RELEASE NOTES

Software Version 22.3.4.13 for the SD40 Radio Modules

November 2015

This document provides release notes for Laird software version operating on a device with the MSD40NBT, SSD40NBT, or MSD41NBT, SSD41NBT, or SSD40L radio modules.

These release notes are a summary of new and enhanced features, resolved issues, and known issues present with this release and previous releases.

Operating System Support

- Windows CE 5
- Windows CE 6
- Windows Embedded Compact 7
- Windows Embedded Compact 2013
- Windows Mobile 5.0
- Windows Mobile 6.5

VERSION 22.3.4.13

Content

SDK	sdcsd40n	Supplicant	SCU	LCM	sdcgina	sdc_gina
3.5.2.6	36.3.4.49	40.3.2.4	45.3.11.4	48.3.1.12	41.3.3.0	42.3.4.1

scutray	sdc_bttray	sdc_bt	sdc_btss	LCMDN	lrdibs	lrdiblogger
44.3.3.3	54.2.2.23	52.4.10.20	53.2.3.1	49.3.1.8	62.0.0.8	61.0.0.28

New and Enhanced Features

- Support for new FCC requirements – This release implements changes needed to comply with new FCC requirements as follows:
  - Improve device security by validating firmware and configuration files
  - Uses multiple access points as supplemental information to validate country codes received as part of 802.11d
- WEC2013 – Added support for WEC2013
- Enhanced Logging – Redesigned the debug logging mechanism to unify debug output from all components into one log file using a new Information Broker component. This change improves performance while logging is enabled by moving the logging overhead out of the driver.
- Managed LCM – Added a new Laird Configuration Utility written in managed code with an overhauled UI. The new managed LCM has the same feature set as the previous LCM with the exception of Bluetooth.
- Show country code when in WW regulatory domain – SCU and LCM now show the 802.11d country code in effect (if any) when the World Wide regulatory domain is used.
- Supplicant upgraded – The Laird supplicant has been rebased to WPA supplicant v2.4

Note – The version numbering scheme has changed with this release. The primary change is to the first set of digits. In most cases, the first set of digits is now a unique component identifier.

Resolved Issues

The following issues have been resolved in this release:

- Minor performance improvements – Addressed several issues that caused unnecessary driver activity. (7259, 7260)
- Blank SSID – Fixed an issue that caused a blank SSID. (7369)
- Stuck during scanning – Fixed an issue that caused the radio to get stuck while doing a roam scan and blocked all future scans. (7411)
- Hang during roam between bands – Fixed an issue that caused the radio to hang when roaming between bands on the same AP. (7466)
- Slow driver load – Fixed an issue that could cause the driver to load slowly at boot and at resume on some systems. (7821)
- LCM doesn't save SSID in profile – Fixed an issue that prevented the SSID from being saved if a parameter is unconfigured and then corrected during profile creation. (7157)
- LCM UI issues – Fixed several minor UI issues in the LCM (5687, 7204, 7246, 8488)
- LCM scan button missing – Fixed an issue that caused the Scan button to disappear from the Configuration screen under some conditions on WM65 devices. (8098)
- LCM incorrectly allowed WPA2 TKIP network to be configured from Scan results – Fixed an issue that allowed WPA2 TKIP networks to be configured if the user double clicked that network entry in the scan results dialog. WPA2 TKIP networks are not permitted as part of the Wi-Fi Alliance certification, and this behavior has been removed. (8102)
- LCM password and network key obfuscation – Fixed several issues to make password and network key obfuscation behavior consistent. Dialogs used to create network keys or the Admin password now show the password as it is typed. Dialogs used to log in with previously created passwords or network keys will obfuscate the password. (8122, 8133)
- LCM support for 64 character hex PSK - Fixed an issue that prevented the use of a 64 character hex PSK. (8238)
- EAP timeout improvement – Fixed an issue that caused an authentication retry to delay longer than necessary when an EAP failure occurred. (7438)
- Improved connect time – Fixed several issues that sometimes caused unnecessarily delays when connecting to an AP, especially at boot and when coming out of a low power state. (8248, 8250)
- Data abort on ARP packet – Added a work around to avoid a data abort in the Microsoft TCPIP module that sometimes occurred when receiving a gratuitous ARP packet that was broadcast from host platform. (7252)
- Unnecessary disconnect – Fixed an issue that caused the radio to disconnect and reconnect on non-essential global configuration parameter changes. (8314)
- Disconnect after authentication – Fixed an issue that sometimes caused a disconnect to occur after EAPOL authentication and prior to the four way handshake. (8410)
- Failure changing radio modes – Fixed an issue that caused the radio to operate on the wrong band when switching between profiles that were configured with opposite band locked radio modes. (8458)
- N mode always enabled – Fixed an issue that resulted in N mode still enabled in some radio modes that are not intended to support N. (6914)

Known Issues

The following are known issues when using an SD40 radio in this release:

- Support for Windows Embedded Compact 7/13 – WEC7 and WEC2013 support is limited to the Laird supplicant only; third party mode is not supported. (6823)
- Low signal strength – In a single antenna configuration, low signal strength is reported when scanning for BT devices (40NBT). When a single antenna is shared by Wi-Fi and Bluetooth, the antenna must be connected to

the Aux antenna port. While Wi-Fi is active and the module is commanded to perform a BT scan, the driver attempts to resolve signal strength levels from the Main antenna port, which is not connected, resulting in incorrect reporting of the signal strength levels.
  - Workaround: Connect an antenna to both Main and Aux antenna ports. For devices where a single antenna is needed, the SD41NBT radio module, which is intended for single antenna applications, should be used. (4375)
- WL_LED_ACT is not enabled – WL_LED_ACT is not enabled with the LED global configuration option enabled and with the radio is connected to the network. (3745)
- Radio mode "G rates only" error – When the radio mode is set to *G rates only*, B rates are also advertised. (4003)
- OK button grayed out in EAP credentials dialog - After opening the EAP credentials dialog in SCU, the OK button for saving the credentials will remain grayed out until the password field is edited. (7395)

VERSION 3.5.3.12

Content

SDK	sdcsd40n	Supplicant	SCU	LCM	sdcgina	sdc_gina
3.5.0.20	3.5.3.17	3.5.25.3	3.5.9.60	4.3.48.249	3.5.1.4	3.5.2.2

scutray	sdc_bttray	sdc_bt	sdc_btss	sdc_wmpcontrol	sdcApplet	btwrlmgr
3.5.1.8	1.2.2.21	3.4.10.18	4.2.2.8	1.0.0.1	3.5.1.3	1.0.0.3

Resolved Issues

The following issues with the SD40 radio modules have been resolved in this release:

- Failure to reconnect to AP – Fixed a rare issue that prevented the radio from reconnecting after leaving and re-entering AP coverage area. (8249)

Known Issues

The following are known issues when using an SD40 radio in this release:

- Support for Windows Embedded Compact 7 – WEC7 support is limited to the Laird supplicant only; third party mode is not supported when running in Windows Embedded Compact 7. (6823)
- Low signal strength – In a single antenna configuration, low signal strength is reported when scanning for BT devices (40NBT). When a single antenna is shared by Wi-Fi and Bluetooth, the antenna must be connected to the Aux antenna port. While Wi-Fi is active and the module is commanded to perform a BT scan, the driver attempts to resolve signal strength levels from the Main antenna port, which is not connected, resulting in incorrect reporting of the signal strength levels.
  - Workaround: Connect an antenna to both Main and Aux antenna ports. For devices where a single antenna is needed, the SD41NBT radio module, which is intended for single antenna applications, should be used. (4375)
- WL_LED_ACT is not enabled – WL_LED_ACT is not enabled with the LED global configuration option enabled and with the radio is connected to the network. (3745)
- Radio mode "G rates only" error – When the radio mode is set to *G rates only*, B and N rates are also advertised. (4003)

