Release Notes

Laird Software Version 3.5.0.9 for the MSD30AG and SSD30AG Radios

September 2015

This document provides release notes for Laird software operating on a device with the MSD30AG or the SSD30AG Summit radio.

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

Operating System Support

- Windows CE 5
- Windows CE 6
- Windows Mobile 5.0
- Windows Mobile 6.5
- Windows Embedded Compact 7

Version 3.5.0.9

Content

SDK	Driver	Supplicant	sdcgina	sdc_gina	SCU	scuTray	sdc_applet
3.5.0.20	3.5.0.9	3.5.25.3	3.5.1.4	3.5.1.17	3.5.9.60	3.5.1.8	3.5.1.3

Resolved Issues

The following issues were fixed in this release:

- **Scutray popup** – Fixed an issue that caused an unwanted popup message to occur. (7704)

Version 3.5.0.8

Content

SDK	Driver	Supplicant	sdcgina	sdc_gina	SCU	scuTray	sdc_applet
3.5.0.20	3.5.0.9	3.5.25.3	3.5.1.4	3.5.1.17	3.5.9.60	3.5.1.7	3.5.1.3

Resolved Issues

The following issues were fixed in this release:

- **CCX directed scan issue** – Fixed an issue in firmware that caused the radio to stop responding when CCX Location Measurement was enabled on the controller and the radio received an RM request directing it to do an off channel scan. (7542)

Version 3.5.0.7

Content

SDK	Driver	Supplicant	sdcgina	sdc_gina	SCU	scuTray	sdc_applet
3.5.0.20	3.5.0.8	3.5.25.3	3.5.1.4	3.5.1.17	3.5.9.60	3.5.1.7	3.5.1.3

New and Enhanced Features

- **Added Support for Windows Embedded Compact 7** – This release adds support for Windows Embedded Compact 7. Note that support is limited to the Laird supplicant only; Third Party mode is not supported when running in Windows Embedded Compact 7.

Resolved Issues

The following issues were fixed in this release:

- **WPA only profile** – As of January 2014, a WPA only profile is no longer allowed by the Wi-Fi Alliance. With this release, a profile configured for WPA TKIP connects using the best available encryption/key-management combination advertised by the AP. This change also resolved an issue that prevented the radio from connecting to an AP configured for WPA with AES-CCMP encryption. (5451)

- **TX Power Set Incorrectly with 802.11h** – Fixed numerous issues with 802.11d/802.11h implementation that resulted in the Transmit power level set too low when an 802.11h power constraint element was broadcast by the AP. (4996)

- **Configurable connect timeout support –** Support for a configurable connect timeout has been added. This speeds up the recovery time if a connect hangs. (5668)

  Note the following:

  The global config registry *connTimeout* (DWORD) can be used to set a custom connect timeout value (in ms).

  Default: 20000 ms

  Range: 10000 – 20000 ms (or 10 – 20 seconds). If the value is set outside of this range, the default timeout value is used

- **Scanning issue** – With old model Cisco APs (such as 1131AG and 1231), the AP would have the group cipher as TKIP and the pairwise cipher as AES. Scan results were reporting TKIP but should have been elevated to AES. With this release, scan results now report AES. (5217)

- **Powersave reverts to CAM –** Fixed an issue that caused the driver to revert to CAM from another power state after disabling the radio, going through a suspend/resume sequence, and re-enabling the radio. (5339)

- **WLAN failure after switching radio mode from adhoc to abg –** Fixed an issue that caused the radio to fail after switching the radio mode from adhoc to abg. (4600)

- **SCU crash** – Fixed SCU crash when certificate store path length is greater than 39 characters. (6081, 6074).

