page for Wake on LAN SMS rule
- Fixed incorrect JSON parsing, eternal spinner when unpairing devices & RSSI display in the Bluetooth page
- Fixed wireless interface turning on/off in the Wireless page
- Added connected client number indication to the Overview page and Side Widget
- Fixed platform tags in the Wireless Device edit page
- Added checking if the device has 2.4/5 GHz wireless devices
- Added missing "Hotspot 2.0" service in the Status → Services page

### [RUTX\\_R\\_00.02.04.3](#) | 2020.07.31

- **New**

- Backup archive MD5 & SHA256 checksum calculation to help user identify altered backup archives
- Package signature check to verify that a package comes from Teltonika

- **Improvements**

- Updated APN database

- **Fix**

- Fixed CVE-2019-17367
- Fixed hiding of configuration pages that users of a specific group don't have read access to
- Fixed firmware upload script

### [RUTX\\_R\\_00.02.04.1](#) | 2020.07.02

- **New**

- 'Mobile Passthrough' mode
- Mobile signal real-time graph
- USB Tools page with "USB to Serial" and "Printer Server" sections

- Mobile data usage charts
- Profile change action to "I/O Juggler"
- Relay control to Call Utilities
- 'Certificates' page for generating and managing TLS certificates
- 'Drag & Drop' support for Overview page tables
- 'Speed Test' feature
- AVL I/O support
- JSON formatting option for Data to Server
- During this release a new package was released - [WireGuard](#)

- **Improvements**

- Added timeout and keep-connection options to Modbus TCP Slave
- Removed incorrect SMS character counter from SMS Utilities page
- Improved mobile interface creation
- Improved L2TPv3 functionality with VLAN
- Improved 'Profile Scheduler' with minute accuracy
- Reordered VPN configuration options
- Standardized section header styles
- Unified spelling of dropdown values
- Added information about 'Package Manager' packages before updating firmware
- Updated services management to Status → Services page
- Improved performance of firmware upgrades from server
- Improved security features related to file uploading and HTTP headers
- Changed RAM/flash memory units from MiB to MB
- Updated warning message and lease deletion message for static leasing
- Moved 'Country code' option to general tab
- General web responsiveness improvements

- **Fix**

- Fixed SMS send function in Hotspot 'SMS OTP' authentication mode
- Fixed Enable/Disable function in Wireless page
- Fixed validation in Wireless interface edit page
- Fixed 'Wireless Scans' page table headers on smaller screens; changed 'Wireless Scans' page action button positioning
- Fixed BLE device data collection immediately after pairing
- Fixed missing data fields in Bluetooth device database
- Fixed symlinking tty devices in one place
- Fixed validations and option saving in OSPF page
- Fixed various element positioning bugs on smaller screens
- Fixed switching to advanced mode notification when accessing non existing pages
- Fixed validations in Traffic Logging page
- Fixed showing failover section only for interfaces with failover rules
- Fixed static leases redirect after saving
- Fixed empty dropdown values in 'I/O juggler' and 'Network Shares'
- Fixed interface IP address validation in DDNS page
- Fixed various spelling mistakes
- Fixed broken address option in the 'Troubleshoot' page
- Fixed dropdown select element double clicking issue
- Fixed basic/advanced mode switching with Microsoft Edge browser
- Fixed firmware upgrading bug when LAN interface with a changed name exists
- Fixed redirecting to the 'Interfaces' page when mode is changed from basic to advanced and user is in the 'LAN' or 'WAN' pages

- Fixed validation of custom header in 'Data To Server' page
- Fixed "Type" option error in Failover page
- Updated username and password validations
- Fixed profile change action in 'I/O Juggler'
- Fixed bidirectional GPIO change feature

## [RUTX\\_R\\_00.02.03.4](#) | 2020.06.15

### • Fix

- Fixed modem option set in basic mode for mobile interfaces
- Fixed libgsm connection state function
- Fixed config generation script

## [RUTX\\_R\\_00.02.03.1](#) | 2020.05.15

### • New

- Responsive WebUI design
- New Access Control window for managing IP access
- Attack Prevention page under Firewall settings
- New IPv6 options in WAN, LAN and VPN pages
- Hotspot Users Management page
- Progressive Web Application support and extra page caching when device is configured with a valid SSL certificate
- OpenVPN configuration file upload functionality
- Unsaved Changes page
- Bridge mode display in Overview page
- Input inversion buttons
- Dynamic switch port display in side widget
- Bluetooth data to server for RUTX devices that support Bluetooth
- WiFi traffic logging for RUTX devices that support WiFi
- Input/Output manipulator
- Full unicode SMS support
- IO control and status over SMS
- MQTT Publisher: added support to send I/O values
- Bluetooth: "ELA" sensors frame format support
- Bluetooth: available and paired devices pagination, ability to pair/unpair multiple devices at the same time
- Ability to install packages stored in backup file
- IP unblock SMS rule
- New Modbus TCP Slave register fields
- New Modbus Alarm redundancy options
- NTPD version 4.2.8p14

