

# Kona release notes

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## Kona LoRa gateway release history

**Version: 7.1.12.1**

Release type: Release Candidate Date: 2025-01-23

Tektelic-provided component versions:

Linux kernel	5.10.223
Health monitor	0.26.2-0.8.3-0.33.2
SNMP agent	1.23.0
Conn mgr common	0.17.2.4.6
Network monitor	0.34.1
NS switcher	0.37
LoRa HAL	5.4.1.3
Packet forwarder	6.3.2.2
Region config tool	0.16
Firewall setup tool	1.3.1
BSP upgrade tool	1.12.7
Backup tool	1.7.2
FPGA access tool	1.1.0
Tektelic bridge	1.11.7
TCS agent	1.11.7
BSTN bridge	1.11.7
KONA Link	1.0.3

Changes compared to version 7.1.9:

- [KGW-3212] Fix RCU stalls seen when restarting Activity LRR.
- [KGW-3224] Update Tx LUT on KONA Enterprise and Photon Gen2.
- [KGW-3278] Outdated strongSwan plugins not removed upon upgrade to 7.1.x

## Version: 7.1.9

Release type: Hotfix

Date: 2024-11-27

Tektelic-provided component versions:

Linux kernel	5.10.223
Health monitor	0.26.0-0.8.2-0.33.0
SNMP agent	1.23.0
Conn mgr common	0.17.2.4.6
Network monitor	0.34.1
NS switcher	0.37
LoRa HAL	5.4.1.3
Packet forwarder	6.3.2.2
Region config tool	0.16
Firewall setup tool	1.3.1
BSP upgrade tool	1.12.6
Backup tool	1.7.2
FPGA access tool	1.1.0
Tektelic bridge	1.11.7
TCS agent	1.11.7
BSTN bridge	1.11.7
KONA Link	1.0.3

Bugfixes compared to version 7.1.5.1:

- [KGW-2547] Improve data plane restart logic in TGB.
- [KGW-2707] Packet forwarder unable to send uplinks to reserved port numbers.
- [KGW-2758] Fix multi antenna support in the Packet Forwarder and TGB
- [KGW-2797] Support Semtech V1 and V2 protocols on the gateway
- [KGW-2882] Fix network failover in TGB.
- [KGW-2888] SSH banner doesn't display correct BSP version after upgrade.
- [KGW-2927] Packet Forwarder uplink message has `tmms` value in seconds instead of milliseconds.
- [KGW-3122] Backport TGB and BSTN from 1.12.2-r0.
- [KGW-3123] Banner version not updated after upgrade.
- [KGW-3132] Kernel Panic when upgrading to BSP 7.1.5.1 on (older) Mega Gateways.
- [KGW-3154] In-service download does not work when signature verification is enabled.
- [KGW-3156] Package group "solar" not upgraded.

New features compared to version 7.1.5.1:

- [KGW-2850] Support for Enterprise/Photon Gen 2 hardware.

## Version: 7.1.5.1

Release type: Hotfix

Date: 2024-09-13

Tektelic-provided component versions:

Linux kernel	5.10.190
Health monitor	0.26.0-0.8.0-0.33.0
SNMP agent	1.23.0
Conn mgr common	0.17.2.4.6
Network monitor	0.34.1
NS switcher	0.37
LoRa HAL	5.4.0
Packet forwarder	6.3.1
Region config tool	0.15
Firewall setup tool	1.3.1
BSP upgrade tool	1.12.5
Backup tool	1.7.2
FPGA access tool	1.1.0
Tektelic bridge	1.11.4
TCS agent	1.11.4
BSTN bridge	1.11.4
KONA Link	1.0.3

Changes compared to version 7.1.3:

- [KGW-2892] Upgrade issue caused by the Modem On Micro Gen 2.1 Quectel.
- [KGW-3007] Set Sierra modem timeout for reset to 10 minutes.
- [KGW-3012] BSP upgrade to 7.2.0 from 7.1.3 Failed.
- [KGW-3035] Upgrade Failed from BSP 7.1.4 -> BSP 7.2.0 via Command Line on Macro Gen 1.5.
- [KGW-3038] BSP Upgrade gets stuck from 2.5.1+Admin+AWS Tunneling to BSP 7.1.1 to 7.1.4.
- [KGW-3058] Attempting to upgrade BSP 7.1.4 fails with multiple kernel packages found.
- [KGW-3060] amx3-cm3 not installed during upgrade.
- [KGW-3061] tektelic-add-users not installed during upgrade.
- [KGW-3065] Upgrade cannot be started from KONA Link.

