

# RobustOS Pro Firmware Release Notes

## NOTES

- This document serves as the release notes for the mainline version of RobustOS Pro, primarily recording the new features, optimizations, and fixes for each version. All version release information will be accumulated here, allowing users to refer to the complete product version update history through this document.
- This release note applies to all gateway using **RobustOS Pro 2.x** version.
- The firmware name prefix corresponds to the supported product models:
  - ❖ eg5120: EG5120
  - ❖ eg5100: EG5100, EG5101
  - ❖ lg5100: LG5100
  - ❖ eg5200: EG5200
  - ❖ ev8100: EV8100
  - ❖ eg3110: EG3110
  - ❖ r1520lg: R1520LG

## VERSION V2.4.1

Release Date: December 9, 2025

Previous Version: V2.4.0

## NEW FEATURES

N/A

## ENHANCEMENTS

1. Optimized the startup logic of ModemManager to reduce system resource usage.
2. Optimized the uninstall, urlupdate, and tftpupdate commands by removing the password verification requirement, simplifying the maintenance and update operations of the device.
3. Updated the RCMS APP to V2.3.2:
  - (1) Updated the MQTT version to V1.3.15.
  - (2) Optimized the application monitoring mechanism in the background to improve overall system performance.
4. Updated the E2C\_Broker APP to V2.0.6 (compatible models: R1520LG/LG5100):
  - (1) Optimized the application monitoring mechanism in the background to improve overall system performance.
5. Updated the E2C\_N\_MQTT application to V2.0.2 (compatible models: R1520LG/LG5100):
  - (1) Added support for MQTT publish topics with devEUI wildcards; the system will automatically replace them with the sub-device ID, enabling data isolation and differentiation for sub-devices.
  - (2) Optimized the application monitoring mechanism in the background to improve overall system performance.

## BUGS FIXED

1. Resolved the issue that prevented the NTP Server and NTP Client from operating concurrently.
2. Resolved the problem of firewall zone names becoming ineffective when too long by enforcing a maximum length of 10 characters, ensuring that rules remain valid.
3. Resolved the problem where the black box process would sometimes use excessive CPU resources for extended periods.
4. Resolved rare startup failures caused by router.service timing out.
5. Resolved the problem where the modemd service failed to automatically restart after occasionally exiting abnormally.
6. Resolved a problem in the SmartRoaming Site Survey test results where SINR showed incorrect values and frequency band details were truncated.

## KNOWN BUGS & LIMITATIONS

N/A

## OTHERS

N/A

## VERSION V2.4.0

Release Date: October 9, 2025

Previous Version: V2.3.4

## NEW FEATURES

1. Added a system backup and recovery feature, supporting local backup of configurations and data, as well as disaster recovery.
2. Added a system cloning feature that allows for the quick deployment of complete device configurations to other devices or performing a local full recovery.
3. Added support for customizable WEB and SSH session timeout settings, allowing users to adjust the idle disconnection time according to their needs.
4. Added a global DNS service address configuration feature, enabling unified specification of DNS resolution addresses across all WAN links (WWAN/WAN/WLAN).
5. Added an adaptive interface language feature that automatically switches between Chinese and English display based on the browser language settings.
6. Added support for R1520LG and EG3110.
7. Added support for the WireGuard VPN protocol.

## ENHANCEMENTS

1. Added support for SmartRoaming V3, which includes mobile network survey capabilities.
2. Added automatic redirection of WEB management traffic from HTTP to HTTPS, enforcing encrypted connections.
3. Added support for the iptables firewall with the NetMap module, enabling efficient, bidirectional IP subnet address block mapping.
4. Added support for APN polling feature, allowing automatic connection attempts across multiple APNs to enhance network registration success rates.
5. Added WiFi Client surrounding network scanning and specified BSSID connection feature.
6. Added support for Chinese names for Wi-Fi SSIDs, allowing the use of Chinese characters to name wireless networks.

