

# RUT901 Firmware Downloads

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This page contains firmware files for RUT901 devices. Look to the table below or the [changelog](#) to find download links.

To upgrade firmware using WebUI, follow the instructions in [RUT901 Firmware](#).

## RUT901

File	Type	Release date	Size	MD5	Changelog
<a href="#">RUT9M_R_00.07.08_WEBUI.bin</a>	Latest FW	2024.07.18	12.69 MB	947f74fbd5bcd5db7888f802e68	<a href="#">Link</a>
<a href="#">RUT9M_R_00.07.07.3_WEBUI.bin</a>	Mass production FW	2024.06.25	12.63 MB	39bbc8484f4d8de512e679010e7d0675	<a href="#">Link</a>
<a href="#">RUT9M_R_GPL_00.07.08.tar.gz</a>	SDK	2024.07.18	21.19 MB	d869e87e6883c37ad05705add3141217	

**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

### [RUT9M\\_R\\_00.07.08](#) | 2024.07.18

- **New**

- **Network**

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

- **Services**

- Data to Server: added 'Lua script' data input
- 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**
    - 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: added roaming check before interface up
    - 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
- VLAN: added ability to configure VLAN 0
- Wireless: added warning when user configures mesh on radio with automatic frequency channel
- Wireless: added support for wireless MAC-filter MAC ranges
- Wireless: changed Radius Accounting port is not required when configuring access point with enterprise encryption
- 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
  - Dynamic DNS: added Lookup hostnames support
  - 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
  - Mosquitto: added large package size check for MQTT clients
  - MQTT Modbus Gateway: improved mosquitto reconnect time and service will try to recover few times before exiting
  - MQTT Publisher: improved MQTT connection handling
  - OPC UA Client: added security modes
  - OPC UA Server: added security modes
  - OPC UA Server: added service status display
  - OpenVPN: added support for decrypting private key when uploading a configuration file
  - OpenVPN: improved instance status state
  - OpenVPN: added options to specify an IP address pool for dynamic assignment to clients

- SMPP: added brute-force prevention
- SMPP: added TLS/SSL support
- SMS Utilities: added security warning in "Authorization method" configuration
- SNMP: changed interface module OID structure
- SNMP: improved User-based Security Model (USM) brute force attack prevention measures
- Stunnel: improved global instance settings dependencies
- emailrelay: updated version to 2.4.1
- OpenVPN: updated version to 2.6.9
- stunnel: updated version to 5.72
- **System**
  - Access Control: added certificate key length warnings
  - Access Control: adjusted access control when all pages are blocked
  - Access Control: added certificate file download for CLI to work on all browsers
  - API Core: implemented functionality to include warning messages for vulnerable certificates
  - Boot: improved modem startup reliability
  - Package Manager: added multi package actions
  - Package Manager: added status filter
  - Package Manager: moved package upload action to main page
  - Package Manager: added links to installed packages pages
  - Package Manager: refactored "Packages" page
  - Package Manager: updated opkg repository link to use https
  - RutOS: improved GPL example page to align with new software architecture
  - Troubleshoot: refactored Modem debug section to display responses in single field, added clear button to remove received responses
  - Troubleshoot: added support for multiple syslog servers
  - UI Core: added additional message with IP address to loading screen for scenarios when redirect to different IP address happens
  - UI Core: added toast message hiding when text is too long
  - Update Firmware: added 'Firmware version' data in screen after firmware upload
  - WebUI: added functionality to cancel loading screen if it takes 30 or more seconds
  - WebUI: removed all ubus method calls from webui
  - WebUI: improved language caching
  - WebUI: added password generator for first login modal
  - WebUI: added sticky position to side menu
  - WebUI: added default password hint to login error message
  - WebUI: added warning messages for low-security certificates
  - Kernel: updated version to 5.15.159
  - 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
- 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 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
  - 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
  - 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
  - SMPP: fixed username bypass problem
  - SMPP: fixed password validation
  - SMS Gateway: fixed SMS to Email recipient formatting according to RFC5322
  - SNMP: fixed GSM mSignal OID value type
  - SNMP: fixed GSM module memory leaks
  - SSTP: fixed functionality when the default route option is not enabled
  - Web Filter: fixed whitelist not working for some hosts when using IPv6
  - **System**
    - Administration: fixed repeated validation on cleared inputs and added validation when new password matches the old one
    - API Core: fixed API method validation during upload action
    - API Core: fixed error messages for POST method
    - API Core: fixed option list validation
    - Boot: fixed factory settings restore (firstboot) not deleting hidden files
    - Events Log: fixed refresh button in event log table
    - IP Block: fixed adding MAC addresses back to whitelist when unblocking all of them
    - Recipients: made phone number field required
    - Setup Wizard: fixed lan ip step not changing ip address
    - Troubleshoot: fixed system log and kernel log buttons to be enabled with read only rights
    - Update Firmware: fixed misleading "Firmware version" status of "N/A" to "FOTA service is disabled" when FOTA is disabled
    - Update Firmware: fixed issue when infinite spinner appears after updating device firmware from server without having internet connection
  - **CVE Patches**
    - Patched CVE-2023-52425
    - Patched CVE-2023-52530
    - Patched CVE-2024-25629
    - Patched CVE-2024-28757
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## [RUT9M\\_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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## [RUT9M\\_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
      - 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
      - Uboot: fixed firmware recovery update via uboot on Windows
  - **CVE Patches**
    - CVE-2024-31948
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## [RUT9M\\_R\\_00.07.07.1](#) | 2024.05.03