- **OK button grayed out in EAP credentials dialog** - After opening the EAP credentials dialog in SCU, the OK button for saving the credentials will remain grayed out until the password field is edited. (7395)

VERSION 3.5.3.11

Content

SDK	sdcsd40n	Supplicant	SCU	LCM	sdcgina	sdc_gina
3.5.0.20	3.5.3.16	3.5.25.3	3.5.9.60	4.3.48.249	3.5.1.4	3.5.2.2

scutray	sdc_bttray	sdc_bt	sdc_btss	sdc_wmpcontrol	sdcApplet	btwrlmgr
3.5.1.8	1.2.2.21	3.4.10.18	4.2.2.8	1.0.0.1	3.5.1.3	1.0.0.3

Resolved Issues

The following issues with the SD40 radio modules have been resolved in this release:

- **LCM layout** – Fixed an LCM UI artifact that affected some large screen devices. (7559)
- **Scutray popup** – Fixed an issue that caused an unwanted popup message to occur. (7704)
- **Failure to detect AP** – Fixed a rare issue that caused the radio stop detecting AP beacons and probe responses after a disconnect. (7710)

Known Issues

The following are known issues when using an SD40 radio in this release:

- **Support for Windows Embedded Compact 7** – WEC7 support is limited to the Laird supplicant only; third party mode is not supported when running in Windows Embedded Compact 7. (6823)
- **Low signal strength –** In a single antenna configuration, low signal strength is reported when scanning for BT devices (40NBT). When a single antenna is shared by Wi-Fi and Bluetooth, the antenna must be connected to the Aux antenna port. While Wi-Fi is active and the module is commanded to perform a BT scan, the driver attempts to resolve signal strength levels from the Main antenna port, which is not connected, resulting in incorrect reporting of the signal strength levels.
  - **Workaround**: Connect an antenna to both Main and Aux antenna ports. For devices where a single antenna is needed, the SD41NBT radio module, which is intended for single antenna applications, should be used. (4375)
- **WL_LED_ACT is not enabled** – WL_LED_ACT is not enabled with the LED global configuration option enabled and with the radio is connected to the network. (3745)
- **Radio mode "G rates only" error** – When the radio mode is set to *G rates only*, B and N rates are also advertised. (4003)
- **OK button grayed out in EAP credentials dialog** - After opening the EAP credentials dialog in SCU, the OK button for saving the credentials will remain grayed out until the password field is edited. (7395)

VERSION 3.5.3.10

Content

SDK	sdcsd40n	Supplicant	SCU	LCM	sdcgina	sdc_gina
3.5.0.20	3.5.3.14	3.5.25.3	3.5.9.60	4.3.48.248	3.5.1.4	3.5.2.2

scutray	sdc_bttray	sdc_bt	sdc_btss	sdc_wmpcontrol	sdcApplet	btwrlmgr
3.5.1.7	1.2.2.21	3.4.10.18	4.2.2.8	1.0.0.1	3.5.1.3	1.0.0.3

Resolved Issues

The following issues with the SD40 radio modules have been resolved in this release:

- Unable to change regulatory domain – Fixed an issue that prevented the regulatory domain from being changed by the Laird Manufacturing Utility under some circumstances. (7529)
- Supplicant load failure – Fixed an issue that caused the supplicant load to fail during driver initialization under some circumstances. (7631)

Known Issues

The following are known issues when using an SD40 radio in this release:

- Support for Windows Embedded Compact 7 – WEC7 support is limited to the Laird supplicant only; third party mode is not supported when running in Windows Embedded Compact 7. (6823)
- Low signal strength – In a single antenna configuration, low signal strength is reported when scanning for BT devices (40NBT). When a single antenna is shared by Wi-Fi and Bluetooth, the antenna must be connected to the Aux antenna port. While Wi-Fi is active and the module is commanded to perform a BT scan, the driver attempts to resolve signal strength levels from the Main antenna port, which is not connected, resulting in incorrect reporting of the signal strength levels.
  - Workaround: Connect an antenna to both Main and Aux antenna ports. For devices where a single antenna is needed, the SD41NBT radio module, which is intended for single antenna applications, should be used. (4375)
- WL_LED_ACT is not enabled – WL_LED_ACT is not enabled with the LED global configuration option enabled and with the radio is connected to the network. (3745)
- Radio mode "G rates only" error – When the radio mode is set to *G rates only*, B and N rates are also advertised. (4003)
- OK button grayed out in EAP credentials dialog - After opening the EAP credentials dialog in SCU, the OK button for saving the credentials will remain grayed out until the password field is edited. (7395)

VERSION 3.5.3.8

Content

SDK	sdcsd40n	Supplicant	SCU	LCM	sdcgina	sdc_gina
3.5.0.20	3.5.3.10	3.5.25.3	3.5.9.60	4.3.48.248	3.5.1.4	3.5.2.2

scutray	sdc_bttray	sdc_bt	sdc_btss	sdc_wmpcontrol	sdcApplet	btwrlmgr
3.5.1.7	1.2.2.21	3.4.10.18	4.2.2.8	1.0.0.1	3.5.1.3	1.0.0.3

Resolved Issues

The following issues with the SD40 radio modules have been resolved in this release:

- SCU fails to create a profile for a mixed mode AP – Fixed an issue that caused SCU to refuse to create a profile for an AP that advertised support for both WPA2-TKIP and WPA2-AES. (7459)
- LCM Bluetooth configuration screen drawn incorrectly – Fixed an issue that caused the LCM Bluetooth configuration screen to be drawn incorrectly on some WEC7 devices (7429)
- LCM QVGA layout – Fixed several LCM UI issues that affected QVGA portrait mode devices. (6824, 6825, 6826)

Known Issues

The following are known issues when using an SD40 radio in this release:

- Support for Windows Embedded Compact 7 – WEC7 support is limited to the Laird supplicant only; third party mode is not supported when running in Windows Embedded Compact 7. (6823)
- Low signal strength – In a single antenna configuration, low signal strength is reported when scanning for BT devices (40NBT). When a single antenna is shared by Wi-Fi and Bluetooth, the antenna must be connected to the Aux antenna port. While Wi-Fi is active and the module is commanded to perform a BT scan, the driver attempts to resolve signal strength levels from the Main antenna port, which is not connected, resulting in incorrect reporting of the signal strength levels.
  - Workaround: Connect an antenna to both Main and Aux antenna ports. For devices where a single antenna is needed, the SD41NBT radio module, which is intended for single antenna applications, should be used. (4375)
- WL_LED_ACT is not enabled – WL_LED_ACT is not enabled with the LED global configuration option enabled and with the radio is connected to the network. (3745)
- Radio mode "G rates only" error – When the radio mode is set to *G rates only*, B and N rates are also advertised. (4003)
- OK button grayed out in EAP credentials dialog - After opening the EAP credentials dialog in SCU, the OK button for saving the credentials will remain grayed out until the password field is edited. (7395)

VERSION 3.5.3.7

Content

SDK	sdcsd40n	Supplicant	SCU	LCM	sdcgina	sdc_gina
3.5.0.20	3.5.3.10	3.5.25.3	3.5.9.59	4.3.48.247	3.5.1.4	3.5.2.2

scutray	sdc_bttray	sdc_bt	sdc_btss	sdc_wmpcontrol	sdcApplet	btwrlmgr
3.5.1.7	1.2.2.21	3.4.10.18	4.2.2.8	1.0.0.1	3.5.1.3	1.0.0.3

