# **RUTXR1 Firmware Downloads**

Main Page > RUTX Routers > RUTXR1 > RUTXR1 Firmware Downloads

This page contains firmware files for RUTXR1 devices. Look to the table below or the <u>changelog</u> to find download links.

To upgrade firmware using WebUI, follow the instructions in **RUTXR1 Firmware**.

RUTXR1					
File	Туре	Release date	Size	MD5	Changelog
RUTX_R_00.07.06.10_WEBUI.bin	Latest FW	2024.04.04	24.6 MB	6ade4748118720d9f8c72524498acf69	<u>Link</u>
RUTX R 00.07.06.10 WEBUI.bin	Mass production FW	2024.04.04	24.6 MB	6ade4748118720d9f8c72524498acf69	<u>Link</u>
RUTX R GPL 00.07.06.10.tar.gz	SDK	2024.04.04	80.1 MB	a6653437efdbba12151579615a86b2f3	

**Note:** packages for <u>Package Manager</u> are independent from firmware and can be downloaded in the <u>Package Downloads</u> page.

# FW checksums

Checksums for firmware files can be found here.

# Changelog

# Global RUTOS changelog can be found here: LINK

\* This is universal changelog of RUTOS. Changes made to features that are not present in some devices, do not affect them.

# <u>RUTX\_R\_00.07.06.10</u> | 2024.04.04

Global changelog for R 00.07.06.10 - LINK

# RUTX R 00.07.06.8 | 2024.03.25

• Firmware **R\_00.07.06.8** was removed due to an issue with inefficient memory allocation for LED control.

Global changelog for R\_00.07.06.6 - LINK

# RUTX R 00.07.06.5 | 2024.02.21

Global changelog for R\_00.07.06.5 - LINK

# **RUTX R 00.07.06.3** | 2024.01.17

Global changelog for R\_00.07.06.3 - LINK

# RUTX R 00.07.06.1 | 2024.01.04

- Fix
- Services
  - Fixed issue with NTPclient zombie processes

# **RUTX R 00.07.06** | 2023.12.20

- New
  - Network
    - Enabled IPv6 by default for mobile interfaces
    - Added operator blacklisting and whitelisting based on mobile country code
    - Added SIM card not inserted event in Events Log
    - Added 802.11v BSS Transition Management and 802.11k Radio Resource Measurement
  - Services
    - Added OPC UA Server
    - Added the ability to set port for TACACS+ in PAM service
    - Added switch to enable using root certificate authority for MQTT alarms in Modbus Client services
    - Added new alarm action "Ubus event" in Modbus Client services
    - Added new input "Modbus alarms" in Data to Server service
    - Added wget ping subtype support in Events Reporting service
    - Added new Post/Get service action "mobile\_sim\_pin" for changing used SIM PIN code on the device
    - Added TLS support for OverIP serial functionality

### WebUI

- Added Tailscale VPN support
- Renewed user interface design
- Added network interface name change functionality
- Added last resort configuration option for multiwan policy rules
- Added indication when new modem firmware is available
- Added mobile connection establishment display in mobile status page
- Added default value for "Reset threshold" field in Low Signal Reconnect feature

## • System

- Added ability to enable/disable SSH access for specific users in System Users
- API support

# • Improvements

### Network

- Disabled operator scan when SIM card is not inserted
- Updated carrier aggregation value to be shown as active/inactive
- Changed default MTU to 1500 for Mobile interfaces
- Added two radio support on one SSID in Wireless

### Services

- Expanded GRE VPN keep alive functionality to disable routes from unreachable tunnel
- Added PKCS#12 certificate container authentication method in IPsec VPN
- Added TLV message payload support for SNMP service
- Added Purple.ai configuration profile
- Replaced option "No leading zeros" with "Remove all zeros" in Over IP serial functionality
- Added possibility to assign mobile interface in SQM service
- Added reboot on storage device disappearance and re-appearance
- Added additional anonymous phone number validation in Mobile Utilities service
- Added "N/A" signal strength response in DNP3 service if SIM card is not inserted

### • WebUI

- Improved Events Log page loading by adding asynchronous pagination
- Removed requirement for Diffie-Hellman parameters in OpenVPN service
- Added improvements for creating OpenVPN IPv6 configurations
- Added auto redirect after changing router's IP address or port
- Added "Interface" dropdown for interfaces selection in Wake on LAN service
- Increased Data to Server service MQTT topic length limit to 65535 characters
- Added OSPF external routes section to Status page
- Moved device menu entry "Reboot" to header menu
- Added indication in Overview, Status -> Mobile and WAN pages when mobile data limit is reached
- Updated Operator state field to show if modem is in limited service
- Combined Mobile Usage day, week, month and total pages into one
- Updated Realtime data -> Mobile signal page design to show all available modems and their bands data in one graph
- Added message when SIM card requires PIN/PUK code in Status -> Mobile page
- Moved WiFi scanner page to Services section

## System

- Added Mosquitto CVE patch 2023-28366
- Added Mosquitto CVE patch 2023-3592
- Updated hostapd version to 2023-09-08
- Updated cURL version to 8.4.0
- Updated kernel version to 5.10.199
- Updated Mac80211 version to 6.1.24
- Added RMS data display to generated troubleshoot
- Added downloaded Package Manager packages list to generated troubleshoot
- Added process activity load list to generated troubleshoot
- Changed default OPKG feed to use Teltonika's URL

## • Fix

#### Network

- Fixed DMVPN firewall rule creation issues
- Fixed RUTX VLAN keep settings issue when WAN port configuration are overwritten with 1st vlan
- Fixed Failover missing active rules when using multiple source and destination IP addresses
- Fixed mobile service crash due to buffer overflow while reading partially overwritten SMS
- Fixed an issue with Manual APN connection making attempts too rapidly
- Fixed deny data roaming functionality when transitioning between roaming and home operator network
- Fixed network disconnection on mobile network detach and DHCP lease loss situations
- Fixed VoLTE configuration after modem reboot
- Fixed Mobile interface bridge and passthrough mode connectivity loss
- Fixed an issue where rarely PIN code would get removed after SIM switch
- Fixed mobile operator list being not updated after changes in WebUI
- Fixed issue where mobile interface was unreachable after device reboot or interface restart while using Failover service
- Fixed unstable Wireless mesh connection
- Fixed low Wireless mesh throughput
- Fixed concurrent Wireless STA and AP functionality on 5 GHz band

#### Services

- Fixed SSH module enable in PAM service
- Added minimum free space check when saving logs to flash in Logging service
- Fixed "Set multiple coils" function sending too many bytes in Modbus Client services
- Fixed multiple Events Reporting messages being sent when Firewall configuration is changed
- Fixed VRRP instances advertising wrong virtual IPs
- Added Hotspot information in SNMP MIB file
- Fixed registered Hotspot Local Users showing random username
- Fixed selection of MAC Auth for LAN interfaces in Hotspot service
- Fixed inconsistent Hotspot login behaviour when using MAC Auth with Password
- Fixed instance shutdown after last local user deletion
- Fixed Cumulocity app not sending any telemetry data
- Fixed Call Utilities failure when caller id is hidden during a call
- Fixed serial timeout not working in Over IP serial functionality
- Removed "Echo" option in Modbus TCP over Serial functionality
- Fixed CRC verification failing when CRC is correct in Modbus TCP over Serial functionality
- Fixed crash when getting unexpected messages from RTU in Modbus TCP over Serial functionality

#### • WebUI

- Fixed side menu style issues when Japanese language is used
- Fixed displaying of vendor names in Topology page
- Fixed language packs being selectable when still in Package Manager queue
- Added ability to configure IPv6 BGP peer
- Fixed RelayD configuration issues after keep settings
- Fixed realtime graphs responsive design issues
- Fixed Network Shares users deletion
- Fixed not all LAN interfaces shown in dropdown in Hotspot service page

- Fixed modem updater legacy firmware flashing
- Fixed wireless realtime data to show signal as unavailable with no connected clients
- Fixed WiFi scanner disconnecting AP users
- Fixed setup wizard errors in Wireless configuration page

