

# RUT240 Firmware Downloads

[Main Page](#) > [RUT Routers](#) > [RUT240](#) > **RUT240 Firmware Downloads**

This page contains firmware files for RUT240 devices. Look to the table below or the [changelog](#) to find download links.

To upgrade firmware using WebUI, follow the instructions in [RUT240 Firmware](#).

File	Type	Release date	Size	MD5	Changelog
<a href="#">RUT2_R_00.07.06.12_WEBUI.bin</a>	Latest FW	2024.06.20	10.88 MB	ec57dcd515f3ee35408647ade889fc87	<a href="#">Link</a>
<a href="#">RUT2_R_00.07.06.11_WEBUI.bin</a>	Mass production FW	2024.05.07	11.13 MB	3056b559405c4e93a6f13c14b82d46e9	<a href="#">Link</a>
<a href="#">RUT2XX_R_00.01.14.7_WEBUI.bin</a>	Latest FW (legacy)*	2023.05.19	12.9 MB	0e5c6e998a50c3e12c3ca1e35375eadc	<a href="#">Link</a>
<a href="#">RUT2_R_GPL_00.07.06.12.tar.gz</a>	SDK	2024.06.20	20.55 MB	4e0fdf780c03fc33296e8cf7be59ef08	
<a href="#">RUT2XX_R_GPL_00.01.14.7.tar.gz</a>	SDK (Legacy)	2023.05.19	499.5 MB	97e19effdb29354978c66e0a85c4d6bc	

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

\* **Legacy FW** - firmware using the legacy RutOS design. You can find all legacy firmwares in [RUT240 Firmware Downloads \(legacy WebUI\)](#) page.

## FW checksums

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

## Notes

- FW version RUT2\_R\_00.07.0X contains many major updates, some of which made certain functionalities of RUT240 no longer available to utilize. The full list of features that were removed since FW version *RUT2XX\_R\_00.01.14.7* can be found [here](#).

## Changelog

[RUT2\\_R\\_00.07.06.12](#) | 2024.06.20

- Global changelog for **R\_00.07.06.12** - [LINK](#)

## [RUT2\\_R\\_00.07.06.11](#) | 2024.05.07

- **New**
    - **Network**
      - WebUI: Added 'starting' status when interface is just enabled
  - **Improvements**
    - **Network**
      - Dnsmasq: updated to version 2.89
    - **System**
      - Certificates: updated Root CA certificates
  - **Fix**
    - **Network**
      - WebUI: fixed 'unknown' status being displayed for disabled interfaces initially
      - Firewall: fixed higher amounts of custom firewall rules not saving
      - WebUI: fixed network and failover interface metric sorting synchronization issue
      - WebUI: fixed mobile connection reload when changing DHCP server settings
    - **System**
      - Events Log: fixed log.db hangs on rare occasions
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## [RUT2\\_R\\_00.07.06.10](#) | 2024.04.04

- **Fix**
    - **System**
      - Ledman: fixed memory leak
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## [RUT2\\_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**
    - **Network**
      - Mobile: fixed an issue where RMS was reporting incorrect signal values with SLM750 modems
    - **Services**
      - IPsec: increased charon load timeout
      - IPsec: fixed loading of large private keys
    - **System**
      - Ledman: fixed signal strength LEDs indication
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## [RUT2\\_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
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## [RUT2\\_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 SLM750 modems would display incorrect signal values
      - 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
    - **System**
      - Fixed WiFi LED indication when access point is turned off
      - Fixed year 2038 problem with time counter overflow
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## [RUT2\\_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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## [RUT2\\_R\\_00.07.06.1](#) | 2024.01.04

- **Fix**
    - **Services**
      - Fixed issue with NTPclient zombie processes
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## [RUT2\\_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
- **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 hostapd version to 2023-09-08
- 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

- **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 an issue when Call Utilities rules would be active on data only modems
- 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

- **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

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## [RUT2\\_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
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## [RUT2\\_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
    - Software Offloading enabled on default configuration
    - 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

- **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
- 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
- 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
    - 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
- **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 device selecting 4G/5G service mode when 3G and manual operator configured
- 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 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-2023-36369 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
- 

## [RUT2\\_R\\_00.07.04.5](#) | 2023.07.24

- **Improvements**

- **Network**

- Added metric field support in BGP Route-maps 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

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## [RUT2\\_R\\_00.07.04.4](#) | 2023.06.26