- **Improvements**
  - **Network**
    - Mobile: improved connection establish time for uqmi protocol
  - **System**
    - WebUI: improved first login password change logic
    - Certificates: updated Root CA certificates
- **Fix**
  - **Network**
    - Mobile: fixed denied roaming flag set
- **CVE Patches**
  - CVE-2024-2397

- **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
- 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
- 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

- **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
- 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
- Mobile: improved connection establishment time on device boot up
- 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
- Dnsmasq: updated dnsmasq to version 2.89
- 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
- **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
  - OpenVPN: added the bridge option for selecting the network device to be bridged with
  - OpenVPN: added possibility to create more than one TAP client
  - 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
  - SSTP: updated package version to 1.0.19
  - Mosquitto: updated package version to 2.0.17
- **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
  - GPL: added offline package preparation command for GPL builds
  - Speedtest: added multiple connections support to improve accuracy

- Kernel: updated to version 5.15.149
- 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 issue where RSSI value was displayed as 0 when using 2G/3G network types
    - 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 scanning issue when connected via the same network
    - Wireless: fixed mesh functionality
    - Wireless: fixed missing signal strength value on Client interfaces
    - Wireless: fixed Client interface taking excessive time to connect after boot
    - Wireless: fixed missing EAP authentication in Client mode
    - WebUI: fixed mesh nodes not being shown in Status->Wireless->Interfaces page
    - WebUI: fixed proposed configuration settings when connecting to a mesh point network
    - Wireless: fixed connected wireless clients being shown duplicated
    - MultiAP: fixed client not switching to another AP if incorrect password was provided
  - **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
- Modbus Client: fixed issue where service freezes when SMS alarm is sent
- 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
  - JavaVM: 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-2024-25062

- CVE-2024-27913
  - CVE-2024-22365
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## [RUT9M\\_R\\_00.07.06.10](#) | 2024.04.04

- **Fix**
    - **System**
      - Ledman: fixed memory leak
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## RUT9M\_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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- **New**
  - **WebUI**
    - Added eSIM support
- **Improvements**
  - **Services**
    - IPSec: disabled libgmp in favor of openssl
    - IPSec: updated Strongswan to 5.9.6
- **Fix**
  - **Services**
    - IPSec: increased charon load timeout
    - IPSec: fixed loading of large private keys

## [RUT9M\\_R\\_00.07.06.6](#) | 2024.03.04

- **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
- 

## [RUT9M\\_R\\_00.07.06.5](#) | 2024.02.21

- **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 an issue where DNS resolution failed for wireless clients connected to an access point configured on a specific VLAN

- **WebUI**

- Fixed action descriptions in the traffic rules table
    - fixed BACnet allow remote access functionality

- **System**

- Fixed WiFi LED indication when access point is turned off
      - Fixed year 2038 problem with time counter overflow
- 

