Wi-Fi 6 + BLE (WiSeConnect)

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Wi-Fi 6 + BLE (WiSeConnect) SDK Version 4.0.0 (Jan 22, 2026) - Release Notes

The WiSeConnect Software Development Kit (SDK) is the next-generation Wi-Fi 6 + Bluetooth Low Energy (BLE) SDK for Silicon Labs customers. It replaces RS9116x SDK (formerly known as WiSeConnect 2 SDK) with a modular design and organization of features into configurable components.

Click here for earlier releases.

Release Summary

Release Item	Version	Release Date	Release Notes	Key Features	API Changes	Bug Fixes	C E
Wi-Fi	4.0.0	Jan 22, 2026	Release Notes	- Added Wi-Fi Protected Setup (WPS) Push Button Configuration (PBC) feature support in Station mode. - Vendor-specific IE support for Station (STA), SoftAP, and Concurrent Modes.	- sl_net_up_async - sl_wifi_get_saved_firmware_status	- Fixed issue where HTTP server encounters a connection timeout error when the webpage is refreshed multiple times. - Added support for configurable PEAP security levels (PEAPSAFE1, PEAPSAFE2) through new encryption enum members for enhanced enterprise Wi-Fi authentication security.	N

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Release Item	Version	Release Date	Release Notes	Key Features	API Changes	Bug Fixes	Chip Enablem
Network Stack	4.0.0	Jan 22, 2026	Release Notes	• Added DHCP support from host for IPv4 in Dual Stack mode. • Added SNI extension support for Embedded MQTT. • Added NAT/PAT feature support. • Added DNS IP address support in AP mode. • Added support for Subject Name validation during TLS connections. • Added IPv6 support in Dual Stack mode. • Added DNS-SD support over mDNS for IPv4 and IPv6. • Added adaptive timer optimizations in hosted Network Stack LWIP (IPv6 ND6, DHCP, DNS, ARP, ACD, TCP, and MLD6) for improved power efficiency.	• sl_mqtt_client_connect_v2 (new API – supports enhanced MQTT client management, replaces sl_mqtt_client_connect)	• Resolved an issue where consecutive HTTPS requests (GET/PUT/POST) could fail due to incomplete socket cleanup. • Resolved HTTP server stability issues under congested network conditions • Resolved remote termination issues occurring during socket open/close in a loop. • Resolved a DTLS synchronization issue that could interrupt data transmission and reception. • Resolved TLS data transfer stability issues in 352/320k mode when power save is enabled.	None

Release Item	Version	Release Date	Release Notes	Key Features	API Changes	Bug Fixes	Chip Enablement
SiWx91x Bluetooth LE	4.0.0	Jan 22, 2026	Release Notes	None	Added the `rsi_ble_acceptlist_on_type` API to set the acceptlist filter based on advertising data type, length, and value.	• Fixed legacy pairing issue with IO capabilities. • Fixed `rsi_ble_set_att_value_async` failure in glucose application reconnect tests. • Fixed DUT hang after long-duration connect/disconnect cycles. • Fixed TX notification delay (40–50 seconds) with 10 BLE devices. • Fixed incorrect passkey generation during pairing. • Resolved issues in dense environments for multi-connection and coex apps. • Removed unsupported KCC certification values. • Fixed unused NUM_PKTS macro in BLE PER application. • Fixed `rsi_ble_set_local_att_value` failure with variable-length characteristics. • Fixed a WLAN Power Save Disable API failure in `ble_secureconnection_psram application`.	None

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Release Item	Version	Release Date	Release Notes	Key Features	API Changes	Bug Fixes	Chip Enablement
Multiprotocol	4.0.0	Jan 22, 2026	Release Notes	None	None	- Fixed DUT becoming non-connectable after second auto-disconnect under multi-BLE + MQTT cycling. - Fixed a command-disallowed (0x4E0C) error and web UI issues when stopping BLE advertising in SoftAP + BLE provisioning. - Fixed SSL socket failures during concurrent BLE scan/advertising in power-save with encrypted firmware. - Fixed instability during Wi-Fi MQTT cycling with GATT notifications from 10 BLE connections. - Fixed hang during Wi-Fi reconnect loops with BLE SMP idle links. - Fixed MQTT stopping (~30 minutes) and BLE disconnects (~1.5 hours). - Fixed hang during MQTT + 10 BLE data transfers when Pixel DLE device connected. - Fixed error 0x4E08 in long-duration MQTT + 10 BLE bidirectional testing. - Fixed hang in BLE connection-parameter update handling under 10-connection power-save testing. - Fixed intermittent MQTT provisioning failures (-13) with OnePlus 7T. - Fixed unresponsiveness and Wi-Fi/BLE disconnects	