# • System

- Patched FRR CVE-2023-38406
- Patched FRR CVE-2023-38407
- Patched FRR CVE-2023-41358
- Patched FRR CVE-2023-41360
- Patched FRR CVE-2023-41909
- Patched FRR CVE-2023-47234
- Patched FRR CVE-2023-47235
- Patched OpenSSL CVE-2023-3446
- Patched OpenSSL CVE-2023-3817
- Patched LibXML2 CVE-2023-39615
- Patched LibXML2 CVE-2023-45322
- Patched FFMPEG CVE-2021-28429
- Patched FFMPEG CVE-2022-48434
- Patched dnsmasg CVE-2023-28450
- Fixed running out of space when SSHFS is mounted in /tmp while generating troubleshoot
- Fixed WebUI access after upgrading from legacy RutOS version

# **RUTX\_R\_00.07.05.4** | 2023.11.09

# • Improvements

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

# <u>RUTX\_R\_00.07.05.3</u> | 2023.10.30

- New
  - System
    - Added support for GD5F2GM7 and GD5F2GQ5 GigaDevice NAND flashes
- Fix
- Network
  - Improved device stability when using IPv6 for modem connections

# **RUTX\_R\_00.07.05** | 2023.10.19

- New
  - Network
    - Added "shared.m2m.ch" APN for Swisscom IoT operator to APN database
    - Added "gamma" APN to auto-APN database
    - Added "soracom.io" APN for Soracom operator to APN database
    - Added "simbase" APN to auto-APN database
    - Added "pnd" APN for Pond IoT to auto-APN database
    - Added "spitfire1" APN for Spitfire operator to APN database

- New argument in "gsmctl" CLI command for Carrier aggregation
- Numeric mode support for modem AT commands
- Enabled dynamic MTU configuration on mobile interfaces by default
- WDS support for wireless bridging

### Services

- DLMS Client package
- 7zip package
- TincVPN package
- Added router uptime and mobile connection uptime data parameters to SNMP
- Custom MQTT publisher/subscriber topics definition support
- Alternative configuration file upload support for MQTT Broker service
- Device Provisioning Service support for Azure IoT Hub service
- Added more mobile usage parameters to SNMP
- 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
- IP6 table configuration option for DHCPv6 protocol in Network -> WAN page
- Wireless interface QR code generator
- Channel analysis page Status -> Wireless -> Channel Analysis
- Disabled direct network interface deletion when it is associated with a wireless interface
- Limited to a single section configuration and added IP address field for Relayd service
- "Fast roaming" configuration for Wireless service in Client mode
- Updated Status->Network->Wireless page to display interfaces as cards and added ability to filter connected clients by selected interface
- "Write to config" option for SIM Switch action in I/O Juggler service
- Modem Debug page
- APN database management page added to package manager
- Added "Message forwarding" option in SMS Rules page when rule type is "Execute custom script"
- Ability to unblock SIM card and insert SIM PIN in Overview page
- New SMS rules "Reset mobile connection" and "Reload config"
- "SMS limit clear due" display in Overview page
- Added modem temperature to System -> Status page

### System

- Mechanism to rebrand WebUI using GPL
- Possiblity to create web applications with closed-source GPL

## Improvements

### Network

- Moved FRR VTYSH package to package manager
- Made newly created Firewall Traffic, NAT rules and Port Forwards disabled by default
- Improved Interfaces to enable IPv6 DHCP server when mobile v6 or v4v6 PDP type is set.
- Improved IPSec performance throughput
- Improved auto APN selection
- SMS sending event is now logged into events log
- Improved roaming control
- Removed unused APN usernames and passwords from auto-APN database
- Added connection to the operator when no mobile interfaces are active
- Improved VoLTE management functions
- Improved cases where Low Signal Reconnect sometimes executed prematurely
- Improved wrong SIM PIN remove logic
- Added automatic reconfiguration when switching between wireless interface modes
- Added automatically generated name option for new network

### Services

- New reworked Data to Server
- UPNP moved to package manager
- Added IPv6 support for Modbus TCP Server/Client services
- Refactored Azure IoT Hub service
- Improved resiliency to timeouts in Modbus Client service
- Added PDU data type to Modbus read requests
- Added new formatters for MQTT alarms in Modbus Client service
- Added main section to make test functions independent in Modbus Client service
- Improved WAN IP register reading time in Modbus service
- Sped up default profile and profile template generation for Profiles functionality
- Optimized profile change time for Profiles functionality
- Added IPv6 support for Stunnel VPN
- Added MAC blocking for client connections after set amount of failed login attempts in Hotspot service
- Improved TCPdump by allowing to capture packets from any interface
- Added OSPF support for DMVPN
- Updated Hotspot password hashing to sha512
- A single SMS message with multiple PDUs is sent instead of multiple SMS messages in Email to SMS service
- Allowed connection to SMPP server using IPv6 address
- Extended IP unblock action functionality in SMS Utilities
- Increased allowed Email to SMS service message size to 61440 bytes

### • 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 seperate 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 seperate 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

Non-mobile: \*\*\* Removed redundant "Action" option in Periodic Reboot

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 5.10.188
- Updated UCI version to 2021-10-22
- Updated SSHFS version to 3.7.1
- Updated FRR suite to 8.4.2
- Updated cURL version to 8.2.0
- Updated TCPdump version to 4.99.4
- Updated C-ares version to 1.19.1
- Updated iproute2 version to 5.19.0
- Updated libubox package version to 2021-08-19
- Added CVE patch CVE-2023-2650
- Added additional firmware information in CLI prompt banner
- Connection mode LED now blinks on data transfer
- Changed "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 countrack information in generated troubleshoot archive

#### • Fix

## Network

- Fixed UDP Broadcast Relay service crashing on start without physical network device
- Fixed wrong or empty WAN state info
- Fixed connection tracking for main interface in Failover
- Fixed SMS limit period migration
- Fixed SMS limit size breaking various functionality
- Fixed custom IPv6 DNS option not overriding default DNS from operator
- Fixed an issue with blacklist and whitelist connection
- Fixed multipart SMS handling
- Fixed wrong SIM state display when SIM is fully blocked
- Fixed incorrect virginmobile APN MNC
- Fixed mobile operator scanning fault when no mobile interfaces are active
- Fixed mobile interfaces generating multiple events on mobile connection
- Fixed PDU SMS parsing when operator provides user data header in single part SMS
- Added scheduled data limit clear for inactive mobile interfaces
- Fixed Wireless AP and STA functionality for 5GHz band
- Fixed Wireless scanning issue with certain configuration
- Fixed Wireless transmit power changing without user input after saving different country code
- Fixed clients isolation functionality in Wireless
- Fixed Wireless STA authentification failure in case of channel change

- Fixed Multi AP startup when changing Multi AP configuration in Wireless
- Fixed client connection to EAP Wireless network

### Services

- Fixed reconnecting to inactive connections for Modbus Server service
- Fixed Modbus Client response after reboot write request
- Fixed Modbus Server to show error when trying to get operator name without SIM
- Updated Modbus Client to handle large numbers of schedule rules, when frequency is set to schedule (Daini
- Fixed "Input" rule displaying incorrect and missing ports in Network -> Firewall
  -> Traffic Rules
- Fixed WireGuard VPN endpoint resolving problem
- Peer cache is no longer deleted when ZeroTier service is restarted
- Fixed RMS data collection about the list of devices connected to WiFi
- Fixed showing incorrect Internet state in RMS
- Fixed WiFi client info display in RMS
- Implemented error handling when device is blocked or unrecognized by RMS
- Fixed L2TP client sometimes not adding routes on successful connection
- Fixed NTP time sync with browser functionality in some edge cases
- Fixed reinstalled packages" verification when device name is changed
- Fixed an issue where signal query would return invalid value instead of error in case of no signal in MQTT Publisher service
- Fixed OpenVPN firewall rule creation for both IPv4 and IPv6
- Fixed OpenVPN server crash loop after changing authentification 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 authentification
- Fixed package installation process bug when packages have different architecture names
- Added "bearer token" authentication functionality in Dynamic DNS
- Fixed MQTT Broker "local\_port" option keep settings migration
- Remove public keys when key-based authentication is disabled in Access Control
- Fixed "Parity" field "Mark" and "Space" options being ignored in DNP3 Serial services
- Corrected SNMP MIB file syntax according to standards
- Fixed returned port count in SNMP
- Fixed disabled CLI remote access taking up a session slot
- Fixed user deletion in Network Shares service
- Fixed router reboot inconsistencies after Storage Memory Expansion
- Fixed received SMS messages parsing with trailing whitespaces
- Fixed VPN status rule message text in SMS Utilities