Resolved Issues

The following issues with the SD40 radio modules have been resolved in this release:

- Resume performance improvements – multiple changes to reduce resume time. (6651, 6784)
- Resume and On/Off improvements improved suspend/resume and on/off reliability on a number of platforms. (6653, 6709, 6258, 6800, 6808, 6803, 6812)
- Radio power state does not persist - Resolved an issue which could result in the radio being "On" upon a resume of the device even though the radio was set to "Off" prior to suspending the device. This issue only affects Windows Mobile devices using the Laird supplicant, but with the On/Off changes being performed via the "Wireless Manager" UI. (6718)
- Edge of coverage failure - Fixed an issue which could result in the radio being unable to connect if a connection is lost immediately after being established. (6835)
- ShellAPIReady - Updated the driver and the SDK to use the optional configurable timeout specified by the APIWaitTime value at [HKEY_LOCAL_MACHINE\Comm\SDCCF10G1\Parms\Configs\GlobalConfig] instead of a fixed 5 second timeout. This is only relevant on devices which are incorrectly built with the shell, but then prevent explorer.exe from loading. (6954)
- DFS Optimized – Improved DFS Optimized functionality after loss of connection; the DFS Optimized channel list is now rebuilt after a loss of connection. (6932)
- NVRAM file load failure – Fixed an issue that prevented the driver from loading the NVRAM file under rare conditions. (7216)
- Asterisk displayed in password field in new profiles – Changed SCU behavior to remove the asterisks that were previously displayed in the password field when creating a new profile from a scan. The password field is now blank on new profiles created from a scan where a password has not yet been set. (7120)
- OK button disabled in EAP TLS credentials dialog – Fixed an issue that prevented the user from saving EAP TLS credentials. (7361)
- LCM failure when scanning for Bluetooth services – Fixed an issue that caused an LCM crash on WEC7 devices when scanning for services supported by a connected Bluetooth device. (6827, 6995)

Known Issues

The following are known issues when using an SD40 radio in this release:

- Support for Windows Embedded Compact 7 – WEC7 support is limited to the Laird supplicant only; third party mode is not supported when running in Windows Embedded Compact 7. (6823)
- Low signal strength – In a single antenna configuration, low signal strength is reported when scanning for BT devices (40NBT). When a single antenna is shared by Wi-Fi and Bluetooth, the antenna must be connected to the Aux antenna port. While Wi-Fi is active and the module is commanded to perform a BT scan, the driver

attempts to resolve signal strength levels from the Main antenna port, which is not connected, resulting in incorrect reporting of the signal strength levels.
  - Workaround: Connect an antenna to both Main and Aux antenna ports. For devices where a single antenna is needed, the SD41NBT radio module, which is intended for single antenna applications, should be used. (4375)
- WL_LED_ACT is not enabled – WL_LED_ACT is not enabled with the LED global configuration option enabled and with the radio is connected to the network. (3745)
- Radio mode "G rates only" error – When the radio mode is set to *G rates only*, B and N rates are also advertised. (4003)
- OK button grayed out in EAP credentials dialog - After opening the EAP credentials dialog in SCU, the OK button for saving the credentials will remain grayed out until the password field is edited. (7395)

VERSION 3.5.1.8

Content

SDK	sdcsd40n	Supplicant	SCU	LCM	sdcgina	sdc_gina
3.5.0.19	3.5.1.46	3.5.24.0	3.5.9.56	4.3.48.237	3.5.0.3	3.5.2.0

scutray	sdc_bttray	sdc_bt	sdc_btss	sdc_wmpcontrol	sdcApplet	btwrlmgr
3.5.1.5	1.2.2.21	3.4.10.18	4.2.2.7	1.0.0.1	3.5.1.3	1.0.0.3

Resolved Issues

The following issues with the SD40 radio modules have been resolved in this release:

- 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)
- DFS Optimized connection issues – addressed an issue which prevented connections on channels 120,124,128,132,136, and 140 when using DFS optimized. (6934)
- Radio is unable to connect to intermediate band channels – Fixed an issue where devices operating in the FCC regulatory domain would not connect to U.S. intermediate band (U-NII 2 extended) channels. (6831)

Known Issues

The following are known issues when using an SD40 radio in this release:

- Support for Windows Embedded Compact 7 – WEC7 support is limited to the Laird supplicant only; third party mode is not supported when running in Windows Embedded Compact 7. (6823)
- Low signal strength – In a single antenna configuration, low signal strength is reported when scanning for BT devices (40NBT). When a single antenna is shared by Wi-Fi and Bluetooth, the antenna must be connected to the Aux antenna port. While Wi-Fi is active and the module is commanded to perform a BT scan, the driver attempts to resolve signal strength levels from the Main antenna port, which is not connected, resulting in incorrect reporting of the signal strength levels.
  - Workaround: Connect an antenna to both Main and Aux antenna ports. For devices where a single antenna is needed, the SD41NBT radio module, which is intended for single antenna applications, should be used. (4375)

- **WL_LED_ACT is not enabled** – WL_LED_ACT is not enabled with the LED global configuration option enabled and with the radio is connected to the network. (3745)
- **Radio mode "G rates only" error** – When the radio mode is set to *G rates only*, B and N rates are also advertised. (4003)

VERSION 3.5.1.6

Content

SDK	sdcsd40n	Supplicant	SCU	LCM	sdcgina	sdc_gina
3.5.0.19	3.5.1.41	3.5.24.0	3.5.8.50	4.3.48.237	3.5.0.3	3.5.2.0

scutray	sdc_bttray	sdc_bt	sdc_btss	sdc_wmpcontrol	sdcApplet	btwrlmgr
3.5.1.5	1.2.2.21	3.4.10.18	4.2.2.7	1.0.0.1	3.5.1.3	1.0.0.3

New and Enhanced Features

- **WEC7 x86** – Added WEC7 x86 binaries to the release package.
- **WEC7 ARMv5** – WEC7 ARM binaries are now built targeting ARMv5 instead of ARMv7, ensuring compatibility with all supported ARM processor types in WEC7
- **802.11d** – 802.11d functionality is now always enabled when WW regulatory domain is selected. (3777)
- **DFS** – DFS optimized now only uses the optimized list of channels created during driver load, preventing potential delays during roaming caused by the scanning of all DFS channels. (5875, 6233)
- **40 Series Rev 6 HW** - Added NVRAM and driver support for the new revision 6 of the 40 Series radios. The newly created SDC40NBT_0x06_NVRAM.txt file will need to be added to the appropriate .bib files for proper integration. (5914)

Resolved Issues

The following issues with the SD40 radio modules have been resolved in this release:

- **SCU reporting TX power in mW instead of percentage** – Fixed an issue where improper identification of the radio caused TX power to be displayed in mW when N rates were disabled. TX power should always be displayed as a percentage. (6519)
- **LCM profile isn't activated properly after an import** – An import all will now successfully activate the proper profile. (6523)
- **Wireless Third Party Config -** Fixed an issue on some WM653 platforms using third party mode. If the radio was turned off using Wireless Manager prior to suspending the device, enabling the radio after resuming the device could fail. (6499)
- **SDC Bluetooth** – Fixed an issue that caused Bluetooth SS1 stack initialization to fail on WEC7 platforms. (6379)
- **Radio mode "B rates only" error** – Fixed a bug which could result in G (OFDM) rates being included in probe requests when the radio mode is explicitly set to "B rates only". (4833, 4219)
- **Failure to associate at resume** – Fixed an issue where the driver was sending an unsolicited Deauth and got stuck in a Join state. (5996)
- **Global BG channel set value is incorrect –** Reverted a SDK change that resulted in the value of the global BG Channel Set property being displayed as Custom even though the full set of BG channels was selected. (6090, 5918)