Release Item	Version	Release Date	Release Notes	Key Features	API Changes	Bug Fixes	Chip Enablement
SiWx91x Platform	4.0.0	Jan 22, 2026	Release Notes	• Introduced Wakeup-on-Wireless feature. • Enhanced driver support for BOD, OPAMP and SSI Peripherals. • Added CMake build system support.	• Added APIs for the newly introduced logger feature • Added new APIs for the following peripherals: GPIO, USART, I2S, PCM, HSPI, SYSRTC, GPDMA, LittleFS, Clock Manager, GSPI, DMA, eFuse, Power Manager, Memory Manager, SDIO Secondary, Logger	• Fixed SysTick timing issue in non-Power Manager RTOS-based applications • Fixed ULP I2S base-address reference to ensure correct operation in custom applications. • Resolved SDC maximum sampling threshold alignment to 15 as per updated HRM specifications. • Fixed SSI application failures observed at lower frequencies (1 MHz/2 MHz). • Removed low configuration values for WDT timeout. • Fixed issue observed with UART IRQ handlers. • Fixed SLCP and project name mismatches. • Fixed struct type definitions in the Power Manager driver for accurate configuration handling. • Corrected Power Manager interrupt event definitions to ensure proper event reporting and behavior. • Fixed GSPI maximum baud rate constant by updating it to 116 MHz [SI91X-19427]. • Corrected the uDMA instance mapping to ensure reliable UART operation when multiple UARTs are configured with DMA. • Fixed unintended build failures by wrapping all `#warning` statements in proper `#ifdef` guards across config files. • Fixed incorrect temperature and motion sensor readings on the dev kit by resolving the ICM initialization issue and addressing the SSI DMA init hang. • Added a usage note in the Software Reference Manual for the DEBUGOUT macro, advising developers to append `\r\n` to ensure logs are properly flushed to the terminal • Fixed ADC FIFO example to read correct data for multiple channels by moving `ping_pong_memory_read` to global scope and resetting it during deinit/reset. • Reduced excessive RAM usage by declaring `sl_bjt_config` and `sl_bjt_channel_config` as `const`.	

Impact of Release Changes

Impact Statements | Migration Guide

Impact Statements

None

Migration Guide

Click here for the migration guide for deprecated, removed, and modified items.

Using This Release

What's in the Release? | Compatible Software | Installation and Use | Help and Feedback

What's in the Release?

- WiSeConnect SDK, application examples, and connectivity firmware are available in the `wiseconnect` package.
- For instructions, please refer here to install through Simplicity Studio, or here to install through the command line.

Note that installing through Simplicity Studio will result in the desired package being automatically installed based on the installation option selected.

Compatible Software

Software	Compatible Version or Variant
Connectivity Firmware	- Standard: 2.15.5.0.0.12 - Lite: 2.15.5.0.2.12 - Lite firmware applies to OPN SiWG917M110LGTBA Note: The firmware above is used by the network processor on SiWx91x parts.
Simplicity SDK	2025.12.0 Note: The WiSeConnect Simplicity Studio extension automatically pulls in the compatible Simplicity SDK version. See the Getting Started Guides for more details.
Simplicity Studio	6.1.0 Note: To install Simplicity Studio, see the Install Simplicity Studio section.
RTOS	FreeRTOS v11.1.0 Note: The WiSeConnect Simplicity Studio extension automatically pulls in the compatible FreeRTOS version. See the Getting Started Guides for more details.
Toolchains in Simplicity Studio	GNU ARM v12.2.1 Note: To install the above toolchain, see the Install the GNU ARM v12.2.1 Toolchain section.
LwIP	2.2.1 Note: The Studio extension automatically pulls in the compatible LwIP version when the "LwIP Network Stack (Hosted)" component is added to a project.

Installation and Use

> **Note:**
>
> - To upgrade an earlier version of board BRD4338A (standalone or included in pro kit Si917-6031A), see the SiWG917 - TA Flash Memory Map Change Guide.
> - The release packages will include bug fixes, enhancements, and new features for both `SDK` and `Firmware`. Customers should update and use the `SDK` and `Firmware` from the same release package. Combinations of SDK and Firmware that are not released together are not supported.
> - It is strongly recommended to perform firmware update using a combined image, which includes both the Network Processor (NWP) and the Application Processor (M4) images in a single package.
> - When generating a combined image, use NWP image and M4 image from the same release package. Using different versions may result in undefined behavior due to a version mismatch.
> - For devices with 4 MB flash, updating using a combined image is not supported due to memory limitations. In this case, it is mandatory to update the NWP image first, followed by the M4 image.
> - For NCP mode, it is mandatory to update the NWP image first, followed by the Host image of the same release version.

To run your first demo with the Simplicity Studio integrated development environment (IDE), see our Getting Started Guides.

To kick start your development and debugging with the Simplicity Studio IDE, see our Developers Guide.

To learn about flashing binaries, security key management, and calibration of crystal and GAIN offsets with Simplicity Commander, see the SiWx917 SoC Manufacturing Utility User Guide.