### • WebUI

- Fixed empty events cards in Overview page when no content is available
- Fixed modal form inputs not clearing upon closing after nested modal is saved
- Fixed select menu closing when selecting custom option
- Fixed multi select expanding table row when adding new values
- Fixed global section caching after deleting a section in a table
- Fixed unpredictable search logic in tables

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

- Fixed wrong protocol data display in "Access control" page
- Fixed LAN interfaces not showing up before WAN interfaces in Status -> Realtime
  Data -> Traffic
- Fixed incorrect Bluetooth details modal size
- Updated to display "MAC address" on device details page
- Fixed disabling DLNA service when USB drive is removed
- Fixed error when user has no write permissions in Speed Test page
- Fixed "Clear Collect Data" button logic to not clear overall mobile usage info
- Fixed "Used data" showing large negative numbers for disabled mobile interfaces with Data Limit enabled
- Fixed carrier aggregation information when no connection is made or SIM card is not inserted
- Changed representation of mobile cell ID from hexadecimal to integer type
- Fixed Mobile Utilities "SMS forwarding to HTTP" URL generation
- Fixed an issue where sometimes bands were not represented correctly on certain modems
- Fixed provider information and IMSI value representation when SIM and modem cannot provide this information
- Fixed mobile pages throwing 404 error when modem disconnects
- Fixed WebUI showing mobile connection when no SIM card is inserted
- Updated Network -> Wireless interface add and delete button visibility in basic mode
- Fixed Wireless Multi AP incorrect SSID list after removal of an instance
- Fixed MAC address filtering in Network -> Wireless page to list only connected WiFi devices
- Removed "iostatus" rule from default list in SMS Utilities

# • System

- Patched CVE-2023-0386 vulnerability
- Patched CVE-2023-0464 vulnerability
- Patched CVE-2023-0465 vulnerability
- Patched CVE-2023-2602 vulnerability
- Patched CVE-2023-3772 vulnerability
- Patched CVE-2023-3773 vulnerability
- Patched CVE-2023-4128 vulnerability
- Patched CVE-2023-33476 vulnerability
- Patched CVE-2023-28484 vulnerability
- Patched CVE-2023-29469 vulnerability
- Patched CVE-2023-31490 vulnerability
- Patched CVE-2023-36369 vulnerability
- Patched CVE-2023-40283 vulnerability
- Patched CVE-2023-48174 vulnerability
- Delayed Custom Scripts execution on boot, after storage devices are mounted
- Fixed Custom Scripts permissions after save
- Changed certificate expiry calculation mechanism to fix Y2K38 bug
- Fixed downloading of certificates that have a space in their name in Administration
  Certificates -> Certificates Manager
- Fixed Events Log database rotation to prevent log partition space exhaustion
- Fixed duplication and sorting of all events IDs in Events Log
- Fixed FOTA crash when current hours is with leading 0
- Fixed crontab job removal after disabling FOTA
- Changed Mosquitto build options to not include cJSON library

- Fixed device name resetting to default upon refresh in Administration
- Fixed backup upload validation with memory expansion

# **RUTX R 00.07.04.5** | 2023.07.24

# • Improvements

- Network
  - Improved MBN reselection algorithm when switching SIM
  - Improved SIM card change detection algorithm
  - Improved connection establishment speeds after sim switch
  - Added metric field support in BGP Route-maps page

### • WebUI

Updated SIM slot labeling in modem card Overview page

### • Fix

### Network

- Fixed an issue with MBN selection when device is started for the first time
- Fixed an issue where MBN activation would not be successful
- Fixed service provider parsing when operator does not provide all fields for Quectel modems
- Fixed a condition where mobile connection would not get established after a SIM switch
- Fixed an issue with SIM switch causing connection problems

# RUTX R 00.07.04.4 | 2023.06.26

#### New

# Network

Travelmate package for captive portal redirection

### Improvements

### Network

Improved mobile operator query methods and operator name parsing in various services

# Services

- Improved UPNP lease file validation
- Improved DLNA 'Database directory' field validation to not allow ', ` and spaces

### System

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

# Fix

### Network

- Fixed a connection issue with bridge/passthrough mode when reconnecting ethernet cable
- Fixed long mobile operator list parsing for whitelist/blacklist functionality
- Patched CVE-2023-32233 vulnerability
- Fixed an issue with Multi AP service remaining enabled when disabling
- Fixed default networks in WAN firewall zone and possibility to add a network that is not yet created

### Services

- Fixed connection establishment for RMS MQTT service
- Implemented partial restart when connection with RMS server fails

- Fixed device name resetting to default upon WebUI page refresh
- Fixed being able to set device name without passing validations
- Fixed WireGuard port change in firewall traffic rule when modifying instance port

# RUTX\_R\_00.07.04.3 | 2023.05.11

### Improvement

- System
  - Removed SSH RSA key generation
  - Added SSH ECDSA key generation

### • Fix

## • Network

- Fixed an issue with mobile when Call Utilities configuration is invalid
- Fixed clients being unable to connect to wireless AP when multi AP configuration is empty
- Fixed an issue where sometimes PIN/PUK code was deleted when performing a SIM switch

### Services

Fixed incorrect mobile data usage provided to RMS service

# System

• Fixed an issue on bootloader web recovery hanging with certain firmware sizes

# RUTX\_R\_00.07.04.2 | 2023.04.18

#### New

nftables support

### Improvement

- Network
  - Added PDP profile registry and LTE SMS format functions & management for the Verizon network
  - Improved SIM detection algorithm
  - Improved Multi-APN connection establishment time

# • WebUI

Improved Overview page performance

### System

- Changed hostname to router name
- Updated OpenSSL to version 1.1.1t
- Updated CA certificates to version 20211016
- Updated libiwinfo to version 2022-08-19

### • Fix

#### Network

- Fixed IPv4, IPv6 mobile connection restarts
- Fixed operator scanning when mobile interface is disabled
- Fixed data limit and tracking when software flow offloading is enabled
- Added network reload call before bringing the mobile interface up
- Fixed a segmentation fault issue which would occur occasionally when switching between SIM cards
- Fixed Port-based VLAN ID calculation issue
- Fixed Ethernet interfaces showing incorrect transferred data values
- Fixed EEE disable issue that caused reduction in data transfer speed

- Fixed port priority validation in the Interfaces page
- Fixed PDP context authentication when using special characters

### Services

- 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 SIM LEDs' animation and logread error spam
- Fixed frr vulnerability CVE-2022-37035
- Removed ability for non root users to edit scripts that get executed as root

# RUTX R 00.07.04.1 | 2023.03.24

#### • Fix

# • Network

Fixed Data Limit issue

# RUTX\_R\_00.07.04 | 2023.03.07

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

### Improvements

# • WebUI

- Improved data persistence between page refreshes
- Improved page navigation behavior
- Improved redirect logic to open configuration edit modals
- Updated the 'Status -> Mobile' page
- Updated interface card in the Overview page
- Separated Sent and Received data bars on the chart in the Mobile Usage page

# • Network

- Made Software Flow Offloading Enabled by default
- Added an info message displayed when a faulty SIM card is inserted
- Added ResIOT operator's APNs to the APN database
- Improved mobile connection re-establishment after reboot
- Improved mobile connection recovery in cases where it was lost unexpectedly
- Improved 'Deny data roaming' operation when switching between operators
- Changed default WiFi AP cipher to CCMP (AES)
- Added the logging of MAC addresses rejected by a WiFi AP

### Services

- Added an error message when trying to send an SMS from the 'Send Messages' page with no SIM card inserted
- Changed the behavior of setting the 'Write to config' flag in the 'mobileoff' SMS rule

