Release Notes

60 Series

Version 5.0.0.17

This document provides release notes for 60 series radio software packages **backports-laird-5.0.0.17, laird-sterling-60-5.0.0.17, sterling_supplicant-arm-5.0.0.17, sterling_supplicant-x86-5.0.0.17 and sterling_supplicant-src-5.0.0.17** as well as previously distributed release notes, if applicable.

Release notes are a summary of new and enhanced features, resolved issues, and known issues that are not resolved in this version. Consult the User's Guide for details on the features of this software release.

Software Version 5.0.0.17

Released June 2018

Software part number: ST60LXLT1-180621

OS: Linux

New or Enhanced Features

- Includes backports-laird-5.0.0.17 – 60 series backports package with support for building Wi-Fi and Bluetooth drivers
- Includes laird-sterling-60-5.0.0.17 – 60 series firmware package. 60 series firmware is updated to version 2.5.8.3 for SDIO and 2.4.8.3 for PCIe
- Includes Sterling supplicant builds 5.0.0.17 for ARM and x86.
- Added support for recovering the SDIO radio when the radio is no longer responding to SDIO accesses. (11298)

Resolved Issues

Firmware

- When connected on the 2.4 GHz band, QOS Null packets will now rate shift down to 1 Mbps if necessary. (12829)
- An issue that could prevent a QoS Null packet from being sent in response to the TIM being set at the AP, while WoWLAN is enabled, has been resolved. (13049)
- An issue which caused a firmware command timeout under low signal conditions with WoWLAN enabled has been resolved. (13051)

Driver

- Resolved an issue that could cause a crash in the kernel timer handler. (13006)

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Known Issues

Firmware

- When using WLAN PCIE interface on ARM platform no scan results are returned from the radio and radio appears to be inoperable. (12632)
- While suspended with the WoWLAN NL80211_WOWLAN_TRIG_ANY trigger enabled, the 60 radio may stop responding to trigger events if the QoS Null data packet sent by the 60 radio to the AP to retrieve buffered packets is max retried due to a lack of response from the AP. (12991)
- Occasionally when using AP mode, the RSSI of connected client may appear low. (11842)

Driver

- The output of the command **iw wlan0 link** always displays the bitrate as the lowest data rate for the connected frequency band. (10679)

SOFTWARE VERSION 3.5.5.94

Released June 2018

Software part number: ST60LXLT1-180605

OS: Linux

New or Enhanced Features

- Includes backports-laird-3.5.5.94 – 60 series backports package with support for building Wi-Fi and Bluetooth drivers
- Includes laird-sterling-60-3.5.5.94 – 60 series firmware package. 60 series firmware is updated to version 2.5.8.1 for SDIO and 2.4.8.1 for PCIe
- The Sterling supplicant is now included as a part of Sterling product releases. (11897)
- Support for SISO mode operation has been added to support single antenna applications. (12219, 12391) SISO mode can be enabled by configuring the module parameter SIS0_mode=<value>. Valid values are:
  - 0: Disable (Default)
  - 1: Ant0 (Wi-Fi antenna)
  - 2: Ant1 (Shared Wi-Fi and Bluetooth antenna)
- Added support for recovering the SDIO radio when a firmware command timeout is detected. (11298)
- Added reset logic to the SDIO driver to support suspend/resume. (11299)
- Support for the Laird Manufacturing Utility (LMU) has been added to the 60 series radios (SDIO only). (11300)
- Support for the Laird Regulatory Utility (LRU) has been added to the 60 series radios (SDIO only). (11301)
- The 60 radio can now be configured for a specific regulatory domain using LMU. In addition to WW, currently supported regulatory domains are FCC, IC, ETSI, KCC, JP and CN. (11728, 12441)
- Support for WoWLAN has been added (SDIO only). (12134) The following WoWLAN triggers are supported:
  - NL80211_WOWLAN_TRIG_ANY - loss of association or RX of any unicast 802.11 packet
  - NL80211_WOWLAN_TRIG_DISCONNECT - loss of association
  - NL80211_WOWLAN_TRIG_NET_DETECT - SSID detected
- Support for 802.11w has been enabled. (11350)

Resolved Issues

Firmware

- Resolved an issue with the 60 radio firmware which caused the signal strength reported by iw to be unstable. (11700)