To learn about Advanced Energy Monitoring (AEM) to measure ultra-low power capability on development boards (radio boards or dev kit boards or explorer boards), see the Measure Power Usage section.

To learn about the Pin Tool for pin configurations on development boards, see the Pin Tool user guide for Simplicity Studio.

To review Security and Software Advisory notifications and manage your notification preferences:

1. Go to https://community.silabs.com/.
2. Log in with your account credentials.
3. Click your profile icon in the upper-right corner of the page.
4. Select Notifications from the dropdown menu.
5. In the Notifications section, go to the My Product Notifications tab to review historical Security and Software Advisory notifications.
6. To manage your preferences, use the Manage Notifications tab to customize which product updates and advisories you receive.

For recommended settings, configurations, and usage guidelines, see the Recommended Settings section.

To learn more about the software in this release, dive into our online documentation.

Help and Feedback

- Contact Silicon Labs Support.
- To use our Ask AI tool to get answers, see the search field at the top of this page.

> Note: Ask AI is experimental.

- Get help from our developer community.

Feature Matrix

The following sections cover the features of the Wi-Fi 6 + BLE (WiSeConnect) SDK:

- Supported Features
  - Wi-Fi
    - Operating Modes
    - Wi-Fi Protocol Features
    - Wi-Fi 6 Protocol Features
      - Wi-Fi Scan
      - Wi-Fi Station Mode
    - Access Point Mode
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  - Wi-Fi
  - Network Stack
  - SiWx91x Bluetooth LE
  - Multiprotocol
  - SiWx91x Platform

Supported Features

Wi-Fi | Network Stack | SiWx91x Bluetooth LE | Multiprotocol | SiWx91x Platform

Note: The following list specifies the hardware parts compatible with the WiSeConnect SDK:

- SoC mode OPNs supported:
  - IC QFN OPNs: SiWG917M111MGTBA, SiWG917M100MGTBA, SiWG917M110LGTBA (Lite OPN), SiWG917M111XGTBA, SiWG917M121XGTBA, SiWG917M141XGTBA
  - Module OPNs: SIWG917Y111MGNBA , SIWG917Y110LGNBA, SIWG917Y121MGNBA, SIWG917Y111MGABA, SIWG917Y110LGABA, SIWG917Y121MGABA
- SoC mode pro kits supported: SiWx917-PK6031A
- SoC mode boards supported:
  - Radio boards: SiWx917-RB4338A, SiWx91x-RB4342A
  - Dev kit: SiWx917-DK2605A
  - Module board: SiW917Y-RB4343A
  - Module explorer kit: SiW917Y-EK2708A
- NCP mode OPNs supported:
  - IC QFN OPN: SiWN917M100LGTBA
  - Module OPNs: SiWN917Y100LGABA, SiWN917Y100LGNBA

NCP mode boards supported:
- Radio board: SiWx917-RB4346A
- Module board: SIWX917-RB4357A
- Adaptor boards: Si-EB8045A, Si-EB8045C

Wi-Fi

Operating Modes | Wi-Fi Protocol Features | Wi-Fi 6 Protocol Features | Wi-Fi Scan | Wi-Fi Station Mode | Access Point Mode | Wi-Fi Power Save

Operating Modes

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Wi-Fi Station (STA)	Wi-Fi Station mode with 802.11ax and 802.11n support	GA	API Reference Guide - Client	- Firmware variants: Standard and Lite - OPNs All - Boards All - Modes: SoC, NCP - Host interfaces: UART, SPI	Wi-Fi - Station Ping
Wi-Fi Access Point (SoftAP)	Wi-Fi Access Point mode with 802.11n support	GA	API Reference Guide - Access Point	- Firmware variants: Standard only - OPNs All - Boards All - Modes: SoC, NCP - Host interfaces: UART, SPI	Wi-Fi - Access Point
Wi-Fi Station (STA) + Access Point (SoftAP)	Wi-Fi concurrent mode support over the same channel- Station with 802.11ax and 802.11n + Access Point with 802.11n	GA	- API Reference Guide - Client - API Reference Guide - Access Point	- Firmware variants: Standard only - OPNs All - Boards All - Modes: SoC, NCP - Host interfaces: UART, SPI	Wi-Fi - Concurrent Mode
Wi-Fi Enterprise Client	Support for EAP-TLS, EAP-TTLS, EAP-FAST, and PEAP security	GA	API Reference Guide - Client	- Firmware variants: Standard only - OPNs All - Boards All - Modes: NCP - Host interfaces: UART, SPI	Wi-Fi - Enterprise Client