- Added argument support for the 'Execute custom script' SMS rule
- Added a frequency option 'schedule' Modbus Master
- Added pagination to Events Reporting overview
- Added limit to Events Reporting rule list
- Added email logging for Events reporting
- 'Sync with browser' button in the NTP page now also synchronizes the time zone
- Added a limit of 30 for NTP instances
- Made Networks selections in the 'Traffic Logging' page to display interface choices dynamically
- Added "make before break" option to IPsec configuration
- Added MODBUS TCP connection handling layer to MQTT-MODBUS Gateway
- Improved MODBUS Master connection handling to reduce connection count
- Updated modbus request error messages
- Added OpenVPN server ip block support
- Added MQTT support for MODBUS Master alarms
- Added the possibility to get the device's Ethernet port data via SNMP
- Improved error messages in the Serial Utilities page

# • System

- Updated bash to version 5.1.16
- Added detailed FW update failure error message to Events Log
- Improved firmware upload/validation error messages
- Updated Turkish language support
- Added protocol column to IP block page
- Added "vpns.log" file to the Troubleshoot package
- Added Wireguard tunnel information to the Troubleshoot package
- Updated default admin group access rights
- Updated DFOTA notification to show "More info" only when the update is forced

### • Fix

# ∘ WebUI

- Fixed MAC address showing on mobile interfaces
- Fixed mobile cell ID displaying in hexadecimal
- Fixed mobile data limit card creation in the Overview page
- Fixed modem widget disappearing from the Overview page
- Fixed Services page not displaying data after Thingworx package is installed
- Added DNP3 to the 'Status > Services' page

#### Network

- Fixed interface priority change issue
- Fixed a Custom Firewall Rule editing issue
- Fixed DMZ configuration saving while it is disabled
- Fixed Port Scan script execution failure
- Fixed Firewall zone duplication issue
- Fixed call function when VoLTE is disabled
- Fixed VoLTE control when IMS is not enabled
- Fixed mobile IPv6 IP checking when the device didn't get a correct IP address
- Fixed APN authentication when using empty credentials
- Fixed manual APN selection from list
- Fixed disabled WiFi interface after factory reset
- Fixed WiFi interface creation with SAE mixed encryption
- Fixed fiber priority option setting issue

#### Services

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

### System

- Fixed vulnerabilities CVE-2022-3524, CVE-2022-3566, CVE-2022-3567, CVE-2022-39188, CVE-2022-45934, CVE-2022-47929
- Fixed bash vulnerability CVE-2022-3715
- Fixed CGI-IO file download vulnerability CVE-2022-38333
- Fixed libxml2 vulnerability CVE-2022-40304
- Fixed libcurl vulnerabilities CVE-2022-43551 and CVE-2022-43552

- Improved file upload logic
- Fixed GPL firmware compilation with selected Tinc package
- Fixed OpenVPN Static Key migration via keep settings issue
- Fixed NTP time zone name setting migration when the name contains whitespaces
- Fixed language setting issue
- Fixed integer validation on industrial services
- Fixed LED indications when PDP type is IPv6
- Fixed issues with PDP type and SMS limit period migration via keep settings
- Fixed mobile network type LED indications when device is in Bridge or Passthrough modes
- Fixed LAN port LEDs staying on after being disabled

# **RUTX R 00.07.03.4** | 2023.02.09

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

# **RUTX R 00.07.03.3** | 2023.01.25

- Fix
  - Network
    - Updated init sequence

# RUTX R 00.07.03.2 | 2023.01.13

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

# <u>RUTX\_R\_00.07.03.1</u> | 2023.01.03

- Improvements
  - System
    - Remove front-end certificate validation
  - Network
    - Optimized mobile netifd script installation
- Fix

#### Network

- Fixed modem communication validation
- Fixed connection establishment in IPv6 only mode

#### Services

- Fixed libxml2 vulnerability CVE-2022-40303
- Fixed an IPsec Phase one & two setting migration issue
- Returned missing udp client count option to Over IP mode

## System

- Fixed JSON key parsing; keys can now be any printable character sequence
- Fixed memory leak in 'session' module

#### WebUI

Fixed file pretty name parsing

# RUTX R 00.07.03 | 2022.12.16

#### New

### Network

Firewall DMZ page

## Services

- Java package
- SFTP server support
- OPC UA client
- 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 switch back to default SIM after SIM Switch service disable
- Added wget tracking method to WAN Failover
- Added interface checks to remove inaccurate Failover events from the Event Log

#### Services

- Added OpenVPN IPv6 Web support
- Added format button for each USB device in USB Tools General page
- Reduced waiting time during storage device setup for Memory Expansion
- Optimized Storage Memory Expansion package size
- Replaced ntfs-3g with kernel-mode driver
- Added USB to Serial support for Modbus, MQTT Modbus Gateway, NTRIP, DNP3
- Added CSP headers to Hotspot Landing Page
- Added hotspot user script validation
- Improved logging of disconnecting client devices
- Added 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 nd 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

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

#### • WebUI

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

#### • Fix

#### Network

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

#### Services

- Fixed Printer service starting issue
- Fixed Printer service boot issues
- Fixed DLNA service reload issues on USB drive insert/remove
- Fixed 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 Events Reporting 'Changing to SIM1/SIM2' options
- Fixed Hotspot issues related to specific connected phones
- Fixed Wireless AP enabled by MODBUS TCP Master not showing in Wireless clients
- Fixed WiFi Scanner hostname validation issues
- Implemented Hotspot 'forget' method, which removes user from DB by MAC
- Fixed UCI SMS Rule return message to display new changes
- Fixed DNP3 issues when asking for modem temperature
- Fixed base64 encoding of SMS messages when forwarding to HTTP
- Fixed SMS sending issues when using multiple APN
- Added Gateway modem option to IP Block and WoL in SMS Rule edit
- Fixed unblocking IP addresses with an SMS message
- Fixed Mobile Utilities page not load properly on some occasions
- Fixed dbus vulnerability CVE-2020-35512
- Fixed dnsmasq vulnerability CVE-2022-0934
- Fixed ext4 vulnerability CVE-2021-3428
- Fixed kernel vulnerabilities CVE-2021-3669, CVE-2021-4203, CVE-2022-1353, CVE-2022-3435, CVE-2022-20008, CVE-2022-30594
- Fixed libxm12 vulnerability CVE-2022-29824
- Fixed Linux vulnerabilities CVE-2021-4148, CVE-2022-0480, CVE-2022-1055, CVE-2022-0886, CVE-2022-2663, CVE-2022-36879 for v5.4
- Fixed MQTT DoS vulnerability CVE-2021-41039
- Fixed privoxy vulnerability CVE-2021-44542
- Fixed python3 vulnerability CVE-2022-42919
- Fixed strongswan vulnerabilities CVE-2021-41991, CVE-2021-45079
- Fixed uboot vulnerabilities CVE-2022-30552, CVE-2022-30790
- Fixed switching between RMS connection types while the device is unregistered
- Fixed reload issues in website blocking feature
- Fixed IPsec PSK secret required field validation
- Fixed bandwidth limiting after QoS is enabled for the first time
- Fixed Dropbear issues when logging in over IPv6
- Fixed Modbus status in Status -> Services page
- Fixed Azure IoT Hub application issues when sending large volumes of data
- Fixed Azure IoT Hub MQTT password validation
- Fixed DMVPN configuration migration issue
- Fixed DMVPN duplicate select options, added suffix to mobile interfaces to use IPv4
- Fixed DMVPN IPsec connection issue
- Fixed DMVPN mobile interface 'Keep settings' migration issue
- Fixed Dynamic DNS long hostname text display issue
- Fixed Events Reporting memory leak issue
- Fixed Events Reporting not triggering after flipping an I/O slider
- Fixed FOTA cron job not starting after factory reset
- Fixed IPsec local firewall option parsing
- Fixed IPsec tunnel creation issue when compatibility mode is used and the tunnel name contains an underscore
- Fixed L2TP, PPTP, SSTP state display in the Status -> Services page
- Fixed NTP pool hostname validation
- Fixed OpenVPN certificate remove with Static key and TLS authentication methods