7. Added DNS proxy feature to dynamically synchronize the host DNS configuration to the virtual environment, ensuring real-time resolution consistency within virtualized applications.
8. Added support for OpenVPN with GCM encryption algorithm and automatic switching between primary and backup servers.
9. Added support for GRE VPN TAP mode, allowing custom MTU value configuration.
10. Added backup, import, and export feature for ChirpStack configurations on R1520LG/LG5100.
11. Added AutoQuit feature for UDP packet forwarders on R1520LG/LG5100.
12. Added support for LoRa private mode on R1520LG/LG5100, enabling customized proprietary network communication.
13. Added support for Syslog backup servers, allowing data to be sent to two log servers simultaneously.
14. Added Web filtering feature, allowing control over user access based on domain names.
15. Added a forced 32-bit subnet mask feature for WWAN interfaces (supported only on EC25/EG25/RM520N modules).
16. Added the DO Scheduler feature, allowing users to create custom scheduled tasks for managing Digital Output (DO) states.
17. Optimized event information synchronization mechanism to ensure key events are recorded in the system log in real time.
18. Optimized the dial-up backoff mechanism to reduce invalid dial-up attempts and lower network pressure.
19. Optimized the ChirpStack service restart mechanism, adding support for HTTPS encrypted access.
20. Optimized account password policy by adjusting special character requirements and improving verification rules to enhance account security.
21. Optimized the SSH login security mechanism by requiring a mandatory password change for the admin account upon first login.
22. Optimized the resource graph feature by reducing system overhead through a dynamic loading mechanism, effectively improving page response speed.
23. Optimized the PING detection tool to support specifying the source IP address.
24. Optimized the hardware reset logic for the RST button, allowing a long press during power-up to trigger factory reset.
25. Optimized GPS feature, enabling GPS positioning on cellular modules without a SIM card (under specific WAN settings).
26. Optimized certain CLI command sets (select/status/show/uninstall/uploadconfig).
27. Optimized NTP service feature with support for displaying UTC time.
28. Optimized the certificate verification mechanism during application installation.
29. Removed service management feature, allowing automatic coexistence with third-party applications without manual configuration.
30. Updated the Speedtest server list data source.
31. Updated the WiFi drivers for EG5100, EV8100, and EG5120 to version 16.92.21.p149.2.
32. Updated the built-in APN database to enhance network compatibility.
33. Updated the RCMS APP to version V2.3.1:
  - (1) Added support for MQTT Test feature.
  - (2) Added an automatic retrieval feature for HTTPS port configuration, supporting dynamic recognition of web server port settings.
  - (3) Optimized the message retransmission mechanism to improve communication reliability.
  - (4) Fixed timeout issues during the zero-configuration template upgrade process to ensure reliable bulk

deployment.

- (5) Fixed issues with the remote PING detection feature on the RCMS platform, fixing abnormal app restarts during detection.
- 34. Updated the E2C\_N\_MQTT application to version V2.0.1 (compatible with models: R1520LG/LG5100):
  - (1) Added feature to disable server certificate verification, supporting flexible security policy configuration for specific scenarios.
- 35. Updated the Voice Call application to version V1.3.1 (compatible with model: EV8100):
  - (1) Fixed the silent issue during VoIP calls when connecting to specific SIP servers.
  - (2) Fixed the issue where the APP Center could not display the Voice Call application.

## BUGS FIXED

- 1. Fixed the issue where MAC-IP binding rules became ineffective after plugging and unplugging the network cable.
- 2. Fixed compatibility issues with the recognition of certain models of USB disk.
- 3. Fixed a compatibility issue on WiFi AP where WPA2-only terminals were unable to connect in WPA2/WPA3 mixed mode.
- 4. Fixed the issue of abnormal access to the ChirpStack service after the device was restored to default configuration.
- 5. Fixed an issue causing PPTP VPN connection failure on EG5120/EG5200 devices due to a specific negotiation conflict during the setup phase.
- 6. Fixed the abnormal clearing of WAN link traffic statistics counters.
- 7. Fixed a certificate verification issue caused by an unexpected power outage immediately following certificate import, improving system robustness.

## KNOWN BUGS & LIMITATIONS

N/A

## OTHERS

- 1. The LG5100 supports upgrading from version V2.3.x to V2.4.0, but does not support cross-version upgrades from other versions.

## VERSION V2.3.4

Release Date: June 4, 2025

Previous Version: V2.3.3

## NEW FEATURES

1. Added compliance with RED DA (EN 18031) standard.
  - (1) Added mandatory admin password change on first login.
  - (2) Added cybersecurity version display on homepage.
  - (3) Added ICMP forwarding limiting in firewall.
  - (4) Added MAC-IP binding feature.
  - (5) Optimized password policy for user accounts.
  - (6) Optimized encryption algorithms for configuration import/export.
  - (7) Fixed kernel vulnerability (CVE-2024-1086).