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Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Wi-Fi Transceiver	Wi-Fi Transceiver mode with 802.11b/g support	GA	API Reference Guide - Wi-Fi Transceiver	• Firmware variants: Standard only • OPNs All • Boards All • Modes: NCP • Host interfaces: UART, SPI	None
Wi-Fi Transmit Test Mode	Custom, connection-less testing in SoC or NCP mode	GA	• sl_si91x_transmit_test_start • sl_si91x_transmit_test_stop • sl_wifi_get_statistics • sl_wifi_start_statistic_report • sl_wifi_stop_statistic_report • sl_wifi_update_gain_table	• Firmware variants: Standard only • OPNs All • Boards All • Modes: NCP • Host interfaces: UART, SPI	Wi-Fi - WLAN RF Test

Wi-Fi Protocol Features

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
IEEE 802.11b/g/n (2.4 GHz)	IEEE 802.11b/g/n Wi-Fi standards supported over the 2.4 GHz band.	Beta	• API Reference Guide - Client • API Reference Guide - Access Point	• Firmware variants: Standard and Lite • OPNs All • Boards All • Modes: SoC, NCP • Host interfaces: UART, SPI	Wi-Fi - Station Ping
IEEE 802.11ax (2.4 GHz)	IEEE 802.11ax Wi-Fi standard supported in the 2.4 GHz band	Beta	API Reference Guide - Client	• Firmware variants: Standard and Lite • OPNs All • Boards All • Modes: SoC, NCP • Host interfaces: UART, SPI	Wi-Fi - Throughput

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Wi-Fi Multimedia (WMM) Quality of Service (QoS)	Wi-Fi Multimedia (WMM) Quality of Service (QoS)	GA	API Reference Guide - Client	• Firmware variants: Standard and Lite • OPNs All • Boards All • Modes: SoC, NCP • Host interfaces: UART, SPI	Wi-Fi - Throughput
2.4 GHz Band	Supported channels: • 1-11 (US) • 1-13 (Europe) • 1-14 (Japan)	GA	• API Reference Guide - Client • API Reference Guide - Access Point	• Firmware variants: Standard and Lite • OPNs All • Boards All • Modes: SoC, NCP • Host interfaces: UART, SPI	• Wi-Fi - Station Ping • Wi-Fi - Access Point • Wi-Fi - Throughput • Multiple additional examples.
Wi-Fi Alliance (WFA) Certification	Pre-testing completed for WFA certification. One recently added test case is currently failing, and a fix will be included in an upcoming release. Despite this, the Wi-Fi SDK remains certifiable.	GA	API Reference Guide - Client	• Firmware variants: Standard only • OPNs All • Boards All • Modes: SoC only	None

Wi-Fi 6 Protocol Features

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
MU-MIMO (DL)	Enable a Wi-Fi station to receive data that is sent by the access point to multiple stations at the same time in the downlink direction, improving network efficiency.	GA	API Reference Guide - Client	• Firmware variants: Standard • OPNs All • Boards All • Modes: SoC, NCP • Host interfaces: UART, SPI	Wi-Fi - Throughput

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
OFDMA (UL/DL)	Enable a Wi-Fi station (STA) to simulateneously transmit data to other stations and receive data from other stations, by using assigned sub-channels (resource units) within a shared channel, enhancing efficiency in both uplink and downlink directions.	GA	API Reference Guide - Client	• Firmware variants: Standard and Lite • OPNs All • Boards All • Modes: SoC, NCP • Host interfaces: UART, SPI	• Wi-Fi - Throughput
Target Wake Time (TWT)	iTWT, TWT I-frame, and TWT enhancements (automatic TWT configuration)	GA	• sl_wifi_enable_target_wake_time • sl_wifi_disable_target_wake_time • sl_wifi_target_wake_time_auto_selection • sl_wifi_reschedule_twt	• Firmware variants: Standard and Lite • OPNs All • Boards All • Modes: SoC, NCP • Host interfaces: UART, SPI	Wi-Fi - TWT Use case demo app
BSS Coloring	Identify transmissions from different networks, marked with unique color identifiers to reduce interference and improve performance in dense environments.	GA	sl_si91x_transmit_test_start	• Firmware variants: Standard and Lite • OPNs All • Boards All • Modes: SoC, NCP • Host interfaces: UART, SPI	Wireless Test

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Multiple BSSID (MBSSID)	Connect as a Wi-Fi station to multiple virtual networks (SSIDs) broadcast from a single Wi-Fi access point using a single physical radio, enabling efficient management of multiple wireless networks on the same hardware.	GA	API Reference Guide - Client	• Firmware variants: Standard and Lite • OPNs All • Boards All • Modes: SoC, NCP • Host interfaces: UART, SPI	Wi-Fi - Station Ping