- Fixed OpenVPN configuration saving issue when using HMAC key authentication
- Fixed OpenVPN custom dev name transformation to correct format
- Fixed OpenVPN device name setting logic when uploading config from file
- Fixed OpenVPN instance status display
- Fixed OpenVPN TAP (bridged) configuration detection
- Fixed Qos configuration saving issue occurring after instance deletion
- Fixed RMS JSON incorrect WAN state and IP information
- Fixed RMS step access issue in the Setup Wizard page
- Fixed SNMP issues after reboot while using a Hotspot
- Fixed SNMP generating MIB files for devices in accordance with to their hardware
- Fixed SNMP traps not working after SNMP is installed from server
- Fixed SSTP client route creation issue
- Fixed UPNP secure mode not turning off issue
- Fixed Wireguard route to endpoint issue
- Fixed manual package installation for queued packages
- Fixed NAT Rules dependency from IPsec web instance
- Returned usleep utility
- Updated Australian and South African NordVPN server IP addresses

# • System

- Fixed LED operation while device is in bootloader state
- Fixed certificate signing issues
- Fixed Telnet, CLI access blocking after max invalid tries
- Fixed FW upgrade with 'Keep settings' while low free space is available
- Fixed backup file duplication issue
- Fixed network device handling in system

### WebUI

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

# RUTX R 00.07.02.7 | 2022.09.12

# • Improvements:

• Improved manual-auto connection mode

- 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

# **RUTX\_R\_00.07.02.6** | 2022.08.24

## • Improvements:

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

#### • Fixes:

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

# <u>RUTX\_R\_00.07.02.5</u> | 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
- o Added auto switch to modem's SMS storage when SIM card storage doesn't exist
- Improved mobile connection status handling
- Added CSP headers Hotspot WebUI landing page
- Optimized CORE distribution for packet handling

#### • Fixes:

- Lixed EEE link advertisment
- 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 proccess less than 10 instances
- $\circ\,$  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
- Fixed POST/GET output state being high after first request

# RUTX\_R\_00.07.02.4 | 2022.07.20

### • Improvements:

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

# • Fixes:

- Fixed CVE-2022-2068 vulnerability
- Disabled autoconnect on stop-network call
- Fixed Hotspot login via landing page issue

• Fixed possible I2C bus lock-up issue when upgrading firmware from 02.xx versions

# **RUTX R 00.07.02.2** | 2022.06.27

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

### • Fixes:

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

# **RUTX R 00.07.02.1** | 2022.06.06

- Improvements:
  - Improved GSM related messages in Troubleshoot logs
- Fixes:
  - Fixed IGMP Proxy menu item not appearing after package installation
  - Fixed default mobile network configuration generation
  - Fixed MODBUS write requests and Mobile Utils option setting

# <u>RUTX\_R\_00.07.02</u> | 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
- o 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
- $\circ\,$  Made generating Wireguard keys possible only while in auto mode
- Added Events Log database to troubleshoot archive
- o 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
- $\circ \ \ Updated \ Speedtest \ server \ list$
- 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)
- o 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)
- $\circ\,$  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 error code 5 for reserved SAMBA user names
- Added Mobile data and SMS limit features for external modem
- Added PPPoE VLAN priority support
- Made VRRP ping section dependent on main instance
- Added 'WAN to LAN' switch

- Fixed CVE-2021-20322, CVE-2021-4197, CVE-2022-1011, CVE-2022-0847 kernel vulnerabilities
- Fixed CVE-2022-28391 busybox vulnerability
- Fixed CVE-2018-16789 shellinabox vulnerability
- Fixed CVE-2021-44543, CVE-2021-44542 privoxy vulnerabilities
- Fixed CVE-2021-43618 GNU Multiple Precision Arithmetic Library vulnerability
- Fixed zlib backport security issue
- Fixed Wireguard firewall zone assignment
- Fixed queued packages disappearing from list after FW upgrade with keep settings
- Fixed error message display for multiple input validation rules
- Fixed incorrect DHCP validation range for start and limit fields
- Removed 'Bring up on boot' option from network interface configuration pages
- Fixed coma-separated DHCP options disappearing after save
- Fixed exclude and listen interfaces
- Fixed 'Use broadcast flag' option saving
- Fixed firewall zone assignment when creating new interfaces
- Fixed OpenVPN 'Netmask' and 'IP address' field validations
- Fixed OpenVPN TAP configuration saving issue
- Fixed OpenVPN switching to TUN mode when uploading a configuration from file
- Fixed dynamic BGP route state display
- Fixed BGP peer enable in edit page
- Fixed issue when no L2TP client instance could be bound to IPsec
- Fixed firewall rule and zone behavior related to config section creation
- Added default value for L2TPv3 netmask, which is now written to config after save
- Fixed passthrough option saving to IPsec file
- Fixed DMVPN issue where instance configuration could not be saved
- Fixed Wireguard peer could not be saved issue
- Fixed NTP client time synchronization after factory reset
- Fixed device time display with selected time zone
- Fixed MODBUS TCP indexation missing bracket issue
- Fixed initial MODBUS TCP request count validation
- Fixed PIN 3/4 direction switching over MODBUS TCP
- Fixed MODBUS data to MQTT socket closing issue when connection fails

- Fixed MODBUS alarm configuration deletion
- Fixed DNP3 master not working after FW upgrade with 'keep settings'
- Fixed DNP outstation not returning error messages
- Added missing SNMP objects: mobile IP, data sent/received today
- Fixed MQTT Publisher 'Remote address' field validation
- Fixed long interface name support for Azure IoT Hub
- Increased maximum Azure IoT Hub 'Connection String' length to 4096 characters
- Fixed missing sent/received data issue
- Fixed URL input field length validation
- Fixed admin login issue after upload of backup from a device with older firmware versions
- Fixed MAC address formatting in Events reporting messages
- Fixed Events reporting DHCP lease message spam, when no new lease is added
- Fixed logging crashing after downloading Troubleshoot file
- Made Wake on LAN visible only on devices with Ethernet ports
- Fixed Traffic log file transfer to FTP server
- Fixed Web Filter service reloading after a host list file is uploaded
- Fixed access denied messages when sending JSON-RPC requests from root user
- Fixed error message display about duplicated intervals in Profile scheduler
- Fixed FW upgrade with 'keep settings' migration issue for Access Control's 'Fail count' and 'Device port' fields
- Corrected OSPF Routing card values, value positions and names
- Fixed global secret instances not being removed when there are no IPsec instances
- Fixed uploaded file remove icon not staying in position on hover
- Fixed Overview card collapse issue that made it unresponsive after too many clicks
- Removed WAN6 interface from the Overview page
- Fixed mobile IPv6 display in Events Reporting status messages
- Fixed Bridge mode when DNS2 is not available
- Fixed PAP/CHAP username and password fields not saving in interface edit window
- Fixed sending email without secure connection for providers that support such an option
- Fixed 'N/A' parameter showing up in SMS Utilities monitoring status message
- Fixed Call Utilities Events Log message for reboot rule
- Fixed SMS command validation for no-authorization option
- Fixed MODBUS SMS alarms 'Enable' option saving
- Fixed running RMS with no SIM card inserted issue
- Fixed firmware available on server version checking issue
- Fixed CVE-2020-15078 openvpn vulnerability
- Fixed storage calculation for packages
- SMS Utilities: enhanced service security
- Fixed firmware deletion after leaving the page
- Fixed setup wizard redirect after LAN IP change
- Fixed various validation bugs, typos, option hints & alignments
- Fixed multiple IPv6 configuration field validations
- Fixed unnecessary SIM switch issue when Multi-APN is configured
- Fixed MODBUS TCP slave modem not starting after switching SIM cards
- Added multiwan support for Wireguard default route
- Fixed wireless signal strength display when no clients are connected
- Fixed loss of connectivity for clients when router is in STA+AP mode
- $\circ$  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 I/O Juggler external modem recognition
- Fixed flash driver reformatting after memory shrink
- Fixed DLNA package installation issue
- Changed Media Directories field to be required
- Fixed SAMBA fields value display