- **GetBSSIDList() reports incorrect wepType –** Fixed an issue that caused the function GetBSSIDList() in the SDK to incorrectly report wepType = WPA2_TKIP instead of WPA2_AES when the RSN IE included an 8021X AKM, and did not include a CCKM AKM. (5324)

- **SCU** - All passwords including Admin Login, Admin password, and Wi-Fi Security Passwords (i.e. WEP Keys, PSK, etc.) are now displayed as '*'. There is no option to see the passwords in plain text in the SCU.exe or SDCGina.exe. (6912)

- **SCU** – Fixed an issue that caused SCU to create a profile with WPA2-TKIP instead of WPA2-AES when an AP advertised support for both WPA2-TKIP and WPA2-AES. (7459)

Known Issues

The following are known issues when using the 30AG radio in this release:

- **Cisco controller issue**: When running Cisco controllers, the 30AG radio may have difficulty selecting a band when the same SSID is offered on both the 2.4 GHz band and the 5 GHz band. Cisco controllers can simultaneously use the same MAC address as the BSSID for two different SSIDs on different bands. If different SSIDs are mapped to the same BSSID, the 30AG is unable to distinguish between the two. This causes the radio to repeatedly change bands/channels within a few seconds.

- **CCX V4 voice features:** Three CCX V4 voice features – call admission control (CAC), (unscheduled automatic power save delivery (U-APSD), and traffic stream metrics – are not supported.

- **CCX Full vs. CCX Optimized:** The behavior of a 30AG radio is the same with a "CCX features" global setting value of Full or Optimized.

- **Tray icon issue:** Toggling the Tray Icon off and then on makes the icon unresponsive.

- **SCU Arabic version (WM 6.5):** The SCU does not operate properly when using the Arabic version on WM 6.5 devices.

- **SRU Average Power display error:** Despite changes made to transmit power using the Antenna Adjust boxes in the Summit Manufacturing Utility (SMU), the Summit Regulatory Utility (SRU) Avg. Power always displays as Max. Summit has verified that this is a cosmetic issue only; transmit power adjustments are functional despite what displays in the SRU. Summit plans to fix this issue in a future release.

- **Re-association issue** – A 30AG radio that has a single antenna connected but is configured with antenna diversity enabled and antenna adjust is less than 100%, may have difficulty reconnecting if it loses connection due to being on the edge of the coverage area or when the device is suspended/resumed in a low signal area. Under these conditions, the 30AG radio may fail to re-associate until the device is moved to an area with a stronger signal. To avoid this issue, set antenna diversity to main only. (4517)

- **Bluetooth Coexistence/LED Use:** Summit 30AG radios support two LED modes:
  - Standard: Uses pin 42 (MSD30AG) or pin 33 (SSD30AG). Is set via the global setting LED.
  - Special: Is used in conjunction with Bluetooth coexistence. When Wi-Fi data is transmitted, pin 28 of the MSD30AG (pin 49 of the SSD30AG) radio goes high, and the LED for Wi-Fi should be on. When Bluetooth data is transmitted, pin 36 of the MSD30AG (pin 52 of the SSD30AG) radio goes high, and the LED for Bluetooth should be on.

- **Signal quality may display incorrectly:** Due to the fact that the firmware no longer reports missed beacons to the driver, the signal quality in SCU almost always displays a signal quality of 100%.

- **Disconnection issue:** The 30 series radio may disconnect for a short period of time when Bluetooth begins a 2.4 Ghz spectrum hopping transmission in close proximity to the antenna. This is most commonly seen during a Bluetooth discover. Wi-Fi immediately reconnects once Bluetooth discover ends or the Bluetooth device becomes paired.