Wi-Fi Scan

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Selective Scan	Channel specific scan	GA	API Reference Guide - Scanning	• Firmware variants: Standard and Lite • OPNs All • Boards All • Modes: SoC, NCP • Host interfaces: UART, SPI	Wi-Fi - Roaming
Active / Passive Scan	Active scanning to send probe requests to discover networks and passive scanning to listen for beacon frames from access points	GA	API Reference Guide - Scanning	• Firmware variants: Standard and Lite • OPNs All • Boards All • Modes: SoC, NCP • Host interfaces: UART, SPI	Wi-Fi - Roaming
Background (BG) Scan	Background scan in STA mode	GA	API Reference Guide - Scanning	• Firmware variants: Standard and Lite • OPNs All • Boards All • Modes: SoC, NCP • Host interfaces: UART, SPI	Wi-Fi - Roaming

Wi-Fi Station Mode

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Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Wi-Fi Re-join	Enable a device to automatically re-connect to a previously connected wireless network after disconnection.	Beta	• sl_wifi_set_join_callback • sl_wifi_set_advanced_client_configuration	• Firmware variants: Standard and Lite • OPNs All • Boards All • Modes: SoC, NCP • Host interfaces: UART, SPI	Wi-Fi Provisioning via Access Point
Wi-Fi Roaming	• Opportunistic Key Caching (OKC) • Pairwise Master Key (PMK) caching • Pre-authentication	Alpha	sl_wifi_set_roam_configuration	• Firmware variants: Standard and Lite • OPNs All • Boards All • Modes: SoC, NCP • Host interfaces: UART, SPI	Wi-Fi - Roaming
BG Scan	• Opportunistic Key Caching (OKC) • Pairwise Master Key (PMK) caching • Pre-authentication	GA	sl_wifi_set_roam_configuration	• Firmware variants: Standard and Lite • OPNs All • Boards All • Modes: SoC, NCP • Host interfaces: UART, SPI	Wi-Fi - Roaming

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Wi-Fi Security	- Wi-Fi open security - WPA - WPA / WPA2 Mixed Mode - WPA2 Personal - WPA2 enhancements - WPA2 Enterprise security - Method: PEAP/TTLS/TLS 1.0/TLS 1.2/FAST/LEAP - WPA3 Personal - WPA3 Personal Transition Mode - WPA3 Enterprise security - Method: PEAP/TTLS/TLS 1.0/TLS 1.2/FAST - Known security vulnerabilities handled: - WPA2 KRACK attacks - Fragment and Forge	Beta	sl_wifi_connect	- Firmware variants: Standard and Lite (Enterprise security not applicable for Lite) - OPNs All - Boards All - Modes: SoC, NCP - Host interfaces: UART, SPI	- Wi-Fi Provisioning via Access Point - Enterprise example

Access Point Mode

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Four-client Support	Allow up to four clients to connect to the access point.	GA	sl_wifi_init	- Firmware variants: Standard only - OPNs All - Boards All - Modes: SoC only - Host Interfaces: N/A	Wi-Fi - Access Point
Hidden SSID Mode	Prevent a Wi-Fi network's SSID from being broadcast in beacon frames, making the network name invisible to casual scans.	GA	sl_wifi_init	- Firmware variants: Standard only - OPNs All - Boards All - Modes: SoC, NCP - Host interfaces: UART, SPI	Wi-Fi - Access Point

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Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Auto Channel Selection	Dynamically select the optimal Wi-Fi channel to minimize interference and improve network performance.	GA	sl_wifi_start_ap	- Firmware variants: Standard only - OPNs All - Boards All - Modes: SoC, NCP - Host interfaces: UART, SPI	Wi-Fi - Access Point
Scan in Access Point Mode	Wi-Fi scanning in access point mode	GA	sl_wifi_start_scan	- Firmware variants: Standard only - OPNs All - Boards All - Modes: SoC, NCP - Host interfaces: UART, SPI	Wi-Fi Provisioning via Access Point
Wi-Fi Security	- Wi-Fi open security - WPA2 Personal - WPA Mixed Mode (WPA/WPA2)	GA	sl_wifi_start_ap	- Firmware variants: Standard only - OPNs All - Boards All - Modes: SoC only - Host Interfaces: N/A	Wi-Fi - Access Point
Wi-Fi Security	- WPA3 Personal - H2E Method only	Alpha	sl_wifi_start_ap	- Firmware variants: Standard only - OPNs All - Boards All - Modes: SoC only - Host Interfaces: N/A	Wi-Fi - Access Point

Wi-Fi Power Save

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Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Standby Associated	Standby Associated (connected sleep) with Max/Enhanced Max/Fast Power Save Profile (PSP)	GA	API Reference Guide - Wi-Fi Power and Performance	• Firmware variants: Standard and Lite • OPNs All • Boards All • Modes: SoC, NCP • Host interfaces: UART, SPI	Wi-Fi - Power Save Standby Associated
Network Processor (NWP) Deep Sleep	Network Processor (NWP) Deep Sleep with and without RAM retention	GA	API Reference Guide - Wi-Fi Power and Performance	• Firmware variants: Standard and Lite • OPNs All • Boards All • Modes: SoC, NCP • Host interfaces: UART, SPI	Wi-Fi - Power Save Deep Sleep