# RUTX R 00.07.01.4 | 2022.02.25

# • Improvements

• Increased Port Forwards rule max name length

#### Fixes

- Added missing bracket to the end of MODBUS messages
- $\circ\,$  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 OpenVPN server configuration with password authentication
- Fixed NTP interval length validation
- Fixed network interface enable after Drag & Drop
- Updated NTP client interval to 24h
- Fixed connection to whitelist carriers
- Fixed Passthrough mode when DHCP is disabled
- Fixed 'Deny data roaming' feature
- Fixed mobile blocking dependency on region
- Disabled Ping To DNS functionality when Bridge/Passthrough mode is enabled

# RUTX R 00.07.01.2 | 2022.01.04

### New features

DFOTA modem upgrade system for Quectel modems

# • Improvements

• Removed L2TP section title prefixes

- Fixed IPSec crashing issue using mobile
- Fixed FW flashing when chip is in unknown state
- Fixed CPU usage percentage display in the Overview page
- Fixed FOTA timeout issue when server does not respond
- Fixed installation of backup packages
- Fixed mobile data limit display after profile change
- Fixed Bridge mode without multi-APN
- Fixed multi mobile interface checking
- Fixed error handling when the modem is not responding

Prolonged autoconnect setting timeout

# RUTX R\_00.07.01 | 2021.11.18

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

### New features

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

## Improvements

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

- Updated iptables to version 1.8.7
- Updated nettle to version 3.6
- Updated libpcap to version 1.9.1 rel3
- Updated elfutils to version 0.180
- Updated cryptodev-linux to version 1.11
- Updated linux-firmware to version 20201118
- Updated util-linux to version 2.36.1
- Updated openwrt-keyring to version 2021-02-20
- Updated mtd to version rel26
- Updated fwtool to version 2019-11-12
- Updated ca-certificates to version 20210119
- Updated wireguard-tools to version 1.0.20210223
- Updated iwinfo to version 2021-04-30
- $\circ \ \ Updated \ ipset \ to \ version \ 7.6$
- Updated gre to version rel12
- Updated wolfssl to version 4.7.0
- Updated ustream-ssl to version 2020-12-10
- Updated uclient to version 2021-05-14
- Updated readline to version 8.1
- Updated mbedtls to version 2.16.11
- $\circ$  Updated libusb to version 1.0.24
- Updated libunwind to version 1.5.0
- Updated libubox to version 2021-05-16
- Updated libnl-tiny to version 2020-08-05
- Updated libnftnl to version 1.1.8
- Updated libiconf-full to version 1.16
- Updated libbsd to version 0.10.0
- Updated gmp to version 6.2.1
- $\circ \ \ Updated \ ulogd \ to \ version \ rel 6$
- Updated sqm-scripts to version 1.5.0
- Updated ntpclient to version rel14
- Updated nmap to version 7.80
- Updated curl to version 7.77.0
- Updated zerotier to version 1.6.5
- Updated xtables-addons to version 3.13
- Updated xl2tpd to version 1.3.16
- Updated stunnel to version 5.59
- Updated strongswan to version 1.0.13
- $\circ$  Updated sstp-client to version 1.0.13
- Updated pptpd to version rel5
- Updated openvpn to version 2.5.3 rel2
- Updated ntpd to version rel3
- Updated net-snmp to version rel2
- Updated mosquitto to version 2.0.11
- Updated miniupnpd to version 2.2.1 rel 3
- Updated etherwake to version rel5
- Updated libzip to version 1.7.3
- Updated libgpg-error to version 1.39
- Updated glib2 to version 2.66.4
- Updated libnetfilter-conntrack to version 1.0.8
- Updated libnetfilter-log to version rel3

- Updated lzo to version rel4
- Updated nghttp2 to version 1.43.0
- Updated openvpn-easy-rsa to version 3.0.8 rel3
- Updated iperf to version rel2
- ∘ Updated iperf3 to version 3.10.1
- $\circ \ \ Updated \ e2fsprogs \ to \ version \ 1.45.6$
- Updated fuse to version 2.9.9
- Updated udprelay to version 2020-02-26
- Updated qmicli to version 1.28.2
- Updated pcre to version 8.45
- Updated libsmpp34 to version 1.14.1
- Updated libiwinfo to version 2.1
- Added netifd library for additional information related to network interfaces
- Updated openssl to version 1.1.1l
- Updated privoxy to version 3.0.32
- Added ACL reload method for sessions
- Added 'Advertisement interval' field to the VRRP configuration window
- Added a PPTP-to-WAN Zone Forwarding rule when default route is enabled on PPTP client
- Added email user group validation for sendind test emails with Events reporting
- Added an event logging feature for Ping Reboot events
- Improved file/section deletion logic: now files are also deleted after deleting a related config section
- Improved package deletion logic
- Added the possibility to configure multiple reboot times in one Reboot Scheduler configuration instance
- Updated 'External system log server' field validation to accept IPv6 addresses
- Added redirect to Overview page after login
- Added WebUI session timeout after user inactivity
- Added placeholder text to dropdown menus
- Improved multi-select design and functionality
- Added Unix timestamp, local ISO time, UTC time to Modbus
- Added info message when selected file cannot be uploaded
- Improved IPsec throughtput
- Added IPSec "Compatibility mode" configuration support
- Made SNMP 'Community name' option editable
- Added the option to delete configurations to the SMS Utilities 'UCI' rule
- Added 'hour', 'week day', 'month day' slelection options to SMS Limit configuration
- o Added Lithuanian and Verizon APNs
- Added modem selection for the 'Send SMS' option in Auto Reboot settings
- $\circ\,$  Added the possibility to get total data usage value without specifying time interval via ubus
- Added return SIM count command
- Added new configuration options to the Failover feature
- Changed Failover page availability from Advanced only both advanced and basic
- Made Failover Interfaces table rows draggable when in 'Load Balancing' mode
- Changed Failover page 'Ratio' fields to a smaller size
- Added the possibility to allow multiple Hotspot users to log in with the same SMS OTP
- Added 'Duplicate passwords are not allowed' error message to Hotspot landing pages
- o Added 'Allow password duplicates' field to the Hotspot configuration page
- Improved wireless frequency option layout

- Added external modem support for the 'Mobile Usage' graph
- Added I/O support to SNMP
- Removed ubus list method due to security reasons
- o Added MODBUS "%I, %T, %S, %r, %n" support to MODBUS Data Sender
- Removed search engine site crawling
- Improved IPSec "Local/Remote source" validation
- ∘ Added Firewall "all" and "custom" protocol options
- Added Backup file size limit of 2 MB
- Improved basic/advanced mode changing
- Improved Wireguard "IP Addresses" field validation
- Added language download support from language selection section
- Added PPTP "Client to client" configuration support
- o Made DDNS "username", "password", "host" fields optional
- Added SSTP "Default route" configuration support
- Added SMS Limit hour, week day and month day support
- Added Passthrough "Leasetime" and "Unit" configuration support
- Added Call Utilities "Active Timeout" configuration support
- Added support for PL2303GC serial to USB chip
- Added bgscan feature to wpa supplicant
- Optimized Wireless device status information requests in all WebUI pages

- Made RMS 'Connect' button disabled when a connection attempt is already in progress
- o Added validation for TLS Clients 'Private network' option
- Fixed the validation range for MTU fields
- Fixed removing firmware image file after leaving the fimware upgrade page
- Fixed network selection list for Traffic Logging added all available LAN networks
- Fixed DHCP Options validation
- Fixed configuration profile date display
- Fixed blank page after invalid URL in login page
- Fixed TR-069 related firewall rule loading
- Fixed remote subnet netmask validation issues for the GRE Tunnel configuration
- Fixed WebUI section toggle
- Fixed package installation modal layout
- Fixed current page values showing up in login page username field
- Fixed the possibility to create section with a name that is already in use in the same config file
- Fixed OpenVPN username and password deletion when deleting configuration instance
- Fixed session closing issue for the user whose password was just changed
- Updated MODBUS credential validation
- Updated MQTT credential validation
- Fixed DNS 'Rebind protection' setting when switch is disabled
- Updated libgcrypt to version 1.9.3 to fix CVE-2021-33560
- Fixed CVE-2021-33624, CVE-2021-29648 vulnerabilities
- Fixed DHCP 'Lease time' and 'Unit' option saving over the Setup Wizard LAN page
- Fixed Reboot Scheduler not removing crontab file after disabling the rule
- Fixed OpenVPN 'Extra options' field validation to allow a space character
- Added table drag and drop functionality to the Firewall's Traffic Rules page
- Fixed DNP3 Outstation crash caused by non-void function returning no value
- Fixed RMS 'Copy' button functionality
- Fixed gsmd deamon crashing after modem restart