## ENHANCEMENTS

1. Added firmware downgrade risk notification feature.

## BUGS FIXED

1. Resolved the rare issue of devices losing MAC addresses.
2. Fixed the problem of system access failure after LXDE desktop environment is installed.

## KNOWN BUGS & LIMITATIONS

N/A

## OTHERS

1. To upgrade the Chirpstack version built into LG5100, please use USB to flash the firmware.  
**Note: When flashing the firmware via USB, all user data on the device will be cleared.**
2. To enable the speed test function, please install the speedtest-cli package.
3. After the version update, the configuration of LG5100 Packet Forwarder will be reset.

## VERSION V2.3.3

Release Date: March 11, 2025

Previous Version: V2.3.2

## NEW FEATURES

N/A

## ENHANCEMENTS

1. Optimized the mechanism for saving the current configuration as the default configuration.

## BUGS FIXED

1. Fixed the problem of high CPU usage caused by NTP update failures when the device is not connected to the network.
2. Fixed the problem of the EG5200 failing to restore factory settings using the RST button.

## KNOWN BUGS & LIMITATIONS

N/A

## OTHERS

1. To upgrade the Chirpstack version built into LG5100, please use USB to flash the firmware.

**Note: When flashing the firmware via USB, all user data on the device will be cleared.**

2. To enable the speed test function, please install the speedtest-cli package.
3. After the version update, the configuration of LG5100 Packet Forwarder will be reset.

## VERSION V2.3.2

Release Date: January 24, 2025

Previous Version: V2.3.0

## NEW FEATURES

N/A

## ENHANCEMENTS

1. Enhanced the security protection capability of WEB Server.
2. Enhanced the security protection capability of SSH.
3. Optimized the service restart mechanism of application configuration.
4. Optimized the mounting logic of USB disk.
5. Optimized the CPU usage of Modem Manager.
6. Optimized Nginx configuration to support the expansion of third-party services.

## BUGS FIXED

1. Fixed the problem of system certificate upload failure.
2. Fixed the problem of disabling Ethernet port failure.
3. Fixed the problem of EC25-J failing to obtain phone number.
4. Fixed the problem of SNMP not working properly.
5. Fixed the problem of some CLI commands not working properly.
6. Fixed the problem of some event features not working properly.
7. Fixed the problem of GPS not being able to automatically restart after abnormal exit.
8. Fixed the problem of EG5101 serial port type information display error.
9. Fixed the problem of the connected device being unable to access the Internet when IPsecVPN remote subnet is configured to 0.0.0.0/0.
10. Fixed the problem of abnormal SMS execution status cellular command echo.

## KNOWN BUGS & LIMITATIONS

N/A

## OTHERS

1. To upgrade the Chirpstack version built into LG5100, please use USB to flash the firmware.



**Note:** When flashing the firmware via USB, all user data on the device will be cleared.

2. To enable the speed test function, please install the speedtest-cli package.
3. After the version update, the configuration of LG5100 Packet Forwarder will be reset.

## VERSION V2.3.0

Release Date: September 30, 2024

Previous Version: V2.2.2

## NEW FEATURES

1. Added support for SmartRoamingV2.
2. Added support for EG5200, EV8100, EG5101.
3. Added support for DFOTA function of Quectel module.
4. Added support for importing custom APN list.
5. Added support for limiting the number of SMS sent by SIM card.
6. Added support for configuring WWAN MTU.
7. Added support for manually specifying cellular network operator.

## ENHANCEMENTS

1. Added support for enabling or disabling the cellular IMS function.
2. Added support for custom WEB tags.
3. Added support for configuring the built-in LNS of LG5100 through the WEB interface.
4. Added support for specifying a speed test server.
5. Added support for WPA3 in Wi-Fi AP mode.
6. Added support for WEP and connection hidden SSID in WiFi client mode.
7. Added support for assigning static IP addresses to end devices.
8. Added support for SNAT rules in firewall Port Forwards.
9. Added support for input port range in firewall Port Forwards.
10. Added support for configuring the same source IP address for multiple rules in firewall Port Forwards.
11. Optimized the module restart mechanism.
12. Optimized the login security function.
13. Optimized the configuration file download function.
14. Optimized the Sudo account management function.
15. Optimized the control of USR LED.
16. Optimized the Network Manager log.
17. Optimized the configuration interaction logic of LG5100 Packet Forwarder.
18. Updated the name of DO status.
19. Updated APN list.
20. Updated the built-in Chirpstack version of LG5100 to V4.