Network Stack

Core Networking Features | Advanced Networking Features | IoT Cloud Integration

Core Networking Features

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Core Network Protocols	IPv4, UDP, TCP, ARP, ICMP, ICMPv6	GA	• API Reference Guide - Network Management • API Reference Guide - Sockets • API Reference Guide - ICMP	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: UART, SPI	• Wi-Fi - Throughput • Wi-Fi - Station Ping
Internet Protocol version 6 (IPv6)	Connect and exchange data with other hosts using the IPv6 protocol in the networking layer of the network stack.	Beta	• API Reference Guide - Network Management • API Reference Guide - Sockets • API Reference Guide - ICMP	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: UART, SPI	• Wi-Fi - Throughput IPv6 • Wi-Fi - Station Ping IPv6

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
TLS Client	Supported versions 1.0, 1.2, 1.3	GA	API Reference Guide - BSD Sockets	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: UART, SPI	Wi-Fi - TLS Client
DHCP Client	Support for DHCPv4 and DHCPv6	Beta	sl_net_set_profile	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: UART, SPI	- Wi-Fi - Enterprise Client Mode - Wi-Fi - Throughput - Wi-Fi - Throughput IPv6
TCP/IP Bypass (Hosted Network Stack)	LwIP as hosted network stack for reference	GA	API Reference Guide - Network Management	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: UART, SPI	Wi-Fi - LwIP TCP Client
DHCP Server	Support for DHCPv4 and DHCPv6	GA	sl_wifi_init	- Firmware variants: Standard only - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: UART, SPI	Wi-Fi - Access Point
BSD, ARM IoT, and SiWx91x Sockets	BSD, ARM IoT, and SiWx91x sockets	GA	- API Reference Guide - BSD Sockets - API Reference Guide - ARM IoT Sockets - API Reference Guide - SiWx91x Sockets	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: UART, SPI	Wi-Fi - Throughput

Advanced Networking Features

> Note: See DTLS Error Codes for a list of potential error codes encountered during a DTLS connection.

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Advanced Network Protocols	- HTTP/HTTPS Client - mDNS - DNS Client - Embedded MQTT - MQTT on host (AWS and Azure)	GA	- API Reference Guide - HTTP - API Reference Guide - MQTT - API Reference Guide - mDNS - API Reference Guide - DNS	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: UART, SPI	- Wi-Fi - HTTP Client - Wi-Fi - Embedded MQTT Client - Wi-Fi - Azure IoT MQTT Client Application - Wi-Fi - AWS IoT MQTT Client
HTTP Server	Host a Hyper-text Transfer Protocol (HTTP) server to host and serve HTTP content to HTTP clients.	Beta	API Reference Guide - HTTP Server	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: UART, SPI	Wi-Fi - HTTP Server
mDNS over IPv6	Host a Multicast Domain Name (mDNS) service over Internet Protocol version 6 (IPv6) to allow other network devices to look up your IPv6 address based on your host name.	Alpha	API Reference Guide - mDNS	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: UART, SPI	None
SNTP Client	Retrieve date and time information from an SNTP server.	GA	API Reference Guide - SNTP	- Firmware variants: Standard only - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: UART, SPI	Wi-Fi - SNTP Client

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
IGMP	Add the SiWx91x device to a multicast group and exchange multicast data on a UDP socket.	GA	sl_net_join_multicast_address	- Firmware variants: Standard only - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: UART, SPI	None

IoT Cloud Integration

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
AWS IoT Core	Configure SiWx91x as an IoT device and securely connect to the AWS IoT cloud to subscribe and publish on topics using the AWS MQTT library (version 3.1.0).	GA	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: UART, SPI	Wi-Fi - AWS IoT MQTT Client
Azure IoT	Configure the SiWx91x as an Azure device endpoint. Connect and exchange messages with the Azure IoT Hub.	Beta	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: UART, SPI	Wi-Fi - Azure IoT MQTT Client Application

SiWx91x Bluetooth LE

Legacy Features | Advertising Extensions | Power Save

Legacy Features

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
GAP with up to 2 connections	• Advertising, scanning, initiation, connection, and bonding, with a maximum of two connections • Handling of access modes and procedures of the device, including device discovery, link establishment, link termination, initiation of security features, and device configuration	GA	API Reference Guide - BLE	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART	• BLE - Heart Rate • BLE - BLE Central
GAP with up to 10 connections	• Advertising, scanning, initiation, connection, and bonding, with a maximum of eight peripheral connections and two central connections • Handling of access modes and procedures for the device including device discovery, link establishment, link termination, initiation of security features, and device configuration	GA	API Reference Guide - BLE	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A	Unified app for Bluetooth and Wi-Fi
Generic Attribute Protocol (GATT)	GATT defines how data is organized and exchanged between devices. It builds on the Attribute Protocol (ATT) by organizing data into hierarchical structures of profiles, services, and characteristics.	GA	API Reference Guide - BLE	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART	BLE - Multiconnection Gatt Test