- **Custom BG channel does not display correctly –** Channel button added. When Custom is selected under BG Channel Set, this button appears. This button brings up the custom channels dialog. (6091)
- **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. This also caused the LCM to display the security type for an AP with this IE as WPA2 TKIP instead of WPA2 AES. A profile created from this item in the scan list would not connect to the AP. (5324)
- **SSD41NBT/MSD41NBT driver fails to load when CCX is disabled –** Updated the SDC40NBT_0x04_NVRAM file to version 4.220.55.008. This change fixes a compatibility issue when the SDC40NBT_AGN_NOCCX.bin is used. This issue applies only to the MSD41NBT/SSD41NBT radio module. (6121, 5093)
- **11A only mode can no longer scan** – Fixed an issue where probes were no longer being set by adding code to prevent authentication and security mode changes while a scan is already in progress. (5356)
- **Failure to connect on resume** - Improved connectivity after a resume when using WZC. (5585, 5963)
- **Low TX power** – Fixed an issue that resulted in somewhat reduced transmit power levels in the FCC regulatory domain. (5562)
- **SRU fails to run N rate test** – Fixed an issue which could prevent some versions of the SRU from testing N rates. (6558)
- **Laird Bluetooth Stack may fail to work correctly when CID integration is used** – Relocated the SS1 components to the FILES section so they can be loaded in either USER or KERNEL space. (6788)

Known Issues

The following are known issues when using an SD40 radio in this release:

- **Radio is unable to connect to intermediate band channels** – Devices operating in the FCC regulatory domain will not connect to U.S. intermediate band (U-NII 2 extended) channels. (6831)
- **Support for Windows Embedded Compact 7** – WEC7 support is limited to the Laird supplicant only; third party mode is not supported when running in Windows Embedded Compact 7. (6823)
- **Low signal strength –** In a single antenna configuration, low signal strength is reported when scanning for BT devices (40NBT). When a single antenna is shared by Wi-Fi and Bluetooth, the antenna must be connected to the Aux antenna port. While Wi-Fi is active and the module is commanded to perform a BT scan, the driver attempts to resolve signal strength levels from the Main antenna port, which is not connected, resulting in incorrect reporting of the signal strength levels.
  - **Workaround**: Connect an antenna to both Main and Aux antenna ports. For devices where a single antenna is needed, the SD41NBT radio module, which is intended for single antenna applications, should be used. (4375)
- **WL_LED_ACT is not enabled** – WL_LED_ACT is not enabled with the LED global configuration option enabled and with the radio is connected to the network. (3745)
- **Radio mode "G rates only" error** – When the radio mode is set to *G rates only*, B and N rates are also advertised. (4003)

PREVIOUS RELEASE – VERSION 3.5.0.19

Resolved Issues

The following issues with the SD40 radio modules have been resolved in **v3.5.0.19**:

- **GetIfEntry() dwSpeed always returns zero** – Fixed a bug that caused the dwSpeed parameter of GetIfEntry()to always return zero. (6450)

- **Sdc_bt fails to load on Window Mobile 6.5 Platforms** – Fixed an issue that prevented sdc_bt.dll from loading on WM6.5 platforms. This issue affected only WM6.5, and has been present only in the 3.5.0.x releases. (6576)
- **SDC Bluetooth** – Fixed an issue which resulted in a data abort while rendering debug output if a Bluetooth API call failed. (6565)

Known Issues

The following are known issues when using an SD40 radio with **v3.5.0.19**:

- **Low signal strength –** In a single antenna configuration, low signal strength is reported when scanning for BT devices (40NBT). When a single antenna is shared by Wi-Fi and Bluetooth, the antenna must be connected to the Aux antenna port. While Wi-Fi is active and the module is commanded to perform a BT scan, the driver attempts to resolve signal strength levels from the Main antenna port, which is not connected, resulting in incorrect reporting of the signal strength levels.
  - **Workaround**: Connect an antenna to both Main and Aux antenna ports. For devices where a single antenna is needed, the SD41NBT radio module, which is intended for single antenna applications, should be used. (4375)
- **WL_LED_ACT is not enabled** – WL_LED_ACT is not enabled with the LED global configuration option enabled and with the radio is connected to the network. (3745)
- **Radio mode "B rates only" error** – When the radio mode is set to *B rates only*, G and N rates are also advertised. (4219)
- **Radio mode "G rates only" error** – When the radio mode is set to *G rates only*, B and N rates are also advertised. (4003)
- **802.11d** – 802.11d is not currently supported. (3777)
- **Failure to associate at resume** – It is possible for the driver to send an unsolicited De-auth while associating at resume and get stuck. The issue is rare, and is corrected on the following resume. (5996)
- **Global BG channel set value is incorrect –** By default, the value of the global BG Channel Set property is displayed as Custom even though the full set of BG channels is enabled. (6090)
- **Custom BG channel does not display correctly –** When setting the BG Channel Set to a custom value in LCM, the custom channel dialog does not appear if the BG Channel Set value is already set to Custom. If the BG Channel Set value is switched to another value and then back to Custom, the channel dialog appears. (6091)
- **GetBSSIDList() reports incorrect wepType –** The function GetBSSIDList() in the SDK incorrectly reports wepType = WPA2_TKIP instead of WPA2_AES when the RSN IE includes an 8021X AKM, and does not include a CCKM AKM. This causes the LCM to display the security type for an AP with this IE as WPA2 TKIP instead of WPA2 AES. A profile created from this item in the scan list will not connect to the AP. (5324)
- **SSD41NBT/MSD41NBT driver fails to load when CCX is disabled –** The driver fails to load when CCX is disabled and one or more A band channels is enabled. This issue applies only to the MSD41NBT/SSD41NBT radio module. (6121)

PREVIOUS RELEASE – VERSION 3.5.0.17

Resolved Issues

The following issues with the SD40 radio modules have been resolved in **v3.5.0.17**:

- **Bluetooth firmware patch download fails** – Fixed a bug introduced in v3.5.0.13 that prevented the Bluetooth firmware patch from downloading due to an incorrect baud rate. (6272)

- **Sdc_bt.dll data abort** – Resolved an issue that caused sdc_bt.dll to generate a data abort when loaded in a Windows Embedded Compact 7 debug image. (6309)
- **Platform Builder Integration** – Resolved an issue that prevented the Bluetooth components from being properly integrated into the OS image using the Catalog Item Distribution.