**Note:** Firmware version *RUT2\_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 *RUT2\_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 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
- 

## [RUT2\\_R\\_00.07.04.3](#) | 2023.05.11

- **Improvement**
    - **System**
      - Removed SSH RSA key generation
      - Added SSH ECDSA and ED25519 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
- 

## [RUT2\\_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 libiwininfo 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 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 frr vulnerability CVE-2022-37035
    - Fixed an issue with mobile metric setting migration from legacy FWs to RUTOS
    - Removed ability for non root users to edit scripts that get executed as root
- 

## [RUT2\\_R\\_00.07.04.1](#) | 2023.03.24

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

## [RUT2\\_R\\_00.07.04](#) | 2023.03.07

- **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
- **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 LED animation during firmware upgrade
- Fixed settings migration issue that caused unreachable Internet after upgrade from a legacy FW version
- Fixed an issue with OpenVPN TAP configuration migration from legacy FWs
- 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

## [RUT2\\_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

- **System**

- Fixed legacy backup upload
- Fixed upgrade from legacy FW issue with keep settings

## [RUT2\\_R\\_00.07.03.3](#) | 2023.01.25

- **Fix**

- **Network**

- Fixed disabled WiFi interface after factory reset

## [RUT2\\_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

## [RUT2\\_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
    - Fixed OpenVPN migration from legacy firmwares
    - Fixed not being able to create or edit PPTP instances after upgrading from legacy firmware
  - **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

## [RUT2\\_R\\_00.07.03](#) | 2022.12.16

- **New**
  - **Network**
    - Firewall DMZ page
  - **Services**
    - Java package
    - SFTP server support
    - OPC UA client
    - 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 individual WiFi toggle support
- Added error message when DFS channel is selected during scanning
- **Services**
  - Added CSP headers to Hotspot Landing Page
  - Added hotspot user script validation
  - Improved logging of disconnecting client devices
  - Implemented Hotspot 'forget' method, which removes user from DB by MAC
  - 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
- **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
    - 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
    - Added wget tracking method to WAN Failover
    - Added interface checks to remove inaccurate Failover events from the Event Log
    - Fixed Wired WAN connectivity issue when Failover interfaces are disabled
    - Fixed Failover fallback issue
  - **Services**
    - Fixed GRE, MQTT broker, IP alias, MAC filter & Failover migration from legacy firmwares
    - 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
- Removed unnecessary field from the Port Mirroring page
- 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
- 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
- **System**
  - 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

## [RUT2\\_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 interface option reset after VLAN ID change
- Removed memory leak on port events
- Fixed WiFi Scanner out of range crash when iterating collected data



## [RUT2\\_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 OpenVPN tls-auth and tls-crypt option names

## [RUT2\\_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
- **Fixes:**
  - 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

## [RUT2\\_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

## [RUT2\\_R\\_00.07.02.2](#) | 2022.06.27

- **Improvements:**

- 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
- Updated FSTools package to version 2022-05-03
- Added security headers to web requests
- Fixes:
  - Fixed CVE-2019-12900 libbz2 vulnerability
  - Fixed behavior of some gsmctl commands
  - 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 band locking issue
  - Fixed race condition for wireless configuration initialization
  - Fixed operator control issue

## [RUT2\\_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

## [RUT2\\_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
  - 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 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 PDP logging for Verizon operator
- Added multiwan support for Wireguard default route
- Fixed wireless signal strength display when no clients are connected
- Fixed loss of connectivity for clients when router is in STA+AP mode
- Added validation that prevents automatic connection to first unencrypted WiFi AP when using MULTI AP
- Fixed Wifi Scanner data not being stored in certain scenarios
- Fixed WiFi scanner not turning on after FW upgrade with 'keep settings'
- Fixed Hotspot user group limit not resetting on specified time
- Removed an RMS error message when no Hotspot users were created
- Fixed Hotspot landing page image upload issue

- Fixed 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 APN migration if APN was selected from APN list on legacy firmware
- Fixed RIP configuration migration from legacy firmware versions
- Fixed Wireguard interface status setting migration from legacy firmware versions
- Fixed default config options for SSH and Web access SMS Utilities rules

## [RUT2\\_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 second mobile interface creation issue
- 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

## [RUT2\\_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

## **RUT2\_R\_00.07.01 | 2021.11.18**

**Note:** Firmware version RUT2\_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**

- RUTOS WebUI