**Version: 7.1.5**

Release type: Discarded

Date: 2024-09-09

**Version: 7.1.4**

Release type: Discarded

Date: 2024-08-15



### Version: 7.1.3

Release type: Hotfix

Date: 2024-07-22

Tektelic-provided component versions:

Linux kernel	5.10.190
Health monitor	0.26.0-0.8.0-0.33.0
SNMP agent	1.23.0
Conn mgr common	0.17.2.4.5
Network monitor	0.34.1
NS switcher	0.37
LoRa HAL	5.4.0
Packet forwarder	6.3.1
Region config tool	0.15
Firewall setup tool	1.3.1
BSP upgrade tool	1.12.3
Backup tool	1.7.2
FPGA access tool	1.1.0
Tektelic bridge	1.11.4
TCS agent	1.11.4
BSTN bridge	1.11.4
KONA Link	1.0.2

Bugfixes compared to version 7.1.2:

- [KGW-2759] Certificate/key mismatch for webserver prevents startup.
- [KGW-2893] KONA Link - Homepage with custom styling not properly loading.
- [KGW-2897] Network Monitor was not updated during a successful upgrade to 7.0.10.
- [KGW-2927] Packet Forwarder uplink message has `tmms` value in seconds instead of milliseconds.
- [KGW-2928] BSTN token-based authentication leaks file handles.
- [KGW-2933] Bootloader cannot mount rootfs with large uncommitted journal.
- [KGW-2939] Disable UDP uplink processing when LNS Data connection terminates.
- [KGW-2942] Add monitoring for the BSTN bridge.
- [KGW-2962] KONA Link - Lighttpd fails to start after upgrade on Enterprise Gen1.
- [KGW-2967] upgrade fails from 7.0.10 to 7.1.2 - cannot remove customer specific package group.
- [KGW-2969] Frequent disconnections on Sierra modem when modem goes into "searching" state.
- [KGW-2979] Upgrade to 7.1.x fails when AWS secure tunneling proxy is installed.

## Version: 7.1.2

Release type: Release Candidate

Date: 2024-06-07

Tektelic-provided component versions:

Linux kernel	5.10.190
Health monitor	0.26.0-0.8.0-0.33.0
SNMP agent	1.23.0
Conn mgr common	0.17.2.4.3
Network monitor	0.34.1
NS switcher	0.37
LoRa HAL	5.4.0
Packet forwarder	6.3.0
Region config tool	0.15
Firewall setup tool	1.3.1
BSP upgrade tool	1.12.3
Backup tool	1.7.2
FPGA access tool	1.1.0
Tektelic bridge	1.11.2
TCS agent	1.11.2
BSTN bridge	1.11.2
KONA Link	1.0.2

Bugfixes compared to version 7.1.1:

- [KGW-2855] Mega Gen.1.5 - Upgrade failed from 5.0.4 to 7.0.9 to 7.1.1.
- [KGW-2869] BSTN bridge not properly establishing WS reconnection.
- [KGW-2880] TGB publishing message to NS/OAM with non-ASCII characters for availableUpdates.