Known Issues

The following are known issues when using an SD40 radio with **v3.5.0.17**:

- **Low signal strength –** In a single antenna configuration, low signal strength is reported when scanning for BT devices (40NBT). When a single antenna is shared by Wi-Fi and Bluetooth, the antenna must be connected to the Aux antenna port. While Wi-Fi is active and the module is commanded to perform a BT scan, the driver attempts to resolve signal strength levels from the Main antenna port, which is not connected, resulting in incorrect reporting of the signal strength levels.
  - **Workaround**: Connect an antenna to both Main and Aux antenna ports. For devices where a single antenna is needed, the SD41NBT radio module, which is intended for single antenna applications, should be used. (4375)
- **WL_LED_ACT is not enabled** – WL_LED_ACT is not enabled with the LED global configuration option enabled and with the radio is connected to the network. (3745)
- **Radio mode "B rates only" error** – When the radio mode is set to *B rates only*, G and N rates are also advertised. (4219)
- **Radio mode "G rates only" error** – When the radio mode is set to *G rates only*, B and N rates are also advertised. (4003)
- **802.11d** – 802.11d is not currently supported. (3777)
- **Failure to associate at resume** – It is possible for the driver to send an unsolicited De-auth while associating at resume and get stuck. The issue is rare, and is corrected on the following resume. (5996)
- **Global BG channel set value is incorrect –** By default, the value of the global BG Channel Set property is displayed as Custom even though the full set of BG channels is enabled. (6090)
- **Custom BG channel does not display correctly –** When setting the BG Channel Set to a custom value in LCM, the custom channel dialog does not appear if the BG Channel Set value is already set to Custom. If the BG Channel Set value is switched to another value and then back to Custom, the channel dialog appears. (6091)
- **GetBSSIDList() reports incorrect wepType –** The function GetBSSIDList() in the SDK incorrectly reports wepType = WPA2_TKIP instead of WPA2_AES when the RSN IE includes an 8021X AKM, and does not include a CCKM AKM. This causes the LCM to display the security type for an AP with this IE as WPA2 TKIP instead of WPA2 AES. A profile created from this item in the scan list will not connect to the AP. (5324)
- **SSD41NBT/MSD41NBT driver fails to load when CCX is disabled –** The driver fails to load when CCX is disabled and one or more A band channels is enabled. This issue applies only to the MSD41NBT/SSD41NBT radio module. (6121)

PREVIOUS RELEASE – VERSION 3.5.0.13

New and Enhanced Features

- **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. (5143)
- **Reduced scan list size –** Changed the default scan list size limit to 16 entries from the previous default of 64. This change increases WZC responsiveness when populating the scan list in areas where there are many APs.

The list size can be adjusted via the registry by setting the GlobalConfig\MaxBssListSize to the desired value. The maximum size is still 64 with a minimum size of 1. (5602)

- **Bluetooth Tray Icon Functionality** – Added support for enabling/disabling bluetooth directly from the tray icon. Clicking the icon will now launch LCM. The LCM launch path can be configured using HKEY_LOCAL_MACHINE\Comm\SDCCF10G1\Parms\Configs\GlobalConfig\AppLocation. (4467, 5257)
- **LCM tab height –** When resizing the LCM, the integrator can set the height of the tab controls with a registry value. The new registry value is a DWORD located at [HKEY_LOCAL_MACHINE\Software\SCU] and called "tabHeight". This new value, if it exists, sets the tab height in pixels. (5307)

Resolved Issues

The following issues with the SD40 radio modules have been resolved in **v3.5.0.13**:

- **ActiveSync connect/disconnect** – Resolved numerous issues with connection failures after using ActiveSync on some platforms. (4526, 4370, 4539, 5428, 5453, 5586)
- **40L test firmware does not load properly** – Fixed an issue that prevented the 40L manufacturing firmware from loading properly, which prevented the SRU utility from operating correctly. (5781)
- **40NBT SRU TX power** – Fixed an issue that caused the transmit power level to be slightly high the first time a TX power test was initiated from the SRU. (2319)
- **Rapid profile changes cause deadlock** – Fixed a deadlock that could occur when making rapid profile changes. (4898)
- **Scan delays** – Fixed an issue that could delay background scan completion in some circumstances. (5233)
- **Connection drop while roaming on WEC7** – Fixed an issue that caused the connection to drop while roaming on WEC7 devices on rare occasions. (5414)
- **Ping delays while roaming on WEC7** – Fixed an issue that caused unnecessary ping delays while roaming
- **Single channel scanned when configured for A rates only** – Fixed an issue that could result in the radio scanning only a single channel when configured for A rates only. (5518)
- **Short guard interval –** Re-enabled support for Short Guard Interval.
- **Extremely slow Wi-Fi response when using WZC** – Fixed an issue with a scan pending flag never being cleared. This resulted in extremely long scans and unnecessary miniport resets when using Wireless Zero Config. This same issue caused a data abort in NDIS on some platforms, which resulted in a black screen at resume. (5602, 6015)
- **Failure to connect at resume** – Some platforms occasionally failed to connect after resume. The problem usually occurred when using the Wireless Zero Config supplicant instead of the Laird supplicant. (5732, 5763, 5801, 5910)
- **PMK caching broken** – Fixed OPMK operation. (5424)
- **Failure to load driver on boot** – Fixed an issue that caused the driver load to fail at boot on some platforms on rare occasions. Restored previous functionality that waits indefinitely for the shell and GWES APIs to become ready if those APIs are registered on the system. This prevents a crash that can occur in cases where the shell is delayed at system boot (typically in first boot scenarios). (5138)
  - **Solution**: Added a registry based timeout override for use by platforms that have included the shell in their platform configuration, but prevented it from running. In this scenario, the shell and GWES APIs are registered, but will never become ready since the shell does not run. The registry based override allows the driver load to continue after the specified delay. The new registry key is located at [HKEY_LOCAL_MACHINE\Comm\SDCCF10G1\Parms\Configs\GlobalConfig] and named "APIWaitTime". It should be set to the number of milliseconds to wait before continuing. This value should only be set on platforms that have prevented a shell from running.
- **Failure to pass data after CCKM Fast Roam** – Fixed an issue that prevented the SD40NBT radio from passing data after performing a CCKM Fast Roam. This problem occurred only when the A band was enabled, and

does not affect the SD40L.
Note: This issue has been present since v3.4.13.57. (6076)

- SCU crash – Fixed SCU crash when certificate store path length is greater than 39 characters. (6081, 6074).
- Failure to connect when roaming in edge of coverage – Fixed an issue that prevented the radio from connecting after a failed roam in edge of coverage scenarios. (6105)

Known Issues

The following are known issues when using an SD40 radio with **v3.5.0.13**:

- Low signal strength – In a single antenna configuration, low signal strength is reported when scanning for BT devices (40NBT). When a single antenna is shared by Wi-Fi and Bluetooth, the antenna must be connected to the Aux antenna port. While Wi-Fi is active and the module is commanded to perform a BT scan, the driver attempts to resolve signal strength levels from the Main antenna port, which is not connected, resulting in incorrect reporting of the signal strength levels.
  - Workaround: Connect an antenna to both Main and Aux antenna ports. For devices where a single antenna is needed, the SD41NBT radio module, which is intended for single antenna applications, should be used. (4375)
- WL_LED_ACT is not enabled – WL_LED_ACT is not enabled with the LED global configuration option enabled and with the radio is connected to the network.
- Radio mode "B rates only" error – When the radio mode is set to *B rates only*, G and N rates are also advertised. (4219)
- Radio mode "G rates only" error – When the radio mode is set to *G rates only*, B and N rates are also advertised. (4003)
- 802.11d – 802.11d is not currently supported. (3777)
- Failure to associate at resume – It is possible for the driver to send an unsolicited De-auth while associating at resume and get stuck. The issue is rare, and is corrected on the following resume. (5996)
- Global BG channel set value is incorrect – By default, the value of the global BG Channel Set property is displayed as Custom even though the full set of BG channels is enabled. (6090)
- Custom BG channel does not display correctly – When setting the BG Channel Set to a custom value in LCM, the custom channel dialog does not appear if the BG Channel Set value is already set to Custom. If the BG Channel Set value is switched to another value and then back to Custom, the channel dialog appears. (6091)
- GetBSSIDList() reports incorrect wepType – The function GetBSSIDList() in the SDK incorrectly reports wepType = WPA2_TKIP instead of WPA2_AES when the RSN IE includes an 8021X AKM, and does not include a CCKM AKM. This causes the LCM to display the security type for an AP with this IE as WPA2 TKIP instead of WPA2 AES. A profile created from this item in the scan list will not connect to the AP.
- SSD41NBT/MSD41NBT driver fails to load when CCX is disabled – The driver fails to load when CCX is disabled and one or more A band channels is enabled. This issue applies only to the MSD41NBT/SSD41NBT radio module. (6121)

PREVIOUS RELEASE – VERSION 3.4.15.79

New and Enhanced Features

The following features in **v3.4.15.79** were not supported in previous versions of Laird software for the SD40 radios.