- Fixed gsm memory leak
- Fixed WCDMA band names for MEIG modules
- Fixed SMS Gateway loading screen issue when sending an SMS message
- Fixed mobile data database error after upgrading firmware with the 'Keep settings' option
- Fixed rpcd memory leak issue
- Fixed network information gathering
- Fixed 3G LED not being active in 3G mode
- Fixed data limit accuracy issue
- Fixed SIM Switch back to default SIM crash loop when SIM1 is disabled
- Removed unused SIM Switch struct objects
- Fixed incorrect loading after saving Failover configuration
- $\circ\,$  Fixed escaping '#' symbol from hotspot username and password fields
- Returned Interfaces "Port priority" option
- o Patched CVE-2021-40528 vulnerability
- o Patched CVE-2021-40490 vulnerability
- Patched CVE-2020-16120 vulnerability
- Fixed VLAN section creation
- Returned Interfaces "Port priority" option
- Fixed missing Content-Type header to initial WebUI response
- Fixed RIP information parsing in status page
- Fixed OpenVPN IPv6 netmask validation
- Fixed SNMP Trap Settings Host/IP field validation
- Fixed Cumulocity authentication reset
- Fixed Events Reportingg rule saving

# <u>RUTX\_R\_00.07.00</u> | 2021.07.16

## New features

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

## Improvements

- Updated firewall to release 3
- Updated kernel to version 4.14.221
- Updated uhttpd to version 2020-10-01
- $\circ$  Updated xtables-addons to release 9
- Updated mwan to version 2.8.14
- Updated pcre to version 8.44
- Updated curl to version 7.74
- $\circ \ \ Updated \ sqlite \ to \ version \ 3.33$
- Updated ncurses to version 6.2
- Updated OpenSSL to version 1.1.1k
- Added full MODBUS register address expansion specifier for Data to Server
- Added full MODBUS register address legend
- Added Client ID option for the MQTT protocol in Data to Server
- Improved Data to Server sleeping accuracy
- $\circ\,$  Improved Data to Server username validation; now space is allowed
- Added firmware version OID to the SNMP service
- Added IP address family option field to the SNMP page

- Added SNMPv6 section to the SNMP Communities page
- Renamed the 'System -> Users' page to 'System -> System Users'
- Moved password changing option to the 'System -> System Users' page
- o Switched to ar8216 driver
- Added IPsec XAUTH support
- o Improved OpenVPN updown, init scripts to write info about instance in JSON
- Added AES-256-GCM encryption support to OpenVPN
- Added extra configuration parameters to DMVPN
- Added PSK conversion to DMVPN and single PSK types
- Improved Package Manager package installation, deletion and dependencies
- Improved Package Manager download process over FOTA
- Added new Input/Output values manageable over RMS
- Added IPv6 traffic logging
- Made 'Network -> Failover' and 'Network -> Interfaces' page data draggable on multiple browsers
- Added Input/Output Post/Get URL parameter t\_time changing delay and time to seconds or miliseconds
- Added message storage management by config value
- Improved QMI error handling and status tracking
- Turned on modem in preinit for correct power-on sequence
- Added Post/Get feature to turn mobile data on/off
- Added the possibility to use 2gonly/3gonly/4gonly arguments for cellular service command alongside current 2g/3g/lte arguments
- Added "Phone number" and "Message" fields for "Send SMS" option
- ∘ Added "Host to ping from SIM1" and "Host to ping from SIM2" fields
- Added support for multiple USB to Serial adapters
- $\circ\,$  Added option to send SMS warning messages to Hotspot users authenticated with SMS OTP when specified amount of data is used u
- Added option to switch back to primary SIM card after timeout
- Improved I2C communication
- Added peer groups to BGP access list dropdown
- $\circ$  Added TCP MD5 authentication support for BGP

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

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

# RUTX R 00.02.06.1 | 2021.02.10

#### Fixes

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

# RUTX\_R\_00.02.06 | 2020.12.31

### New features

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

# Improvements

- Updated base to OpenWrt 19.07.4
- Added Phone Groups as possible SMS recipients to SMS Post/Get
- Added PSK support for MQTT Broker/Publisher
- Changed Output Scheduler structure
- Removed limitation of one configuration per Input
- Added multiple modem support for TR-069
- Fixed parsing user uploaded custom OpenVPN configuration files containing carriage

#### returns

- Added iptables conntrack flush on WAN Failover if IPsec is enabled
- Optimized package responsible for sending/receiving GRE Tunnel keepalive packets
- Added extra error checking to Package Manager when downloading packages
- Added data usage info for both SIM cards to RMS
- Added logging to syslog when Ping/Wget Reboot "Action" is set to 'None'
- Improved display of configuration tables when a lot of information is shown
- Renamed MODBUS strings to uppercase
- Added redirect to configuration page after a new configuration is created with the 'Add' button
- Added option to create a Configuration Profile from current configuration
- Added data validation to Profiles Scheduler fields
- Replaced the Firewall 'Helpers' page with conntrack helper configuration for each firewall zone
- Increased dynamic list maximum amount of values to 50
- Added the possibility to save email accounts without entering email username and password
- Unified device access password validations
- Expanded DDNS validation for domain input to accept emails
- Added SMS Utilities rule to reset mobile data usage for specified interface
- Improved SMS Utilities VPN status rule to support custom configurations
- Added SMS storage limit check after inserting a SIM card
- Added "Modem" type to modem related events
- Improved SIM count check during init
- Added the possibility to ignore DFS channels when automatic channel selection is performed (for 5 GHz WiFi)
- Removed unsecure WPA-PSK and WPA-EAP encryption support
- Improved Hotspot Landing page address validation to accept a trailing slash
- Removed unnecessary warning message in the Hotspot page
- Disable Wireless device & interface configurations when WiFi device is in 'pending' state
- Removed unused 'Expiration time' option in the Hotspot page
- Moved all USB related services to the 'Services -> USB Tools' page
- $\circ$  Added 'General' page to 'Services -> USB Tools'; the page contains a list of all USB devices and the option to safely unmount the devices
- Added 'passive-interface' and 'default-information' options to the OSPF configuration page
- Added NHRP dynamic route status page
- Split VLAN configuration page into two separate ones: 'Port Based' and 'Interface Based'

- Fixed IPsec Passthrough subnet/ip value parsing to make it dynamic for leftsubnet
- Fixed occasions when error messages overlap buttons
- Fixed I/O state saving after revert back to original state
- Optimized script for downloading Package Manager packages after firmware upgrade
- Fixed bridged interface configuration for L2TPv3
- Removed trailing newlines in returned SNMP strings
- Fixed Events Reporting waiting to send email before rebooting
- Fixed MQTT MODBUS Gateway not working when topics have special characters
- Swapped pin3 and pin4 values in MQTT Publisher
- Added an 'IP4Table' option to advanced interface configuration
- Fixed an issue where User Scripts were being deleted after device reboot

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

# RUTX\_R\_00.02.05.2 | 2020.11.19

### Fixes

Randomized the global rate limiter to mitigate "SAD DNS" attack

# <u>RUTX\_R\_00.02.05.1</u> | 2020.09.30

# New features

- o DLNA media server
- iptables NETMAP extension
- "Flush connections on" option for WAN Failover
- New firmware notifications
- Updated header logo from 'Teltonika' to 'Teltonika | Networks'
- USSD command support
- Time sync via network operator's station
- ∘ SOM OoS
- USB Tools
- USB to Serial adapter support
- Auto format USB storage devices to NTFS
- Storage Memory Expansion
- ∘ 802.11r support
- WiFi Scanner
- Console Port WebUI configuration