**Version: 7.1.1**

Release type: Release Candidate

Date: 2024-05-13

Tektelic-provided component versions:

Linux kernel	5.10.190
Health monitor	0.26.0-0.8.0-0.33.0
SNMP agent	1.22.0
Conn mgr common	0.17.2.4.3
Network monitor	0.34.1
NS switcher	0.37
LoRa HAL	5.4.0
Packet forwarder	6.3.0
Region config tool	0.15
Firewall setup tool	1.3.1
BSP upgrade tool	1.12.2
Backup tool	1.7.2
FPGA access tool	1.1.0
Tektelic bridge	1.11.1
TCS agent	1.11.1
BSTN bridge	1.11.1
KONA Link	1.0.2

Bugfixes compared to version 7.0.12:

- [KGW-1383] Support microsecond precision in packet forwarder uplinks for GPS timestamps.
- [KGW-1736] Web Server - "Hide" and "Show" password option for "Change Password" tab on index page.
- [KGW-1974] LoRaWAN WebSocket connection does not verify certificates.
- [KGW-1987] Web Server - Error 404 page displayed when Setting Static and DHCP IP.
- [KGW-2089] The progress bar is not being displayed properly in the `UpgradeFirmware.py` web server utility when an upgrade is initiated.
- [KGW-2150] KONA Link - 0.7.2 does not accept port specification in feed URL.
- [KGW-2199] UTC timestamps should always be included in the Uplink messages even if Gateway loses GPS fix.
- [KGW-2317] KONA Link - Form token does not print to HTML sometimes.
- [KGW-2375] Lua Kona Link - Not able to Login upon valid default credentials.
- [KGW-2376] Lua Kona Link - Copyright Kona Link version at footer doesn't display correct version.
- [KGW-2377] Lua Kona Link - clicking 'Download CA Certificate' shows 404 error.
- [KGW-2380] Lua Kona Link- `upgradeFirmware.lua` Upgrade is not performed..
- [KGW-2381] Lua Kona Link- Feed URL page (Submit Changes Button) refresh the page to the "BSP Upgrade" option instead of "FEED URL".
- [KGW-2382] lua Kona link - BSTN PAGE is not filtering the files that upload to the GW.
- [KGW-2389] Lua Kona Link: Feed URL entry field has a different filter from before.
- [KGW-2391] Lua Kona Link: Feed URL It is not possible to delete more than 3 URLs at the same time..
- [KGW-2393] Lua Kona Link - GW ID info on home page is not printed consistently.
- [KGW-2394] Lua Kona Link - Upon any action in all the settings page, In-Progress message or Status message is not present.
- [KGW-2405] NM configuration request via the SNMP Agent results in incorrect configuration file content.
- [KGW-2406] Improve gateway BSTN log to inform the type of authentication being used.
- [KGW-2414] Kona Link: Unable to Log Out After Upgrade.
- [KGW-2430] Parallel Bridge restarts leading to "Assertion Failure".
- [KGW-2447] Fix beacon DL power to transmit at 27 dBm.

- [KGW-2457] On default NM configuration file, upon request, SNMP creates two fields of Preferred and Fallback at the end of NM Conf file.
- [KGW-2473] Cron prints error about `chdir` to `/var/www`.
- [KGW-2478] KONA Link - Account for SNMP timeout on upgrade firmware page.
- [KGW-2480] Patch strongSwan vulnerability CVE-2023-41913.
- [KGW-2486] If AWS IoT core replies with too frequency API calls, the `cups.uri` becomes a server response message.
- [KGW-2524] BSTN: CUPS and LNS CRC mismatch between the gateway and AWS server.
- [KGW-2541] Race condition between NTP and ping test causing premature backhaul counter exhaustion.
- [KGW-2625] KONA Link - UI doesn't prevent multiple package installations in wizards.
- [KGW-2640] SIM slot not being detected even though it is present.
- [KGW-2651] Folder `/etc/lighttpd` has world write permission.
- [KGW-2675] SIM PIN configuration issue when switching from longer PIN to shorter PIN.
- [KGW-2749] BSTN halts after assertion failure when there is no backhaul and does not restart after.