Version 3.4.6.12

Resolved Issues

The following issues were fixed in the **V3.4.6.12** release:

- **Worldwide mode issue (.11d) –** When in worldwide mode and a country code is present in beacons, .11d would not adopt the channel set of the advertised country code. This issue has been fixed. (4446)

- **Supplicant throws exception –** Previously, the supplicant would throw an exception if the CertPath was not set on some platforms. This is no longer an issue. (4626)

- **Worldwide mode channel issue –** Previously, there was a 5 GHz channel issue in Worldwide mode when an AP advertised the CN country code. With this release, support has been added for the UNII-1 channels when the CN country code is adopted. (4674)

- **Radio mode display issue –** Previously, LCM (SCU) would not display the radio mode on new profiles. This issue has been resolved. (4795)

- **No support for higher encrypted certificates –** With this release, the supplicant now supports higher encrypted certificates. (4770)

Known Issues

The following are known issues when using the 30AG radio with **V3.4.6.12**:

- **Cisco controller issue**: When running Cisco controllers, the 30AG radio may have difficulty selecting a band when the same SSID is offered on both the 2.4 GHz band and the 5 GHz band. Cisco controllers can simultaneously use the same MAC address as the BSSID for two different SSIDs on different bands. If different SSIDs are mapped to the same BSSID, the 30AG is unable to distinguish between the two. This causes the radio to repeatedly change bands/channels within a few seconds.

- **CCX V4 voice features:** Three CCX V4 voice features – call admission control (CAC), (unscheduled automatic power save delivery (U-APSD), and traffic stream metrics – are not supported.

- **CCX Full vs. CCX Optimized:** The behavior of a 30AG radio is the same with a "CCX features" global setting value of Full or Optimized.

- **Attempting to associate to an unsupported configuration:** When an AP is configured for WPA with AES-CCMP encryption – an unsupported configuration for Summit radios – the 30AG radio will alternate repeatedly between *Associated* and *Not Associated* states.

- **Tray icon issue:** Toggling the Tray Icon off and then on makes the icon unresponsive.

- **SCU Arabic version (WM 6.5):** The SCU does not operate properly when using the Arabic version on WM 6.5 devices.

- **SRU Average Power display error:** Despite changes made to transmit power using the Antenna Adjust boxes in the Summit Manufacturing Utility (SMU), the Summit Regulatory Utility (SRU) Avg. Power always displays as Max. Summit has verified that this is a cosmetic issue only; transmit power adjustments are functional despite what displays in the SRU. Summit plans to fix this issue in a future release.

- **Re-association issue** – A 30AG radio that has a single antenna connected but is configured with antenna diversity enabled and antenna adjust is less than 100%, may have difficulty reconnecting if it loses connection due to being on the edge of the coverage area or when the device is suspended/ resumed in a low signal area. Under these conditions, the 30AG radio may fail to re-associate until the device is moved to an area with a stronger signal. To avoid this issue, set antenna diversity to main only. (4517)

- **Bluetooth Coexistence/LED Use:** Summit 30AG radios support two LED modes:

  - Standard: Uses pin 42 (MSD30AG) or pin 33 (SSD30AG). Is set via the global setting LED.

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- Special: Is used in conjunction with Bluetooth coexistence. When Wi-Fi data is transmitted, pin 28 of the MSD30AG (pin 49 of the SSD30AG) radio goes high, and the LED for Wi-Fi should be on. When Bluetooth data is transmitted, pin 36 of the MSD30AG (pin 52 of the SSD30AG) radio goes high, and the LED for Bluetooth should be on.

- **Signal quality may display incorrectly:** Due to the fact that the firmware no longer reports missed beacons to the driver, the signal quality in SCU almost always displays a signal quality of 100%.

- **Disconnection issue:** The 30 series radio may disconnect for a short period of time when Bluetooth begins a 2.4 Ghz spectrum hopping transmission in close proximity to the antenna. This is most commonly seen during a Bluetooth discover. Wi-Fi immediately reconnects once Bluetooth discover ends or the Bluetooth device becomes paired.