- **Disable/Enable functionality added to BT tray icon** – Added enable/disable functionality to Laird Bluetooth tray icon. Also, includes launching the LCM.exe from the icon by single-clicking the tray icon. (4467)
- **Configure LCM X/Y load position –** Added support for loading the LCM to a specific X/Y location. Two new registry keys are created and move the main window to the corresponding X and Y coordinates. (5227)
  - Registry Keys:
    [HKLM\Software\Summit\SCU]
    DWORD: screenX <value>
    DWORD: screenY <value>
- **Added ability to select custom BG channel set** – Added option to select custom BG channels via the LCM (3502)

Resolved Issues

The following issues with the SD40 radio modules have been resolved in **v3.4.15.79**:

- **Roam failure** – Fixed an issue where roaming failed when firmware events were received out of sequence. (5077)
- **Roaming may take longer than necessary when Deauth is received during Authentication** – Fixed an issue where roaming took longer than necessary if a De-auth packet was received during authentication. (5350)
- **Association robustness** – Identified a handshaking failure that can occur during the association phase if the SD bus host controller incorrectly uses cached memory accesses, resulting in the client driver receiving stale IEs. Added a work around to detect and mitigate the failure. (5008)
- **Unstable transmit** – Fixed an issue that caused a high rate of transmission failures (5133)
- **Slow ping response times** – Fixed several issues that were causing slow ping response times and potential instability (5299)
- **Installed certificate incorrectly displayed on WEC7** – For EAP-TLS and PEAP-TLS when a user would open the Certificate store but not select a certificate and then re-open the Manage Profiles window, the User Cert setting said "Installed-Cert" instead of "None". (4988)
- **Network-EAP authentication not supported** – This issue is with the Auth type LEAP that is configured under the SCU profile radio settings and not LEAP as an EAP Type. If the Auth type LEAP (Network-EAP) is set in a SCU profile for an SD40 radio, the radio is configured to use Open authentication rather than Network-EAP. This does not cause an issue as long as Open with EAP is configured for an SSID on a Cisco access point, which is a Cisco-recommended setting any time EAP authentication support is configured on an AP.
  - **Solution**: Resolved by removing LEAP from the available authentication types. (4316)
- **Wrong encryption setting when creating a profile** – Fixed an issue that caused the wrong encryption type to be set on the profile page when a user would scan for an AP and create a new profile. (3909)

Known Issues

The following are known issues when using an SD40 radio with **v3.4.15.79**:

- **ActiveSync connect/disconnect** – With the "Allow data connections on device when connected to PC" option disabled (unchecked) in the ActiveSync / Mobile Device Center Connection Settings, the SD40 radio may have issues reconnecting after a connect and disconnect of the device to the PC via ActiveSync. This behavior may vary depending on the device, but the following cases have been seen during testing:

- **Wi-Fi connection issues** – After connecting/disconnecting the device via ActiveSync, the device reconnects to the network, but following a subsequent Suspend/Resume cycle it no longer connects. A device reset is required in order for the radio to connect again. (4370)
- **Driver connection issues –** After connecting/disconnecting the device via ActiveSync, the Wi-Fi interface is re-enabled, but fails to connect. A suspend/resume or reset of the device allows proper connection. (4526)
- **Workaround:** Enable (check) the **Allow data connections on device when connected to PC** option in the ActiveSync / Mobile Device Center Connection Settings so that the radio on the device is not disabled when ActiveSync is connected.

- **Low signal strength –** In a single antenna configuration, low signal strength is reported when scanning for BT devices (40NBT). When a single antenna is shared by Wi-Fi and Bluetooth, the antenna must be connected to the Aux antenna port. While Wi-Fi is active and the module is commanded to perform a BT scan, the driver attempts to resolve signal strength levels from the Main antenna port, which is not connected, resulting in incorrect reporting of the signal strength levels.
  - **Workaround**: Connect an antenna to both Main and Aux antenna ports. For devices where a single antenna is needed, the SD41NBT radio module, which is intended for single antenna applications, should be used. (4375)
- **WL_LED_ACT is not enabled** – WL_LED_ACT is not enabled with the LED global configuration option enabled and with the radio is connected to the network.
- **Radio mode "B rates only" error** – When the radio mode is set to *B rates only*, G and N rates are also advertised. (4219)
- **Radio mode "G rates only" error** – When the radio mode is set to *G rates only*, B and N rates are also advertised. (4003)
- **802.11d** – 802.11d is not currently supported. (3777)
- **Failure to connect at resume** – Some platforms occasionally fail to connect after resume, most likely when using the Wireless Zero Config supplicant instead of the Laird supplicant. (5732, 5763, 5801, 5910, 5996)
- **40L test firmware does not load properly** – The 40L manufacturing firmware does not load properly, which prevents the SRU utility from operating correctly. (5781)
- **Rapid profile changes cause deadlock –** Rapid profile changes occasionally result in a driver hang. (4898)
- **Failure to load driver on boot** – The driver fails to load properly at boot on some platforms on rare occasions. The driver loads correctly after a subsequent suspend/resume. When this occurs, it tends to happen at first boot after a factory reset. (5138)
- **Black screen at resume –** A data abort can occur on a thread in the NDIS stack at resume that affects the power management thread. If the power management thread gets stuck or crashes, other devices can fail to power up including the display. (6015)

PREVIOUS RELEASE – VERSION 3.4.14.67

Resolved Issues

The following issues when using the SD40 radio modules have been resolved in **v3.4.14.67**:

- **Tray icon present when turned off in global configuration –** Previously, when the tray icon was turned off in the global configuration, it would disappear from the system tray but reappear following a reboot of the device, even though it was still off in the global configuration. This issue has been resolved. (4382)
- **N radio modes display in SCU/LCM** – SCU/LCM now displays N radio modes for N radios. (4736)
- **WM 6.5 iPAQ Thirdparty config issue –** This release adds stabilization time to prevent an *externally disabled* status that sometimes occurred when repeatedly enabling/disabling the radio. (4738)
- **Secure stack corruption exception –** Prior to this release, secure stack exceptions were occurring during scanning on WEC7 platforms. This is no longer an issue. (4808)

- **Debug level always set to disable –** Previously, the debug level on the Diagnostic page in LCM was always set to disable in the 3.4.13.45 cab. This issue has been resolved.(4824)
- **Radio modes not present –** In SCU/LCM, radio modes were not present upon creation of a new profile. This issue is resolved with this release.(4931)
- **SCU/LCM crash –** Before this release, SCU was crashing upon initialization. The source and destination strings were reversed. This is has been fixed. (5021)
- **Secure stack exception –** The SD40 was previously experiencing a secure stack exception during Enable/Disable processing from LCM. This is no longer an issue. (5090)
- **LCM screen size –** Although the customer was able to enlarge the size/resolution of LCM, the buttons and dropboxes were not being resized. The customer can now adjust these as well. (5103)
- **sdc_gina blocks forever waiting for ShellApiSetReady –** With this release, we've provided a modified sdc_gina which does not wait for an infinite amount of time. (5138)
- **Wireless manager disabling –** Suspend/Resume cycles of a micro PDA were causing the wireless manager to disable. This issue has been fixed. (5150) (Duplicate issues: 5062, 4812, 5140)
- **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)