New features compared to version 7.0.12:

- [KGW-444] Support WireGuard VPN.
- [KGW-1331] Implement incremental backoff for BSTN connection.
- [KGW-1335] Basic Station to support `dnsched` message.
- [KGW-1668] Web Server- Reduce load time of cellular settings.
- [KGW-1850] Implement charge controller logging for OAM.
- [KGW-1971] Web Server - Behaviour of pressing Enter on login page is not intuitive.
- [KGW-1989] Support TLSv1.3 for Websockets connection.
- [KGW-2229] Implement remote battery gauge configuration update proof of concept on solar gateway.
- [KGW-2304] KONA Link - Implement shutdown gateway feature.
- [KGW-2357] KONA Link - Add configure IPsec page.
- [KGW-2364] KONA Link - Add configure OpenVPN page.
- [KGW-2365] KONA Link - Add basics station configuration wizard.
- [KGW-2366] KONA Link - Add generic UDP configuration wizard.
- [KGW-2368] KONA Link - Implement network sharing.
- [KGW-2412] AWS Zero touch Provisioning: Support multi-level CUPS servers.
- [KGW-2416] Disable TLS1.0 and TLS1.1 in TGB.
- [KGW-2433] KONA Link - Add Chirpstack configuration wizard.
- [KGW-2493] KONA Link - Fix UI for better usability.
- [KGW-2514] KONA Link: Display headings on individual web pages.
- [KGW-2515] KONA Link: Change "shutdown" to "shut down".
- [KGW-2516] KONA Link: Change "Reset SNMP password" to "Change SNMP password".
- [KGW-2558] Extract MBN information from entire MBN list instead of querying modem with a particular MBN for each carrier.
- [KGW-2577] Provide old version of `libcrypt` in Yocto Kirkstone BSP.
- [KGW-2622] KONA Link - Show reboot notification after Chirpstack and Generic UDP Wizards.
- [KGW-2630] CM will connect only to 1st APN index for AT&T.
- [KGW-2631] CM should backoff for 8 minutes after iterating through all APNs in the list and before attempting to iterate through again.
- [KGW-2638] Increase gateway reset timeout to 23 minutes as a part of porting certification changes.
- [KGW-2673] Add support for SquashFS on KONA gateways.
- [KGW-2694] Provide package to enable MBN autoselect.

**Version: 7.0.13**

Release type: Discarded

Date: 2024-05-06

**Version: 7.0.12**

Release type: Hotfix

Date: 2024-03-25

Tektelic-provided component versions:

Linux kernel	5.10.190
Health monitor	0.26.0-0.8.0-0.33.0
SNMP agent	1.20.0
Conn mgr common	0.17.2
Network monitor	0.34
NS switcher	0.37
LoRa HAL	5.3.2
Packet forwarder	6.2.0
Region config tool	0.15
Firewall setup tool	1.3.1
BSP upgrade tool	1.12.2
Backup tool	1.7.2
FPGA access tool	1.1.0
Tektelic bridge	1.10.0
TCS agent	1.10.0
BSTN bridge	1.10.0
KONA Link	0.7.5

Changes compared to version 7.0.10:

- [KGW-2717] Python KONA Link does not support APN Password that is less than 3 characters long.
- Updated region configuration tool version to ensure upgradability. No functional changes since previous release.

**Version: 7.0.11**

Release type: SKIPPED

Date: 2024-03-20

**Version: 7.0.10**

Release type: Hotfix

Date: 2024-02-22

Tektelic-provided component versions:

Linux kernel	5.10.190
Health monitor	0.26.0-0.8.0-0.33.0
SNMP agent	1.20.0
Conn mgr common	0.17.2
Network monitor	0.34
NS switcher	0.37
LoRa HAL	5.3.2
Packet forwarder	6.2.0
Region config tool	0.13
Firewall setup tool	1.3.1
BSP upgrade tool	1.12.2
Backup tool	1.7.2
FPGA access tool	1.1.0
Tektelic bridge	1.10.0
TCS agent	1.10.0
BSTN bridge	1.10.0
KONA Link	0.7.4

Changes compared to version 7.0.9:

- SIM slot not being detected even though it is present.