Version 3.4.6.11

Resolved Issues

The following issues were fixed in the **V3.4.6.11** release:

- **Supplicant's expired certification check –** With this release, we have added the ability to toggle the supplicant's expired certification check. Certificate date checking is enabled in the supplicant if the suppInfo bit 2 is set (0x4) in the global configuration. (4505)

- **Roam fails on scan abort –** A radio does not roam if a scan fails with a power management error. A work-around is provided in this release to prevent this failure. (4643)

- **Target Assertion Error –** If the Target Assertion state occurs, the driver is now able to reset the chip and recover the radio within a second. (4662)

- **Unresponsive firmware –** The issue of unresponsive firmware after receiving an out-of-sequence authentication response (failure) with reason code 12 during roaming has now been fixed. (4663)

- **Wi-Fi issue –** Prior to this release, Wi-Fi would not come up successfully during a system boot up. This has been resolved with this release. (4673)

- **LCM (SCU) layout issue –** In the Simplified Chinese version of LCM (SCU), some words fall outside the layout on the PSK key page. (4675)

- **Configurable scan timeout support –** Support for a configurable scan timeout has been added. This speeds up the recovery time if a scan hangs. (4790)

  Note the following:

  - The global config registry *scanTimeout* (DWORD) can be used to set a custom scan timeout value (in ms).

    Default: 20000 ms

    Range: 2000 – 20000 ms (or 2 – 20 seconds). If the value is set outside of this range, the default timeout value is used.

Version 3.4.6.8

New and Enhanced Features

The following features in **V3.4.6.8** were not supported in previous versions of Laird software for the 30AG radios.

- **Additional key management and encryption options –** The following are now supported for SCU configured profiles:

  – WPA and WPA PSK with AES encryption

  – WPA2 and WPA2 PSK with TKIP encryption

Resolved Issues

The following issues were fixed in the **V3.4.6.8** release:

- **Connection timeouts following suspend/resume –** Before the fix, connection attempts following suspend/resume would sometimes time out when the connection request was issued while still scanning. This issue has been resolved.

- **Connection issue on profile switch –** When connecting using SCU configured profiles, the 30AG would previously fail to connect at times following a profile switch. This issue has been resolved.

- **Firmware unresponsive when generating CCX adjacent AP report –** If the 30AG firmware attempted to generate a CCX adjacent AP report that contained entries for more than 20 APs, the firmware would become unresponsive resulting the in the driver resetting the radio. This issue has been resolved and the firmware no longer becomes unresponsive when it detects more than 20 adjacent APs.

- **30AG radio misinterprets data rate IE –** The re-association response from certain APs previously had an extra byte at the end which resulted in the 30AG radio misinterpreting the data rate IE. This issue has been resolved.

- **30AG radio stops sending data packets –** Previously, there was an issue with the 30AG firmware which would cause the buffer to fill completely. When in this state, the radio would continue to send management frames but would no longer send data packets. This issue has been resolved.

- **Failure to connect when using Shared key authentication –** Previously, the 30AG radio would fail to connect to an AP when configured for Shared key authentication. The 30AG radio now connects using Shared key authentication. (4339)

The following issues were fixed in the **V3.03.34.192** release:

- **Scanning on UNII-1 channels when operating outdoors:** Since operating on UNII-1 channels is disallowed outdoors, support for the registry key 5GHzOutdoorMask was added to allow the enabling of passive scanning on UNII-1 channels.

The following issue was fixed in the **V3.03.33.189** release:

- **Roaming between CKIP enabled and non-CKIP enabled APs:** If the 30AG was initially connected to an AP with CKIP enabled and then roamed to an AP that did not have CKIP enabled, the device was unable to pass data. The 30AG can now successfully pass data after roaming between a CKIP enabled AP and a non-CKIP enabled AP.

The following issues were fixed or feature was added in the **V3.03.32.187** release:

- **CKIP support:** Support for CKIP with WEP profiles has been added for the 30AG radios. CKIP support is limited to WEP profiles and is not supported with 802.1x profiles.

- **Power management bit set on probes during off channel scanning:** During off channel scanning, probe requests were sent with the power management bit set, which is not allowed by new WFA certification requirements.

- **Probe requests:** Probe requests are no longer sent with the power management bit set.