### • Improvements

- Added HMAC configurations for OpenVPN
- Added AES ciphers support for OpenVPN
- Added MTU and gateway metric to mobile interfaces
- Added DHCP lease range display in the Network → LAN page
- New Hotspot user signup page design and field validation
- Hotspot validation for local user authentication
- Moved wireless device configuration
- Added warning messages when deleting interfaces/configurations



- Added available FW on server status messages in FW upgrade page
- Added mobile PIN code saving note
- Changed UPnP redirect delete button style
- Changed functionality of reset button in the Firewall → Custom Rules page. Now fully resets to default
- Added hints on all value fields about field validation
- Added pin information for iostatus SMS rule
- Removed modem traps if no modem is present
- Updated wireless information in side widget
- Optimized section toggling logic, removing all toggling associated flags required prior optimization
- Standardized section edit page headers in WebUI Services
- Improved the look of error pages and messages
- Updated Wiki links to [wiki.teltonika-networks.com](http://wiki.teltonika-networks.com)
- Disabled 'Clear data limit' button for inactive interfaces
- Reordered menu, moved 'Default configuration' to the Backup page, moved 'Diagnostics' to the Troubleshoot page
- Added credentials input fields to Data to Server
- Changed hint of 'Allow guest' in the Network Shares page
- Updated Periodic Reboot service status in the Services page
- Improved hint for incoming calls option
- Changed OpenVPN LZO option to a dropdown with an extra 'none' option
- Removed 'MAC auth' option from Hotspot with LAN interface
- Removed unnecessary 'Status' column and added "No users currently connected" message in the Hotspot Users Management page
- Added suggestion to create a profile if there are no profiles created in the Profiles → Scheduler page
- Filtered out unnecessary interfaces ending with \_4\_6 in firewall page
- Moved SIM switch to separate page and added check interval and retry count options
- Changed side widget button color to blue to make it more visible
- Added 'Dynamic List' option limit (20 elements)
- Added info message to Events Reporting & Mobile Utilities rules, if selected recipient or sender is a group or no groups are created yet
- Improved stm32 recv message handling
- Modbus TCP test now allows reading more than 125 coils/inputs
- Reworked NTP page, separating general options from NTP specific ones
- Fixed grammar errors in Mobile page

- **Fix**

- Added validations for Wireless configuration advanced settings fields
- Added name validation in the Firewall → Port Forward page, fixed custom protocol value selection and display
- Added validation for GRE 'Remote subnet IP' option
- Added missing Mobile Data limit input validation
- Fixed Schedulers' cells to be of equal width
- Fixed uploading backup from lower firmware version
- Fixed SSTP certificate upload function
- Fixed IPsec 'Aggressive' setting value saving in config file
- Fixed bug where GPS NMEA collecting file field wasn't shown when NMEA collecting was enabled
- Fixed LAN settings static lease name validation

- Fixed issue that sometimes caused failures when redirecting to Mobile interface edit page
- Fixed descriptions in Access Control → Security page
- Fixed SMS Utilities GPS coordinates rule error, swapped longitude and latitude in places
- Fixed mixed up WiFi and SMS values in SMS Utilities Rules
- Fixed HTTP login while HTTPS session is still active
- Removed Bluetooth device from available devices section if it is in paired devices section
- Fixed real time CPU load in the Overview page
- Fixed multiusers correct group creation when upgrading from 2.00.2 FW to 2.01.1 FW with the 'Keep all settings' option
- Fixed advanced static routing display for all routes
- Fixed file upload error messages in backup page
- Fixed 'Select' option for Firefox browser
- Fixed RAM usage display in side widget
- Fixed access to non existing pages
- Fixed saving empty message field in Events Reporting rules
- Fixed I/O socket pinout
- Fixed showing correct APN settings when upgrading with the 'Keep all settings' option
- Fixed Events Reporting send test email page display when email contains 2 new lines in a row
- Fixed phrasing and grammatical mistakes in SMS messages tooltip
- Fixed LAN Overview section display
- Fixed early login page load after reboot or backup upload
- Fixed Package Manager notification display
- Fixed SMS rule display for different devices
- Fixed PPTP and L2TP client configuration creation with same name
- Fixed static route removal if corresponding interface is removed
- Fixed Realtime Graphs → Traffic tab display
- Fixed OpenVPN username and password writing to file
- Fixed time zone sync between Setup Wizard & NTP pages
- Fixed WiFi interfaces table style when no interfaces are present
- Fixed DHCP lease range validation
- No longer write anything into Events Log when forcing reboot to prevent device hang-up
- Fixed restore settings when upgrading from Yocto base firmware on TRB1 targets
- Fixed launching stm32 autoflash script at early boot to avoid possible keep settings loss
- Removed certain Events Reporting options on devices that don't have the corresponding functionality
- Fixed recovery from lost connection for MQTT publisher, Modbus MQTT gateway
- Resolved using SHA512 bug for versions 02.01 or lower with additional (-b) parameter

