

# RUTX14 Firmware Downloads

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This page contains firmware files for RUTX14 devices. Look to the table below or the [changelog](#) to find download links.

To upgrade firmware using WebUI, follow the instructions in [RUTX14 Firmware](#).

RUTX14						
File	Type	Release date	Size	MD5	Changelog	
<a href="#">RUTX_R_00.07.08_WEBUI.bin</a>	Latest FW	2024.07.18	23.35 MB	cbd1cb7561b07d942ca554f7e15945af	<a href="#">Link</a>	
<a href="#">RUTX_R_00.07.07.3_WEBUI.bin</a>	Mass production FW	2024.06.25	24.1 MB	2a178d88cd1ba39057912292dfe714e1	<a href="#">Link</a>	
<a href="#">RUTX_R_GPL_00.07.08.tar.gz</a>	SDK	2024.07.18	79.75 MB	85cf7e075a24fdf5421f3ec4ca9c2bec		

**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\\_00.07.08](#) | 2024.07.18

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

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- **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

- Firmware **R\_00.07.06.8** was removed due to an issue with inefficient memory allocation for LED control.
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- **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
    - 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 an issue with SIM detection
- 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
- IPv6 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
  - Removed redundant "Action" option in Periodic Reboot
  - 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 SIM card slot retrieval when modem is busy
    - Fixed an issue where SIM switch can fail
    - 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 libiwinfo 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 band 8 support
    - 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 frf 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 default admin group access rights
  - 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

## [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

- **Fixes**

- 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

- **Fixes:**

- 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

- **Fixes:**

- 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

- **Fixes:**

- 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

## [RUTX\\_R\\_00.07.02](#) | 2022.05.23

- **New features**
  - 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

- **Fixes**

- 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
- 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

### • Fixes

- 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 features**

- DFOTA modem upgrade system for Quectel modems

- **Improvements**

- Removed L2TP section title prefixes

- **Fixes**

- 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 features**

- 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 libiwinform to version 2.1
- Added netifd library for additional information related to network interfaces
- Updated openssl to version 1.1.11
- 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 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 return SIM count command
- 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

- **Fixes**

- 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 libgcrypt 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

• **New features**

- 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

- **Fixes**

- 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**

- Initial RUTX14 firmware release