- **Transmit power reduced after suspend/resume:** When the antenna adjust feature was configured for a value other than 100%, the transmit power of the 30AG radio was reduced following each

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suspend/resume cycle. This issue did not occur when antenna adjust was set to 100%. This issue has been resolved. (1659)

- **Power management indicated when in CAM mode:** When configured for CAM mode, the 30AG radio would send null packets with the power management bit set during the 10 seconds following association, until a full scan was run. The 30AG radio no longer sends null packets with the power management bit set when in CAM mode.

- **30AG fails to respond to the TIM in CAM mode:** When the 30AG radio was configured for CAM mode, it would not respond to the TIM set in a beacon when an AP erroneously believed the 30AG had power management enabled. The 30AG radio will now respond to a TIM set in a beacon when configured for CAM mode.

- **30AG sends a null data packet before authentication is complete:** After associating to an AP, the 30AG radio would often send a null data packet to the AP before authentication was complete. This may cause some APs to de-authenticate the client and cause the 30AG to reconnect to the AP. The 30AG radio no longer sends a null packet before authentication is complete.

- **TKIP MIC errors after incomplete key exchange:** If the WPA 4-way handshake partially completes so that the unicast key is set, but the group key is not, the 30AG could report MIC errors on broadcast packets received before the client reconnects. This could typically happen in a low signal environment which results in many retries occurring on authentication packets. The 30AG no longer reports TKIP MIC errors on broadcast packets if the group key has not been set.

- **Band edge issue on channel 1 during FCC test:** Transmit power for G rates on channel 1 were reduced by 1 dBm to resolve a band edge issue during FCC regulatory testing.

The following issues were fixed or feature added in the **V3.03.23** release:

- **CCX On/Off**

- **Added the following new registry value: WiFiStateOff:** With Summit supplicant active, set registry key *WiFiStateOff* =1 to remove the radio on/off control from wireless manager. If *ThirdPartyConfig* mode (e.g. zero config) is set, Summit recommends that the radio is controlled through the wireless manager (rather than through SCU).

- **Added the following new registry value: ignoreNullSsid:** *ignoreNullSsid* configures the client not to connect to null SSIDs.

- **Added the following new registry value: 5GhzChanMask:** Setting the value of 5GhzChanMask to "0" disables the use of 5 GHz channels while a value of "1" enables them.

- **PEAP-TLS authentication failure:** PEAP-TLS authentication failure no longer occurs after a session timeout/resumption. (1276)

- **Radio association issue:** Previously, disabling a 30AG radio through SCU and then warm-booting would prevent the radio from associating. This issue has been resolved. (1331)

- **Authentication failure:** With the supplicant, authentication was failing due to an 'expired server certificate' even though the certificate was not expired. This issue has been resolved. (1332)

- **U-APSD not enabled:** U-APSD is now enabled on the 30AG. (1492)

- **Reconnection delay:** Previously, a 100 second reconnection delay would occur after a failed association. This is no longer an issue. (1540)

- **PEAP failures:** PEAP failures with the Microsoft NPS server no longer occur when the optional crypto-binding check is enabled. (1580)

- **Synchronization issues:** Previously, the 30AG client would become out of sync with the AP after retries on null p-bit on packets. This is no longer an issue. (1626)

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- **Roaming issues:** When the 30AG driver attempted to force a roam to a specific AP, an uninitialized variable firmware bug intermittently caused it to roam to the wrong AP. This issue has been resolved. (1627)

The following issues were fixed in the **V3.03.21** release:

- **CCX V4 – DDP packets:** Previously, Database Description packets (DDP) were not sent when operating with AP-assisted roaming. This issue has been resolved. (1362 and 1097)

- **MIC (formerly TELEC) and ETSI issues:** 30AG radios configured for the MIC regulatory domain now connect on channel 14. 30AG radios configured for the ETSI regulatory domain no longer passively scan the following UNII-1 channels: 36, 40, 44, and 48. (1092 and 1093)

- **Transmit power:** When configured for ETSI and KCC regulatory domains, maximum transmit power on the Status window is now displayed correctly (63 mW instead of 50 mW). (1133)