## **RUTX\_R\_00.02.01.1 | 2020.01.15**

- New features:
  - Email to SMS
  - Static IP lease
  - SMS OTP and MAC auth in Hotspot
  - Hotspot logs
  - TOS in HotSpot
  - Custom URL parameters while using external landing page in Hotspot
  - Expiration time for Hotspot
  - Wireless status page

- USB mount settings
  - Site blocking list from file
  - Events Reporting via Email
  - STunnel
  - Multi-User support
  - Mobile page
  - Operators control
  - Bluetooth passive device scanning
  - Hotspot 2.0
  - Modbus MQTT gateway
  - Package manager
  - RUT FOTA
  - TR-069
- Improvements:
    - Deleted OpenVPN forward rule on instance deletion
    - Improved "SMS Forwarding to Email" field validations
    - Rename IPsec fields from right/left to remote/local
    - Bluetooth style improvements
    - Applied same style on all scheduler templates
    - Renamed "Setup Wizard" steps
    - Renamed "IPv4 and IPv6 routes" headings
    - Renamed "User groups" to "Users & Recipients"
    - Added "Clear data limit" on a specific date
    - Enable/Disable all SMS-Utilities rules at once
- Fixes:
    - Fixed WAN mobile interfaces reload
    - Fixed parsing interface IP address in WAN
    - Fixed OSPF "Hello Interval" field hint
    - Fixed field validation on "Port Forward" create form
    - Fixed display build date
    - Removed "Bring up on boot" option
    - Fixed Mobile page with additional USB modem
    - Fixed creating SNAT rule without port
    - Fixed SDK archive name

## [RUTX\\_R\\_00.02.00.2](#) | 2019.10.11

- Fixes:
  - WiFi fix

## [RUTX\\_R\\_00.02.00.1](#) | 2019.09.27

- New features:
  - Auto APN
  - MQTT
  - Web Filter
  - Dynamic Routes
  - GRE over IPsec
  - Wireless Hotspot
  - VRRP

- HTTP POST/GET
  - Network Shares
  - VLAN multiple tags functionality
  - SMS HTTP POST/GET
  - SMS Forwarding
  - Auto Reply
  - SMS storage
  - Switch back to primary SIM
  - Email groups
  - Default VPN firewall zones
  - Support for XT25F128B spi-nor memory
  - Support for Bluetooth
- Improvements:
    - Updated Kernel to version 4.14.131
    - Updated Strongswan to version 5.8.0
    - Updated curl to version 7.60.0.4 (fixes CVE-2018-14618, CVE-2018-16839, CVE-2018-16840, CVE-2018-16842, CVE-2019-3823, CVE-2019-3822, CVE-2018-16890)
    - Updated mosquito to version 1.5.8
    - Updated dnsmasq to version 2.80
    - Updated iptables to version 1.6.2
    - Updated openssl to version 1.0.2s
    - Updated zlib to version 1.2.11
    - Updated hostapd to the 2018-05-21 version (fixes CVE-2019-9494, CVE-2019-9495, CVE-2019-9496, CVE-2019-9497, CVE-2019-9498, CVE-2019-9499, CVE-2019-11555)
    - Updated fstools to the 2019-03-28 version
    - Updated procd to the 2018-03-28 version
    - Updated rpcd to the 2018-11-28 version
    - Updated ubox to the 2018-02-14 version
    - Updated ubus to the 2018-10-06 version
    - Updated uci to the 2019-05-17 version
    - Updated Firewall to the 2018-08-13 version
    - Updated netifd to the 2019-01-31 version
    - Updated uhttpd to the 2018-11-28 version
    - Switched to mac80211 WiFi driver
    - Updated IPsec page
    - Updated DMVPN page
    - Updated Overview configuration page
  - Fixes:
    - Fixed operator name parsing
    - Fixed serial reading
    - Fixed SIM card PIN code setting
    - Fixed I/O event handling
    - Fixed backup save after device restart
    - GPS init script fixes
    - IPsec page rework
    - Failover/Load Balancing mobile interface fixes
    - L2TP/PPTP/SSTP configuration fixes
    - TX power save setting fixes
    - Refactored profiles functionality
    - Added write to config option in Call Utilities