## Version: 7.0.9

Release type: Official

Date: 2023-12-19

Tektelic-provided component versions:

Linux kernel	5.10.190
Health monitor	0.26.0-0.8.0-0.33.0
SNMP agent	1.20.0
Conn mgr common	0.17
Network monitor	0.34
NS switcher	0.37
LoRa HAL	5.3.2
Packet forwarder	6.2.0
Region config tool	0.13
Firewall setup tool	1.3.1
BSP upgrade tool	1.12.2
Backup tool	1.7.2
FPGA access tool	1.1.0
Tektelic bridge	1.10.0
TCS agent	1.10.0
BSTN bridge	1.10.0
KONA Link	0.7.4

**NB!** This release is a combined build that supports all current Tektelic Kona gateway platforms, specifically:

- Kona Micro (Gen1, Gen1-PoE, Gen2, Gen2.1)
- Kona Enterprise (Gen1, Gen1.5, Gen1.6)
- Kona Photon (Gen1.5, Gen1.6)
- Kona Macro (Gen1, Gen1.5, Gen1.6)
- Kona Mega (Gen1, Gen1.5)

**NB!** The version number has been updated to ensure an increment from any previous release. Therefore, for some platforms, it may appear that a major version number has been skipped. This is intentional.

**NB!** The earliest release versions that support direct upgrades to this version are:

- Micro v4.0.2
- Micro PoE v2.5.1
- Enterprise/Photon v2.1.2
- Macro v5.1.3
- Mega v5.0.2

If your board is running an older release, you may be required to **upgrade to an intermediate release to avoid rendering your system unbootable**.

**NB!** This release is a direct upgrade for the following BSPs:

- Micro v5.1.x
- Enterprise/Photon v3.1.x
- Macro v6.1.x
- Mega v6.1.x

**NB!** Summary of significant changes:

- New `libc` library version 2.35 (part of the SDK update).

- New OpenSSL library version 3.0.x (part of SDK update).
- Python version 2 has been deprecated and removed from the gateway (part of the SDK update).
- Support for filtering LoRa packets in Tektelic Gateway Bridge and in Basics Station.
- “Tektelic MQTT bridge” package renamed to “Tektelic Gateway Bridge” (or “TGB”).
- Default host key algorithm has been changed from RSA 2048 bit to ED25519 for SSH connections.
- DHCP lease is not released on reboot (the gateway is more likely to keep previous IP address after power cycle).
- Added support for geolocation on Macro Gen1.5 and Gen1.6 systems.

New features compared to previous version:

- [KGW-365] Update Tektelic Yocto SDK to Kirkstone.
- [KGW-793] Support ability to turn on/off endpoints in GW bridge through OAM requests.
- [KGW-1336] Basic Station to support NetID and JoinEUI filtering (as communicated via `router_config` message).
- [KGW-1348] Add an input for setting/reading the no backhaul counter value in KONA Link.
- [KGW-1583] Send an event from GW to the NS when power source changes.
- [KGW-1597] Support GPIO watchdog for Enterprise Gen1.6.
- [KGW-1856] Consolidate gateway releases into one bundle.
- [KGW-1901] Change AD9361 LNA gain setting for Mega Gen1.5.
- [KGW-1932] Add new status messages on the upgrade utility when download or upgrade is scheduled.
- [KGW-1990] Change host key algorithm in Dropbear to ED25519.
- [KGW-2126] `safe_reset` should not release the DHCP address.
- [KGW-2131] Implement LoRa filtering based on the NS-GW protocol.
- [KGW-2132] Incorporate geolocation-enabled FPGA binaries for Macro Gen1.5 and Gen1.6 in the release.
- [KGW-2215] Implement OMA-DM Script support for Quectel.
- [KGW-2218] Implement common bootloader for all platforms
- [KGW-2236] Implement TGB support for the LoRa filtering based on the NS-GW protocol.
- [KGW-2237] Implement BSTN Bridge support for the LoRa filtering based on the NS-GW protocol.
- [KGW-2238] Implement HAL support for the LoRa filtering based on the NS-GW protocol.
- [KGW-2305] Update default OAM address in TGB config.
- [KGW-2334] Implement restricting “upgrade-from” version.
- [KGW-1850] Implemented OAM logging for Solar Power Monitor data on Photon