- **Client name:** When the client name is configured on the active profile, the 30AG radio now sends the name to the access point in the Association Request.(1106)

- **30AG connection issues:** The 30AG now connects to an AP with a hidden SSID on a passively scanned channel. (1094)

- **Client power constraint**: The 30AG now adheres to the client power constraint setting only when the CCX global config option is set to **Full**. (1099)

- **30AG in WW:** Previously, the 30AG set in WorldWide mode with .11d would not connect on Intermediate band channels. This issue has been resolved. (1101)

- **Aux antenna signal:** The 30AG now no longer uses the Aux antenna signal when configured for **Main Only**. (1119)

- **Tx diversity:** The firmware issue that caused Tx diversity problems has been fixed. (1218)

- **Disabling CCX features:** The 30AG now has the ability to disable CCX features. (1264)

- **WM 6.5 Wireless Manager:** The Summit radio can be removed from WM 6.5 Wireless Manager using the WiFiStateOff registry key. (1269)

- **Four-way handshake failure:** Previously, the four-way handshake failed during re-authentication. This issue has been resolved. (1277)

- **30AG connectivity issues:** Previous issues between the BG Channel Set and 5 GHz Band connectivity have been corrected. (1361)

The following issues were fixed in the **V3.03.11** release:

- **Roaming Issues**: Previously, there were issues when roaming to BBSIDs that do not begin with "00". This problem has been resolved.

- **Radio control issue (WM 6.5):** Previously in SCU, if the 30AG radio is turned off through the CE Windows Network Manager, the control that allows the radio to be turned would disappear. This issue has been resolved.

- **CKIP authentication:** CKIP is no longer an encryption option in SCU.

- **Intermediate CA support:** The capability has been added to look into the intermediate store for CA certs which allows intermediate certs to be used.

- **Change to credential window prompting method:** You are now prompted for credentials when you choose an SSID from scanning on SCU. If the key is not valid:
  - noPromptForCreds=1 – Prompt once for credentials
  - noPromptForCreds=2 – Never prompt for credentials

The following issues were fixed in the **V3.03.09** release:

- **EAP-TLS with no stored username:** When running EAP-TLS authentication without storing a username in the profile credentials, the supplicant would clear the certificate after prompting for the username. The user certificate is no longer cleared when the user is prompted for credentials.

- **Clearing CA or PAC:** When switching between EAP-FAST and PEAP-MSCHAP authentication on a single profile, the CA (for PEAP) or the PAC file (for EAP-FAST) was not being cleared. This caused an authentication failure.

- **Suspending device with SCU open:** If SCU was open, then certain devices would not always go into suspend mode when triggered by the power management settings. This is no longer an issue.

- **Error status displays requiring a reset:** At times, the radio would display an error status and would need to be reset. This issue has been resolved.

- **Signal strength affects signal quality:** Prior to this issue being fixed, signal quality would go to 0% when signal strength was stronger than -20dB.

- **Memory leak:** A memory leak that occurred with every suspend/resume sequence has been fixed.

- **Beaconing after switch from ad hoc:** 30AG no longer beacons after switching from an ad hoc profile to an infrastructure profile.

- **Switching from ad hoc profile to non-ad hoc profile:** When switching from an ad hoc profile to an infrastructure profile, the 30AG devices must be suspended and resumed for the radio to operate properly.

- **CCKM with AES:** A profile Encryption setting of WPA2 CCKM, or CCKM with WPA2-Enterprise (EAP authentication and AES-CCMP encryption), is supported.

- **EAP-TLS and FreeRadius:** To ensure compatibility with FreeRadius server versions prior to v2.1.10, RFC4507 EAP-TLS session ticket support has been disabled

- **LED:** Operation of the 30AG LED is now supported.

- **Auto Profile support**: The MSD30AG and SSD30AG radios now support the Auto Profile feature. For additional information regarding Auto Profile, refer to the Auto Profile entry of the Summit Technical Knowledge Base.