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Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Attribute Protocol (ATT)	ATT is the fundamental layer responsible for managing data transmission and handling between devices, particularly within the context of the Generic Attribute Profile (GATT).	GA	API Reference Guide - BLE	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART	BLE - Multiconnection Gatt Test
Security	The Security Manager (SM) defines the protocol and behavior to manage pairing, authentication, and encryption, using a key distribution approach to perform identity and encryption functionalities in radio communication.	GA	• rsi_ble_smp_pair_request • rsi_ble_smp_pair_failed • rsi_ble_ltk_req_reply • rsi_ble_smp_pair_response • rsi_ble_smp_passkey • rsi_ble_start_encryption	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI	• BLE - Secure Connections • BLE - Privacy
LL Privacy 1.2	Allow devices to use temporary, non-identifiable addresses (Resolvable Private Addresses or RPAs) instead of their public identity address.	GA	• rsi_ble_resolvlist • rsi_ble_get_resolving_list_size • rsi_ble_set_addr_resolution_enable • rsi_ble_set_privacy_mode	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI	BLE - Privacy
Accept List	Restrict the connections permitted to a BLE device.	GA	• rsi_ble_addto_acceptlist • rsi_ble_deletefrom_acceptlist • rsi_ble_clear_acceptlist	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI	BLE - Privacy
Directed Advertising	Broadcasting information to a specific device (the scanner) identified by its address.	GA	rsi_ble_start_advertising	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI	• BLE - Heart Rate • Multiple additonal examples

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
LE PHY and Coded PHY	• LE PHY (1 Mbps, 2 Mbps, 2M PHY): Higher data throughput physical layer (2 Mbps) enabling faster data transfers while maintaining power efficiency for high-bandwidth applications. • Coded PHY (125kbps, 500kbps): Extended range capability utilizing Forward Error Correction (FEC) allowing connectivity at up to 4x the standard distance in open environments.	GA	• rsi_ble_readphy • rsi_ble_setphy	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI	None
LE Dual Role Topology	Allow SiWx91x to function as both a central and a peripheral simultaneously on different connections.	GA	• rsi_ble_start_advertising • rsi_ble_start_scanning	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART	BLE - Multiconnection Gatt Test
LE Data Packet Length Extensions (DLE)	Allow the SiWx91x device to transmit data packets with larger payloads, increasing the maximum data rate and potentially improving throughput.	GA	rsi_ble_set_wo_resp_notify_buf_info	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI	BLE - Multiconnection Gatt Test
Asymmetric PHYs	Allow the use of different PHYs (Physical Layers) for transmission (TX) and reception (RX).	GA	rsi_ble_setphy	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI	None

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
LE Channel Selection Algorithm 2 (CSA#2)	Algorithm used to determine the channel index for the next connection event, in order to improve channel hopping and minimize interference, especially in high-throughput and high-interference scenarios.	GA	None	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI	None
LE Secure Connections	Use Elliptic-Curve Diffie-Hellman (ECDH) cryptography to generate a public-private key pair.	GA	• rsi_ble_smp_pair_request • rsi_ble_smp_pair_failed • rsi_ble_ltk_req_reply • rsi_ble_smp_pair_response • rsi_ble_smp_passkey • rsi_ble_start_encryption	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI	BLE - Secure connections

Advertising Extensions

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Extended Advertising	Use secondary advertising channels to offload data that would otherwise be transmitted on the primary advertising channel. Enable multiple sets of advertisements, each with their own data, intervals, duration, address types, filter policies, and PHY rates.	GA	• rsi_ble_get_max_no_of_supp_adv_sets • rsi_ble_set_ae_params • rsi_ble_start_ae_advertising • rsi_ble_get_max_adv_data_len • rsi_ble_set_ae_set_random_address • rsi_ble_set_ae_data	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART	BLE - Unified AE app

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Extended Advertising and Scanning	• Extended Advertising: Enable the discovery of more data than the 31 bytes of traditional advertising by offloading data to an auxiliary advertising packet on a secondary channel. • Extended scanning: Enable scanning for different PHY rates and have a different set of scan interval, scan window, and scan type for each.	GA	• rsi_ble_ae_set_scan_params • rsi_ble_ae_set_scan_enable	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART	BLE - Unified AE app
Periodic Advertising	Allow sending non-connectable advertisements at fixed intervals.	GA	• rsi_ble_app_set_periodic_ae_params • rsi_ble_app_set_periodic_ae_enable	• Firmware variants: Standard and Lite • OPNs : All • Boards : All • Modes : SoC and NCP • Host interfaces : SPI,UART	BLE - Unified AE app
Periodic Advertising Scanning	Scan for periodic advertisements.	GA	• rsi_ble_ae_set_scan_params • rsi_ble_ae_set_scan_enable	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART	BLE - AE central
Periodic Advertising List	A schedule of when a device will send its advertisement data at regular intervals, allowing other devices to synchronize with the advertiser and receive the data at the specified times, saving power and improving efficiency.	GA	• rsi_ble_ae_dev_to_periodic_list • rsi_ble_ae_read_periodic_adv_list_size	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART	BLE - AE central