Known Issues

The following are known issues when using an SD40 radio with **v3.4.14.67**:

- **ActiveSync connect/disconnect** – With the "Allow data connections on device when connected to PC" option disabled (unchecked) in the ActiveSync / Mobile Device Center Connection Settings, the SD40 radio may have issues reconnecting after a connect and disconnect of the device to the PC via ActiveSync. This behavior may vary depending on the device, but the following cases have been seen during testing:
  - **Wi-Fi connection issues** – After connecting/disconnecting the device via ActiveSync, the device reconnects to the network, but following a subsequent Suspend/Resume cycle it no longer connects. A device reset is required in order for the radio to connect again. (4370)
  - **Driver connection issues –** After connecting/disconnecting the device via ActiveSync, the Wi-Fi interface is re-enabled, but fails to connect. A suspend/resume or reset of the device allows it to connect correctly. (4526)
  - **Workaround:** Enable (check) the **Allow data connections on device when connected to PC** option in the ActiveSync / Mobile Device Center Connection Settings so that the radio on the device is not disabled when ActiveSync is connected.
- **Low signal strength –** In a single antenna configuration, low signal strength is reported when scanning for BT devices (40NBT). When a single antenna is shared by Wi-Fi and Bluetooth, the antenna must be connected to the Aux antenna port. While Wi-Fi is active and the module is commanded to perform a BT scan, the driver attempts to resolve signal strength levels from the Main antenna port, which is not connected, resulting in incorrect reporting of the signal strength levels.
  - **Workaround**: Connect an antenna to both Main and Aux antenna ports. For devices where a single antenna is needed, the SD41NBT radio module, which is intended for single antenna applications, should be used. (4375)
- **Network-EAP authentication not supported** – This issue is with the Auth type LEAP that is configured under the SCU profile radio settings and not LEAP as an EAP Type. If the Auth type LEAP (Network-EAP) is configured in a SCU profile for an SD40 radio, the radio is configured to use Open authentication rather than Network-EAP. This does not cause an issue as long as Open with EAP is configured for an SSID on a Cisco access point, which is a Cisco-recommended setting any time EAP authentication support is configured on an AP. (4316)

- **WL_LED_ACT is not enabled** – WL_LED_ACT is not enabled with the LED global configuration option enabled and with the radio is connected to the network.
- **Radio mode "B rates only" error** – When the radio mode is set to *B rates only*, G and N rates are also advertised. (4219)
- **Radio mode "G rates only" error** – When the radio mode is set to *G rates only*, B and N rates are also advertised. (4003)
- **802.11d** – 802.11d is not currently supported. (3777)

PREVIOUS RELEASE – VERSION 3.4.13.57

Resolved Issues

The following issues when using the SD40 radio modules have been resolved in **v3.4.13.57**:

- **Reconnection delay –** Prior to this release, there was a long delay in reconnecting on a profile switch or following the failure of an initial connect attempt. If the initial connection attempt to a network failed, the client would not attempt to connect again for 60 seconds. The delay did not occur if the failed connection attempt was on a roam. This is no longer an issue. (4373)
- **LCM – BT device name** – Prior to this release, changing the device name required a BT disable/enable to be advertised during discovery mode. (4483)
- **LCM Layout issue** – Support is now available for portrait and landscape mode rotation (CE 6/7). (4556)
- **LCM RSSI issue** – RSSI now displays in Ad Hoc mode. (4564)
- **Wi-Fi initialization failure** – Prior to this release, Wi-Fi initialization failure would occur when the radio was enabled or disabled by SCU/LCM when no Wi-Fi connection was present. This issue has been resolved. (4857)
- **LCM screen size –** Two registry keys have been added that allow the LCM windows to be resized. (4855)
- **5GhzChanMask reg value –** With this release, LCM now hides A rates if the 5GhzChanMask registry value is set to zero. (4838)

Known Issues

The following are known issues when using an SD40 radio with **v3.4.13.57**:

- **ActiveSync connect/disconnect** – With the "Allow data connections on device when connected to PC" option disabled (unchecked) in the ActiveSync / Mobile Device Center Connection Settings, the SD40 radio may have issues reconnecting after a connect and disconnect of the device to the PC via ActiveSync. This behavior may vary depending on the device, but the following cases have been seen during testing:
  - **Wi-Fi connection issues** – After connecting/disconnecting the device via ActiveSync, the device reconnects to the network, but following a subsequent Suspend/Resume cycle it no longer connects. A device reset is required in order for the radio to connect again. (4370)
  - **Driver connection issues –** After connecting/disconnecting the device via ActiveSync, the Wi-Fi interface is re-enabled, but fails to connect. A suspend/resume or reset of the device allows it to connect correctly. (4526)
  - **Workaround:** Enable (check) the **Allow data connections on device when connected to PC** option in the ActiveSync / Mobile Device Center Connection Settings so that the radio on the device is not disabled when ActiveSync is connected.
- **Low signal strength –** In a single antenna configuration, low signal strength is reported when scanning for BT devices (40NBT). When a single antenna is shared by Wi-Fi and Bluetooth, the antenna must be connected to the Aux antenna port. While Wi-Fi is active and the module is commanded to perform a BT scan, the driver attempts to resolve signal strength levels from the Main antenna port, which is not connected, resulting in incorrect reporting of the signal strength levels.

- **Workaround**: Connect an antenna to both Main and Aux antenna ports. For devices where a single antenna is needed, the SD41NBT radio module, which is intended for single antenna applications, should be used. (4375)

- **Network-EAP authentication not supported** – This issue is with the Auth type LEAP that is configured under the SCU profile radio settings and not LEAP as an EAP Type. If the Auth type LEAP (Network-EAP) is configured in a SCU profile for an SD40 radio, the radio is configured to use Open authentication rather than Network-EAP. This does not cause an issue as long as Open with EAP is configured for an SSID on a Cisco access point, which is a Cisco-recommended setting any time EAP authentication support is configured on an AP. (4316)
- **WL_LED_ACT is not enabled** – WL_LED_ACT is not enabled with the LED global configuration option enabled and with the radio is connected to the network.
- **Radio mode "B rates only" error** – When the radio mode is set to *B rates only*, G and N rates are also advertised. (4219)
- **Radio mode "G rates only" error** – When the radio mode is set to *G rates only*, B and N rates are also advertised. (4003)
- **802.11d** – 802.11d is not currently supported. (3777)
- **Tray icon present when turned off in global configuration –** When the tray icon is turned off in the global configuration, it disappears from the system tray but reappears following a reboot of the device, even though it is still off in the global configuration. (4382)
  - **Solution:** Update sdc_gina.exe to v3.4.1.7 or higher.
- **LCM** – **BT device name** – Changing the device name requires a BT disable/enable to be advertised during discovery mode. (4483)

PREVIOUS RELEASE – VERSION 3.4.13.36

New and Enhanced Features

The following features in **v3.4.13.36** were not supported in previous versions of Laird software for the SD40 radios.

- **SD40NBT/SD41NBT Hardware Revision 0x04** – New radio modules supported by unique NVRAM files. The NVRAM file, SDC40NBT_NVRAM.txt, has been replaced by two new files
  - SDC40NBT_0x03_NVRAM.txt
  - SDC40NBT_0x04_NVRAM.txt

  These two NVRAM files must be integrated or driver will fail to initialize the radio module. The radio driver detects the hardware revision and loads the appropriate NVRAM file.
- **Scan Results Debug Output** – Setting and clearing bit 0x8 in the *dbgLevel* registry entry enables and disables scan result dumps to the debug output, be it a log file or serial port. Recommend using this feature instead of going to level 3 debug output. Debug level 2 output plus scan results to a log file would use a "dbgLevel" value of 0xA. Debug level 2 output plus scan results to a device's debug serial port would use a "dbgLevel" value of 0xE.
- **Debug Output** – Enhanced.