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- Resolved multiple cases where the 60 radio firmware could become unresponsive, resulting in command timeouts, under high traffic load conditions or in roaming scenarios. (11698, 11775, 12866)
- Resolved an issue with the 60 radio firmware that caused it to stop transmitting packets, resulting in a failure to connect to a wireless network. (12538)
- When configured for simultaneous Client and AP mode, the 60 radio no longer stops sending traffic when large amounts of data are sent simultaneously over both interfaces. (12764)
- QOS Null packets are no longer sent only at 24 Mbps, but will now also be sent at lower legacy rates as needed. (12829)

Driver

- The 60 radio is no longer slow to connect on DFS channels. (11701)
- Added functionality to allow the setting of TX power using upper layer tools such as iw. (11614)
- The WPA2 KRACK vulnerability has been resolved. (12160)
- Resolved an "skb allocation failure" error, which occurred under heavy RX load, by removing a driver flag which limited the number of buffers that could be allocated. (12498)
- The 60 radio will now connect to an AP that is not including the SSID in beacons and is operating on a DFS channel. (12712)
- Resolved a kernel panic caused by start/stop of the Block Ack timer. (13011)

Supplicant

- The WPA2 KRACK vulnerability has been resolved. (12106)

Backports

- Invalid options in the sterling60 and bluetooth defconfigs for CPTCFG_BT_LE and CPTCFG_BT_RFCOMM_TTY have been corrected. (11610)
- When building backports using the bluetooth or sterling60 defconfigs, the Bluetooth usb driver will now successfully build. (11711)

Bluetooth

- An issue where Bluetooth could cause the Wi-Fi firmware to become unresponsive while roaming has been resolved. (12612)
- An issue where heavy Bluetooth traffic could cause the Wi-Fi firmware to become unresponsive has been resolved. (12617)

Known Issues

Firmware

- When using WLAN PCIE interface on ARM platform no scan results are returned from the radio and radio appears to be inoperable. (12632)
- While suspended with the WoWLAN NL80211_WOWLAN_TRIG_ANY trigger enabled, the 60 radio may stop responding to trigger events if the QoS Null data packet sent by the 60 radio to the AP to retrieve buffered packets is max retried due to a lack of response from the AP. (12991)
- Occasionally when using AP mode, the RSSI of connected client may appear low. (11842)

Driver

- The output of the command **iw wlan0 link** always displays the bitrate as the lowest data rate for the connected frequency band. (10679)

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SOFTWARE VERSION 3.5.5.14

Released September 2017

Software part number: 60LXLT1-170914

OS: Linux

New or Enhanced Features

- backports-laird-3.5.5.14 – 60 series backports package with support for building Wi-Fi and Bluetooth drivers
- laird-sterling-60-3.5.5.14 –60 series firmware package
- 60 series firmware is updated to version 8.5.2.20 for SDIO and 8.4.2.20 for PCIe

Resolved Issues

Firmware

- An issue causing the 60 radio to incorrectly retry packets sent at .11b rates is resolved. (11757)

Driver

- The 60 radio now connects on channel 165. (11703)
- When configured with a static WEP key, the radio now uses the configured transmit key rather than always using key index 0. (11639)
- The 60 radio in AP mode no longer fails to transmit beacons if the WPA IE contains more than one pairwise cipher. (11764)

Known Issues

Firmware

- The 60 radio is sometimes slow to connect on DFS channels, particularly when the AP is configured for 40 MHz or 80 MHz channels. (11701)

Driver

- The output of the command **iw wlan0 link** always displays the bitrate as the lowest data rate for the connected frequency band. (10679)

Backports

- When building backports using the bluetooth or sterling60 defconfigs, the Bluetooth USB driver does not build. (11711)

SOFTWARE VERSION 3.5.5.4

Released July 2017

Software part number: 60LXLT1-170728

OS: Linux

New or Enhanced Features

- Initial 60 series release
- backports-laird-3.5.5.4 – 60 series backports package with support for building Wi-Fi and Bluetooth drivers
- laird-sterling-60-3.5.5.4 –60 series firmware package

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Known Issues

Firmware

- The 60 radio is sometimes slow to connect on DFS channels, particularly when the AP is configured for 40 MHz or 80 MHz channels. (11701)

Driver

- The 60 radio does not currently connect on channel 165. (11703)
- The output of the command iw wlan0 link always displays the bitrate as the lowest data rate for the connected frequency band. (10679)
- When configured with a static WEP key, the radio always uses key index 0 as the transmit key regardless of which WEP key is configured. (11639)

Backports

- When building backports using the bluetooth or sterling60 defconfigs, the Bluetooth USB driver does not build. (11711)

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