## [RUT9M\\_R\\_00.07.06.3](#) | 2024.01.17

- **Improvements**

- **Services**

- Increased DLMS Client connection timeout for TCP sockets

- **Fix**

- **Services**

- Fixed DLMS Client memory leak with profile generic COSEM class

- **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
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## [RUT9M\\_R\\_00.07.06.1](#) | 2024.01.04

- **Fix**

- **Services**

- Fixed issue with NTPclient zombie processes
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## [RUT9M\\_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
- **WebUI**
  - 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
  - Added new ADC IC "TLA2021" support
  - Added new Serial IC "CH343" support
- **Improvements**
  - **Network**
    - Disabled operator scan when SIM card is not inserted
  - **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
    - Added possibility to assign mobile interface in SQM service
    - 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 cURL version to 8.4.0
- Updated kernel version to 5.4.259
- 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 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 wireless client authentication failures when using AP and STA with WPA3-SAE authentication
- Fixed STA connection failure to AP with hidden SSID using WPA3-SAE authentication
- Fixed incorrect signal strength values in Wireless scan results

#### ◦ **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 default profile SMS Utilities I/O status rule configuration in Profiles 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 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
  - Fixed Unicode SSID representation in Wireless scan results
- **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

## [RUT9M\\_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

## [RUT9M\\_R\\_00.07.05](#) | 2023.10.09

- **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 more mobile usage parameters to SNMP
  - JamVM package
  - SIM Idle Protection package
- **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
  - 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
  - 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
- IP6 table configuration option for DHCPv6 protocol in Network -> WAN 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 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
    - WPA3/WPA2 (PSK/SAE) mixed mode is now default encryption standard
    - Improved operator information parsing logic on MeiG modem
  - **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 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
- 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 5.4.251
  - 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 curl version to 7.88.0
  - 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 "routername" 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 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 wrong or empty WAN state info

- 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
- Fixed LTE band 14 management with Quectel modems
- Fixed Wireless disconnection issues
- Fixed connection tracking for main interface in Failover
- **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 received SMS messages parsing with trailing whitespaces
  - Fixed VPN status rule message text in SMS Utilities
- **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 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 "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 error when user has no write permissions in Speed Test page

#### ○ **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-2023-4128 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-2023-48174 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

## [RUT9M\\_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

## [RUT9M\\_R\\_00.07.04.4](#) | 2023.06.26

**Note:** Firmware version *RUT9M\_R\_00.07.04.4* released on 2023.06.26 was removed due to an issue on certain modems with failing initial mobile connection after upgrading from *RUT9M\_R\_00.07.02.5* or lower.

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- **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

- **System**

- Device name is now displayed in browser tab when in login page

- **Fix**

- **Network**

- Fixed a connection issue with bridge/passthrough mode when reconnecting ethernet cable
    - Fixed long mobile operator list parsing for whitelist/blacklist functionality
    - Patched CVE-2023-32233 vulnerability
    - Fixed an issue with Multi AP service remaining enabled when disabling
    - Fixed default networks in WAN firewall zone and possibility to add a network that



is not yet created

- **Services**
  - Fixed connection establishment for RMS MQTT service
  - Implemented partial restart when connection with RMS server fails
  - Fixed device name resetting to default upon WebUI page refresh
  - Fixed being able to set device name without passing validations
  - Fixed WireGuard port change in firewall traffic rule when modifying instance port

## [RUT9M\\_R\\_00.07.04.3](#) | 2023.05.11

- **Improvement**
  - **System**
    - Optimized firmware image size
    - 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

## [RUT9M\\_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 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

## [RUT9M\\_R\\_00.07.04.1](#) | 2023.03.24

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

## RUT9M\_R\_00.07.04\_WEBUI.bin | 2023.03.07

**Note:** Firmware version **RUT9M\_R\_00.07.04\_WEBUI.bin** 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**
    - 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 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
- **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
  - **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
- Fixed PDP authentication not working on EC200A modems
- **Services**
  - 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 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
- Fixed firmware version display
- 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

### [RUT9M\\_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

### [RUT9M\\_R\\_00.07.03.3](#) | 2023.01.25

- **Fix**
  - **Network**
    - Fixed disabled WiFi interface after factory reset

### [RUT9M\\_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

### [RUT9M\\_R\\_00.07.03.1](#) | 2023.01.03

- **New**
  - **System**
    - Initial firmware release