Resolved Issues

The following issues when using the SD40 radio modules have been resolved in **v3.4.13.36**:

- **40NBT ignores DFS Channels Off setting in the global config** – The 40NBT previously scanned and connected on DFS channels even with the DFS Channels property in the global config set to **Off**. The 40NBT no longer scans or connects on DFS channels when DFS Channels are set to Off. (3705)

- **Encryption setting error –** Previously, there was an incorrect encryption setting when creating a profile. This issue has been resolved. (3909)
- **Profile option errors** – When logged into SCU and accessing the Profile tab, the New, Rename, and Delete profile options were unavailable (grayed out). Accessing a different tab and then returning to the Profile tab made these options available. This issue has been fixed. (4039)
- **No scan results from WZC scan or SCU scan –** In an environment where a large number of BSSIDs (greater than 64) are found during a scan, attempting to connect using WZC or initiating a SCU scan results in an incomplete scan and no scan results are available. In SCU there is no scan list available, so a network cannot be selected and a profile cannot be configured using the scan list. When attempting to connect using WZC, this results in the client never connecting. This issue has been resolved. (4377)
- **Auto Profile** – Previously, if the user turned on Auto Profile when the Default profile was the current profile, Auto Profile would not work. Now, when initializing Auto Profile the software checks to see whether the current profile is one of the selected profiles in the Auto Profile set of profiles and, if it is not, the current profile is changed to the first profile in the set of Auto Profiles.

Note: The Default profile is not selectable when selecting profiles for the Auto Profile set so it should never be used by the Auto Profile functionality.

- **Incorrect MAC address** – The source of the incorrect MAC address 00:17:23:00:00:09 in 40L radio has been found and commented out. (4379)
  - **Solution:** Must integrate new SDC40L_NVRAM.txt.
- **Profile update issue –** (SSD40NBT) With the import/export function, the active profile would not previously update. This is no longer an issue. (4427)
- **Reconnection issue –** The previous issue of the radio not reconnecting after being out of coverage for a period of time has been fixed. (4464)
- **Build identifier –** SCU now has a method to identify the overall build as opposed to just using the driver version or SCU version. (4482)
- **Data Abort** – Several Data Abort issues have been resolved. (4542)
- **Suspend / Resume (SR)** – The following suspend/resume issues have been resolved:
  - Previously, the radio would turn on when it should remain off. Upon resume, the radio now remains off if it was turned off before the device was suspended.
  - Upon resume, device backlight and display were noticeably delayed in turning on. This delay no longer exists after spawning a worker thread to carry out the task of making the power state transition.
  - Previously, the radio would not connect upon resume. Conditions existed where interrupts could be left disabled, eliminating those conditions and enabling interrupts resolved this issue.
  - Previously, the radio would fail to initialize on resume. When the SD card is deselected by the OS, attempts to access the SD radio over the SD bus must be immediately stopped until reinitialization of the SD I/O controller.
  - Error handling, attempts and retries in code responsible for power state transitions have been improved.

Note: Due to power management implementation differences, some of the listed suspend/resume issues may still occur on some devices when using build 3.4.13.36.

Known Issues

The following are known issues when using an SD40 radio with **v3.4.13.36**:

- **ActiveSync connect/disconnect** – With the "Allow data connections on device when connected to PC" option disabled (unchecked) in the ActiveSync / Mobile Device Center Connection Settings, the SD40 radio may have

issues reconnecting after a connect and disconnect of the device to the PC via ActiveSync. This behavior may vary depending on the device, but the following cases have been seen during testing:

  - **Wi-Fi connection issues** – After connecting/disconnecting the device via ActiveSync, the device reconnects to the network, but following a subsequent Suspend/Resume cycle it no longer connects. A device reset is required in order for the radio to connect again. (4370)
  - **Driver connection issues –** After connecting/disconnecting the device via ActiveSync, the Wi-Fi interface is re-enabled, but fails to connect. A suspend/resume or reset of the device allows it to connect correctly. (4526)
  - **Workaround:** Enable (check) the **Allow data connections on device when connected to PC** option in the ActiveSync / Mobile Device Center Connection Settings so that the radio on the device is not disabled when ActiveSync is connected.

- **Reconnection delay –** There is a long delay in reconnecting on a profile switch or following the failure of an initial connect attempt. If the initial connection attempt to a network fails, the client does not attempt to connect again for 60 seconds. The delay does not occur if the failed connection attempt is on a roam.

  This occurs most often when switching profiles on a Cisco controller, but can occur on any initial connect to a network such as device boot and resume from suspend. With a Cisco controller, the default behavior is to impose a delay in allowing clients to switch from one SSID to another. The delay is enforced by the controller intentionally not responding to the client's initial association request when it has been connected to one SSID on a controller and is switching to another. In the profile switching case, the issue occurs each time the device is switched to a new profile on the same Cisco controller if the *Fast SSID change* option is set to Disabled (default).

  For other possible cases, the connection failure can occur as a part of normal wireless network conditions such connecting at the edge of coverage, RF contention, or AP behaviors such as off channel scanning. (4373)

  - **Workaround:** For the profile switching case, the likelihood of the issue occurring is greatly reduced if the option *Fast SSID change* on the controller configuration page is set to Enabled; however it is possible that the reconnect delay could still occur under normal wireless network operating conditions.

- **Low signal strength –** In a single antenna configuration, low signal strength is reported when scanning for BT devices (40NBT). When a single antenna is shared by Wi-Fi and Bluetooth, the antenna must be connected to the Aux antenna port. While Wi-Fi is active and the module is commanded to perform a BT scan, the driver attempts to resolve signal strength levels from the Main antenna port, which is not connected, resulting in incorrect reporting of the signal strength levels.

  - **Workaround**: Connect an antenna to both Main and Aux antenna ports. For devices where a single antenna is needed, the SD41NBT radio module, which is intended for single antenna applications, should be used. (4375)

- **Network-EAP authentication not supported** – This issue is with the Auth type LEAP that is configured under the SCU profile radio settings and not LEAP as an EAP Type. If the Auth type LEAP (Network-EAP) is configured in a SCU profile for an SD40 radio, the radio is configured to use Open authentication rather than Network-EAP. This does not cause an issue as long as Open with EAP is configured for an SSID on a Cisco access point, which is a Cisco-recommended setting any time EAP authentication support is configured on an AP. (4316)
- **WL_LED_ACT is not enabled** – WL_LED_ACT is not enabled with the LED global configuration option enabled and with the radio is connected to the network.
- **Radio mode "B rates only" error** – When the radio mode is set to *B rates only*, G and N rates are also advertised. (4219)
- **Radio mode "G rates only" error** – When the radio mode is set to *G rates only*, B and N rates are also advertised. (4003)
- **802.11d** – 802.11d is not currently supported. (3777)

- **Tray icon present when turned off in global configuration** – Previously, when the tray icon was turned off in the global configuration, it would disappear from the system tray but reappear following a reboot of the device, even though it was still off in the global configuration. This issue has been resolved. (4382)
  - **Solution:** Update sdc_gina.exe to v3.4.1.7 or higher.
- **LCM** – The following are open issues associated with LCM:
  - **Layout issue** – Currently, support is not available for portrait and landscape mode rotation (CE 6/7). (4556)
  - **RSSI issue** – RSSI does not currently display in Ad Hoc mode. (4564)
  - **BT device name** – Changing the device name requires a BT disable/enable to be advertised during discovery mode. (4483)