- Wireless config migration fix
- Firmware checksum fix

## **RUTX\_R\_00.01.06 | 2019.07.24**

- New features:
  - Added Wake on LAN feature
  - Added SSTP VPN support
  - Added mobile bridge feature
  - Added Status → Network page
  - Added SIM Switch feature
  - Added SMS Limit feature
  - Added save and restore SIM PIN code from flash
  - Added feature to monitor switch port events
  - Added Events Reporting send to RMS functionality
  - Added FOTA support for RUTX08, RUTX10, RUTX11
  - Added Modbus TCP master function
- Improvements
  - Added microcontroller version information
  - Updated Wireless page design and WiFi widget in overview page
  - Updated Overview widget style
  - Updated stm32 firmware
  - Updated LED logic
  - Changed check for new FW logic
  - WebUI style updates
- Fixes:
  - Fixed multiwan function. Changed firewall traffic control to routing rules control
  - NTP time zone display fix
  - LED functionality fix
  - Changed time function used for rollback timestamps
  - Login form updated and other fixes
  - Fixed firmware update checksum mismatch
  - lua error on map when GPS is disabled fix
  - Firmware update percentage and check box fix
  - LAN interface creation with short names fix
  - WAN state and IP print fixes
  - OpenVPN new port save in firewall rule fix
  - RUT FOTA bug fixes

## **RUTX\_R\_00.01.04.5 | 2019.06.14**

- Improvements:
  - Revert settings logic updated
- Fix:
  - Firmware update checksum mismatch fix
  - DHCP dnsmasq fix
  - Wireless improvements and bug fixes
  - Increased RMS HTTP Proxy resource limit

## **RUTX\_R\_00.01.04.1 | 2019.05.17**

- New features:
  - Add initial wireless support
  - Added SNMP support
  - Added Advanced Routing functionality
  - Added L2TP VPN
  - Added PPTP VPN
- Improvements:
  - Added signal strength logging and reporting to Events Log
  - Added authentic firmware check
  - OpenSSL updated to version 1.0.2r
- Fixes:
  - Wireless improvements and bug fixes
  - Fixed IPsec Phase 1 and Phase 2 keys lifetime not saving bug
  - Input Output improvements and bug fixes
  - Fixed router values sent from SMS utilities
  - WebUI style fixes
  - Fixed RMS proxy multiform submits

## **RUTX\_R\_00.01.03 | 2019.04.25**

- New features:
  - Adapted WebUI for RUTX08
  - Added DMVPN support
  - Added HTTP support
  - Added SMS message input field validation and counter
  - Added UPnP support
  - Added GRE Tunnel support
  - Implemented dynamic routing with BGP, OSPF, RIP, EIGRP and NHRP protocols
  - Added manual network band lock support
  - Added Events Log
  - Added Events Reporting
- Improvements
  - Updated OpenVPN client count to 20
  - WebUI style updates
- Fixes:
  - Profile scheduler fixes
  - Mobile service crash fix
  - Ping Reboot IP field validation fix
  - LED functionality related fixes

## **RUTX\_R\_00.01.02 | 2019.03.19**

- New features:
  - Added configuration profiles
  - Updated WebUI style
  - Added Reboot button

- Improvements:
  - curl updated to version 7.64.0
  - openssl updated to version 1.0.2q
  - dropbear updated to version 2018.76
  - busybox updated to version 1.28.3
  - ustream-ssl updated to latest version
  - OpenVPN updated to version 2.4.6
  - OpenVPN-Easy-RSA updated to version 3.0.4
  - ubus updated to version 2018-10-06
  - uhttpd updated to version 2018-11-28
  - NTP updated to version 4.2.8p12
- Fixes:
  - Root CA validation and page style fixes
  - Hardware compatibility check fix
  - DDNS force IP renew fix
  - Site Blocking enable column fix
  - Don't show rules in Load Balancing mode when in failover page fix

## **RUTX\_R\_00.01.01 | 2019.02.05**

- New features:
  - Initial firmware release