Bugfixes compared to previous version:

- [KGW-418] Fix incorrect `ifplugd` startup options.
- [KGW-625] Failover doesn't work for OAM Features on NS and OAM Server.
- [KGW-785] Bootloader summary on Micro Outdoor not showing Eth MAC.
- [KGW-1088] Enterprise 1.0.1 - Can't program `spfile` and `ubootfile` using TFTP (factory install).
- [KGW-1100] TGB intermittently doesn't capture both Alarm and Fault when the state changes.
- [KGW-1216] After the factory install, `system_version` shows system monitor as two different versions.
- [KGW-1464] Cannot use U-Boot environment variables to update U-Boot and recovery images.
- [KGW-1486] The NS returns wrong GW firmware version.
- [KGW-1538] Micro Gen. 2 - “Last reset Reason” is not displayed during bootup and in syslog it shows “Watchdog timeout” for everything.
- [KGW-1541] Micro Gen. 2 - If I create a backup when backup directory is full (almost full) then backup doesn't but gets stuck in that state.
- [KGW-1578] Setting static IP address removes network interface options.
- [KGW-1653] Web Server - SHM version display on index page.
- [KGW-1663] Wwan0 Startup script wasn't created if the GW programmed at the factory without modem populated with connection manager v0.63.
- [KGW-1754] KONA Link - Removing newly created APN profile results incorrect “oninput” function for all profiles below it.
- [KGW-1878] `send_pkt` error for FSK modulation on dual antenna ports.
- [KGW-1881] Low Battery Warning Alarm/Fault raised always on Micro PoE.
- [KGW-1917] Dropbear sporadically quits.

- [KGW-1956] Geolocation on Macro shows SPI read error.
- [KGW-1978] KONA Link - Port numbers gets converted to string in server configuration.
- [KGW-1988] SHM version does not display patch version.
- [KGW-2004] Fix RSSI calculation for FSK uplinks to match the expected value
- [KGW-2039] Unlock cellular modem after firmware update.
- [KGW-2083] Packet forwarder does not treat `/etc/default/tektelic` as config file.
- [KGW-2101] Inconsistency between KONA Link packages.
- [KGW-2110] Two GPIO binary files in `/lib/firmware/fpga` after upgrade and host name still says "kona-micro-gen2-XXXXXX".
- [KGW-2112] KONA Link - Interface value is set as 'zero' on Network Monitor configuration file when the request sent having value as 'auto'.
- [KGW-2116] Field "product" under `system_version` is missing upon upgrade on Micro Gen2 and Micro PoE.
- [KGW-2120] 2022#3 - POE-Micro - After upgrade from BSP 2.5.1 to 5.1.1, hostname shows as "kona-micro-poe-XXXXXX".
- [KGW-2133] More than one DHCP processes are running after Network Monitor restarts the DHCP.
- [KGW-2134] Excessive initialization time after recovery boot on new kernel.
- [KGW-2159] In-service download `getFirmwareReported` is not displaying the BSP version once the upgrade is successful.
- [KGW-2160] GPS time reported by gateways may be wrong.
- [KGW-2213] Packet Forwarder log prints update log of LoRa filter file very often.
- [KGW-2257] Web Server as part of 2022#3 - upon upgrade from 2.1.2 to 3.1.2, clicking settings page keeps asking for credentials.
- [KGW-2260] BSP upgrade from BSP 3.1.2-r8 to 3.1.3-alpha1-r8 creates two backup files.
- [KGW-2268] Web Server - login credentials page doesn't show-up upon upgrade from 2.1.5 to 3.1.4 on hostname URL.
- [KGW-2284] Low Battery Warning and Battery on Discharge faults/alarms raised by default on Micro Gen2.1.
- [KGW-2299] Reset reason registers need to be cleared after reading and logging in SHM.
- [KGW-2403] OMA DM script does not work for new kernel.
- [KGW-2453] Connection manager does not restart after a crash.