## BUGS FIXED

1. Fixed the problem that some CLI commands cannot be used normally.

1. Fixed the problem that the Basic Station certificate cannot be deleted on the LG5100 Web page.

## KNOWN BUGS & LIMITATIONS

N/A

## OTHERS

1. To upgrade the Chirpstack version built into LG5100, please use USB to flash the firmware.

**Note: When flashing the firmware via USB, all user data on the device will be cleared.**

2. To enable the speed test function, please install the speedtest-cli package.
3. After the version update, the configuration of LG5100 Packet Forwarder will be reset.

## VERSION V2.2.2

Release Date: May. 29, 2024

Previous Version: V2.2.1

## NEW FEATURES

N/A

## ENHANCEMENTS

21. Optimized the roaming status display of SRM821 module.

## BUGS FIXED

N/A

## KNOWN BUGS & LIMITATIONS

N/A

## OTHERS

This version is only for EG5120.

## **VERSION V2.2.1**

Release Date: May. 16, 2024

Previous Version: V2.2.0

## **NEW FEATURES**

1. EG5120 added support for SRM821 module.

## **ENHANCEMENTS**

22. Added support for LAN DHCP static lease feature.
23. Optimized product model verification rules.

## **BUGS FIXED**

1. Fixed the problem of SIM card status display on Dashboard.

## **KNOWN BUGS & LIMITATIONS**

N/A

## **OTHERS**

This version is only for EG5120.

## VERSION V2.2.0

Release Date: Feb. 23, 2024

Previous Version: V2.1.1.1

## NEW FEATURES

2. Added support for SFTP.
3. Added support for ML620 module.
4. Added support for BG95 module.
5. Added support for Robustel software repository (RCMS).

## ENHANCEMENTS

24. Added support for displaying 5G status information.
25. Added support for OpenVPN Auto mode.
26. Added support for displaying currently logged in account information.
27. Added support for opening or closing network ports individually.
28. Added support for switching to another partition to start after Uboot fails to load after startup.
29. Added support for automatic disconnection of serial port TCP connection when timeout.
30. Added support for WLAN, WAN excessive traffic events, and daily traffic events.
31. Added support for ethernet port Up/Down events.
32. Added support for Verizon and ATT certification related functions.
33. Optimized static routing and policy routing to support the configuration of inactive link interface.
34. Optimized web login. Logging into ROS and ROS PRO does not require clearing browser cache.
35. Optimized EG5100 dashboard page refresh speed.
36. Optimized the display of Debug page refresh display.
37. Updated WiFi driver to improve WiFi connection stability.
38. Dashboard's CPU & RAM supports hyperlinking to resource graphs.
39. Firewall Port Forwards adds support for configuring SNAT rules.

## BUGS FIXED

1. Fixed User LED display problem. Select PPTP and the User LED will still be on after establishing the L2TP link;
2. Fixed the UI display problem: click the link 'It is strongly recommended to change the default password' and the redirected Super User page will display that both Sudo User table and Super User table are selected.
3. Fixed the problem of missing status field reporting in Packet Forwarder of LG5100.

## KNOWN BUGS & LIMITATIONS

N/A

## COMPATIBLE MODULES

RM520N, EG25, EC25,BG95,ML620

## OTHERS

1. To update the WiFi driver, you need to update the Linux Image file.

## **VERSION V2.1.1.1**

Release Date: Aug. 03, 2023

Previous Version: V2.1.0

## **NEW FEATURES**

7. Added support for setting custom prefixes parameters for GPS.
8. Added support for traffic statistics.
9. Added the function of enabling automatic switchback of the module and setting the switchback time.
10. EG5120 added support for cellular network type settings.

## **ENHANCEMENTS**

1. The default working mode of Wi-Fi is changed to AP mode.
2. The cellular module supports turning on or off the IPV6 network.
3. Added cellular CA and ENDC status on the EG5120 Dashboard page.

## **BUGS FIXED**

1. Fixed the issue that the SIM traffic graph was displayed incorrectly when the WAN link Clear button was clicked.

## **KNOWN BUGS & LIMITATIONS**

N/A

## **OTHERS**

N/A



## **VERSION V2.1.1**

Release Date: Jun. 09, 2023

Previous Version: V2.1.0

## **NEW FEATURES**

N/A

## **ENHANCEMENTS**

N/A

## **BUGS FIXED**

1. Fixed issue that Cert Manager page of the Packet Forwarder function page is not displayed.

## **KNOWN BUGS & LIMITATIONS**

N/A

## **OTHERS**

N/A