Port priority option for Ethernet/SFP

# Improvements

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

- Adjusted Modem FW file validations
- Added network selection option in Traffic logging page
- Reworked Q-in-Q configuration page
- Made ESSID value mandatory
- Added wireless device status display in Wireless Overview page
- Moved Hotspot2.0 to Services menu

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

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

# RUTX\_R\_00.02.04.3 | 2020.07.31

### New features

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

## Improvements

Updated APN database

### Fixes

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

# RUTX\_R\_00.02.04.1 | 2020.07.02

### New features

- 'Mobile Passthrough' mode
- Mobile signal real-time graph
- USB Tools page with "USB to Serial" and "Printer Server" sections
- Mobile data usage charts
- Profile change action to "I/O Juggler"
- Relay control to Call Utilities

- 'Certificates' page for generating and managing TLS certificates
- ∘ 'Drag & Drop' support for Overview page tables
- ∘ 'Speed Test' feature
- AVL I/O support
- JSON formatting option for Data to Server
- 6rd package

# Improvements

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

# • Fixes

- Fixed SMS send function in Hotspot 'SMS OTP' authentication mode
- Fixed Enable/Disable function in Wireless page
- Fixed validation in Wireless interface edit page
- Fixed 'Wireless Scans' page table headers on smaller screens; changed 'Wireless Scans' page action button positioning
- Fixed symlinking tty devices in one place
- Removed incorrect SMS character counter from SMS Utilities page
- Fixed validations and option saving in OSPF page
- Fixed various element positioning bugs on smaller screens
- Fixed switching to advanced mode notification when accessing non existing pages
- Fixed validations in Traffic Logging page
- Fixed showing failover section only for interfaces with failover rules
- Fixed static leases redirect after saving
- Fixed empty dropdown values in 'I/O juggler' and 'Network Shares'
- Fixed interface IP address validation in DDNS page
- Fixed various spelling mistakes
- Fixed broken address option in the 'Troubleshoot' page
- Fixed dropdown select element double clicking issue
- Fixed basic/advanced mode switching with Microsoft Edge browser
- Fixed firmware upgrading bug when LAN interface with a changed name exists
- $\circ$  Fixed redirecting to the 'Interfaces' page when mode is changed from basic to advanced and user is in the 'LAN' or 'WAN' pages
- Fixed validation of custom header in 'Data To Server' page
- Fixed "Type" option error in Failover page
- Updated username and password validations
- Fixed profile change action in 'I/O Juggler'
- Fixed bidirectional GPIO change feature

# **RUTX\_R\_00.02.03.4** | 2020.06.15

### Fixes

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

# **RUTX\_R\_00.02.03.1** | 2020.05.15

### New features

- Initial RUTXR1 firmware release
- Responsive WebUI design
- New Access Control window for managing IP access
- Attack Prevention page under Firewall settings
- New IPv6 options in WAN, LAN and VPN pages
- Hotspot Users Management page
- Progressive Web Application support and extra page caching when device is configured with a valid SSL certificate
- OpenVPN configuration file upload functionality
- Unsaved Changes page
- Bridge mode display in Overview page
- Input inversion buttons
- Dynamic switch port display in side widget
- WiFi traffic logging for RUTX devices that support WiFi
- Input/Output manipulator
- Full unicode SMS support
- IO control and status over SMS
- MQTT Publisher: added support to send I/O values
- Ability to install packages stored in backup file
- IP unblock SMS rule
- New Modbus TCP Slave register fields
- New Modbus Alarm redundancy options
- ∘ NTPD version 4.2.8p14

# • Improvements

- Added HMAC configurations for OpenVPN
- Added AES ciphers support for OpenVPN
- Added MTU and gateway metric to mobile interfaces
- Added DHCP lease range display in the Network → LAN page
- New Hotspot user signup page design and field validation
- Hotspot validation for local user authentication
- Moved wireless device configuration
- Added warning messages when deleting interfaces/configurations
- o Added available FW on server status messages in FW upgrade page
- Added mobile PIN code saving note
- Changed UPnP redirect delete button style
- $\circ$  Changed functionality of reset button in the Firewall  $\to$  Custom Rules page. Now fully resets to default
- Added hints on all value fields about field validation
- Added pin information for iostatus SMS rule
- Removed modem traps if no modem is present
- Updated wireless information in side widget

- Optimized section toggling logic, removing all toggling associated flags required prior optimization
- Standardized section edit page headers in WebUI Services
- Improved the look of error pages and messages
- o Updated Wiki links to wiki.teltonika-networks.com
- o Disabled 'Clear data limit' button for inactive interfaces
- Reordered menu, moved 'Default configuration' to the Backup page, moved 'Diagnostics' to the Troubleshoot page
- Added credentials input fields to Data to Server
- Changed hint of 'Allow guest" in the Network Shares page
- Updated Periodic Reboot service status in the Services page
- Improved hint for incoming calls option
- Changed OpenVPN LZO option to a dropdown with an extra 'none' option
- Removed 'MAC auth' option from Hotspot with LAN interface
- Removed unnecessary 'Status' column and added "No users currently connected" message in the Hotspot Users Management page
- $\circ$  Added suggestion to create a profile if there are no profiles created in the Profiles  $\to$  Scheduler page
- Filtered out unnecessary interfaces ending with 4 6 in firewall page
- Moved SIM switch to separate page and added check interval and retry count options
- $\circ\,$  Changed side widget button color to blue to make it more visible
- Added 'Dynamic List' option limit (20 elements)
- Added info message to Events Reporting & Mobile Utilities rules, if selected recipient or sender is a group or no groups are created yet
- Improved stm32 recv message handling
- Modbus TCP test now allows reading more than 125 coils/inputs
- o Reworked NTP page, separating general options from NTP specific ones
- Fixed grammar errors in Mobile page

- Added validations for Wireless configuration advanced settings fields
- $\circ$  Added name validation in the Firewall  $\to$  Port Forward page, fixed custom protocol value selection and display
- Added validation for GRE 'Remote subnet IP' option
- Added missing Mobile Data limit input validation
- Fixed Schedulers' cells to be of equal width
- Fixed uploading backup from lower firmware version
- Fixed SSTP certificate upload function
- Fixed IPsec 'Aggressive' setting value saving in config file
- Fixed LAN settings static lease name validation
- Fixed issue that sometimes caused failures when redirecting to Mobile interface edit page
- Fixed descriptions in Access Control → Security page
- Fixed mixed up WiFi and SMS values in SMS Utilities Rules
- Fixed HTTP login while HTTPS session is still active
- Fixed real time CPU load in the Overview page
- Fixed advanced static routing display for all routes
- Fixed file upload error messages in backup page
- Fixed 'Select' option for Firefox browser
- Fixed RAM usage display in side widget
- Fixed access to non existing pages

- Fixed saving empty message field in Events Reporting rules
- Fixed I/O socket pinout
- Fixed showing correct APN settings when upgrading with the 'Keep all settings' option
- $\circ\,$  Fixed Events Reporting send test email page display when email contains 2 new lines in a row
- Fixed phrasing and grammatical mistakes in SMS messages tooltip
- Fixed LAN Overview section display
- Fixed early login page load after reboot or backup upload
- Fixed Package Manager notification display
- Fixed SMS rule display for different devices
- Fixed PPTP and L2TP client configuration creation with same name
- Fixed static route removal if corresponding interface is removed
- Fixed Realtime Graphs → Traffic tab display
- Fixed OpenVPN username and password writing to file
- Fixed time zone sync between Setup Wizard & NTP pages
- Fixed WiFi interfaces table style when no interfaces are present
- Fixed DHCP lease range validation
- No longer write anything into Events Log when forcing reboot to prevent device hang-up
- Fixed restore settings when upgrading from Yocto base firmware on TRB1 targets
- Fixed launching stm32 autoflash script at early boot to avoid possible keep settings loss
- Removed certain Events Reporting options on devices that don't have the corresponding functionality
- Fixed recovery from lost connection for MQTT publisher, Modbus MQTT gateway