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
LE Periodic Advertising Synchronization	Allow multiple devices to wake up and receive data from a single source at the same time, enabling energy-efficient communication and data sharing.	GA	rsi_ble_ae_set_periodic_sync	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART	BLE - AE central
Simultaneous Scanning on 1 Mbps and Coded PHY	Listening for advertisements on both PHYs at the same time.	GA	- rsi_ble_ae_set_scan_params - rsi_ble_ae_set_scan_enable	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART	BLE - Unified AE app

Power Save

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Wireless Power Save	- BLE Advertising with power save - BLE Scan with power save - BLE connection with power save - Only Max PSP power save mode is supported in BLE	GA	- rsi_bt_power_save_profile - sl_wifi_set_performance_profile_v2	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART	BLE - Powersave

Multiprotocol

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Wi-Fi Station (STA) + BLE Mode	Co-existence of Wi-Fi Station (STA) mode and Bluetooth Low Energy (BLE) on the same radio, supporting complex use cases with minimal interference. This solution is built on a Time Division Multiplexing (TDM) architecture that schedules radio access between Wi-Fi and BLE with optimal performance.	Alpha	• API Reference Guide - Wi-Fi Client • API Reference Guide - BLE	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: UART, SPI	• BLE Wi-Fi Provisioning with AWS IoT MQTT • Wi-Fi Coex - Wi-Fi Client BLE Throughput App
Wi-Fi + BLE PTA 3-wire Co-existence	Enable connecting two devices via GPIOs, with Wi-Fi as primary and external BLE as secondary, ensuring better performance on the same radio without interference. The solution relies on a radio-sharing mechanism using request, priority, and grant signals. The PTA secondary manages the request and priority, while the PTA primary handles the grant to ensure optimal performance without interference.	GA	API Reference Guide - Wi-Fi Client	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: UART, SPI Note: Flow control must be disabled to support PTA in NCP mode.	Wi-Fi - Throughput

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Wi-Fi + Zigbee / OpenThread PTA 3-wire Co-existence	Enable connecting two devices via GPIOs, with Wi-Fi as primary and external Zigbee or OpenThread as secondary, ensuring better performance on the same radio without interference. The solution relies on a radio-sharing mechanism using request, priority, and grant signals. The PTA secondary manages the request and priority, while the PTA primary handles the grant to ensure optimal performance without interference.	GA	API Reference Guide - Wi-Fi Client	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART Note: Flow control must be disabled to support PTA in NCP mode.	Wi-Fi - Throughput

SiWx91x Platform

Security | Firmware Update | Cryptography | Power Save | Peripherals | Services | Drivers

Security

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Secure Boot	Allow only authenticated and trusted firmware to execute during device startup.	GA	None	• Firmware variants: Standard • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A	Multiple examples
PUF	Secure key storage and hardware device identity	GA	• sl_si91x_puf_aes_encrypt_req • sl_si91x_puf_aes_decrypt_req	• Firmware variants: Standard • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A	Crypto - PUF

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Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Secure Zone	An isolated area that protects sensitive code and data from unauthorized access.	GA	None	• Firmware variants: Standard • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A	Multiple examples
Secure XIP	Secure XIP (execution in place) from flash.	GA	None	• Firmware variants: Standard • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A	None
Secure Attestation	Verify device authenticity by exchanging a random nonce with the network processor and validating the signed response token to confirm device integrity.	GA	None	• Firmware variants: Standard • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A	Crypto - Attestation
Anti-rollback	Prevent a device from being downgraded to older firmware versions, ensuring only the latest authorized firmware can be installed and executed.	GA	None	• Firmware variants: Standard • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A	None
Debug Lock	Disable access to the device's debug interface to prevent unauthorized debugging.	GA	None	• Firmware variants: Standard • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A	None
Flash Protection	Restrict access to specific regions of flash memory to prevent unauthorized access or modification.	GA	None	• Firmware variants: Standard • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A	None

Firmware Update

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Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Firmware Loading with Simplicity Commander	Load firmware using Simplicity Commander through Jlink Debugger connected to Serial Wire Debug (SWD).	Beta	API Reference Guide - Firmware Update From Host	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART	None
Firmware Loading through UART and SPI	Load firmware via ISP using UART interface (Simplicity Commander or serial terminal) or SPI interface.	Beta	API Reference Guide - Firmware Update From Host	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: UART, SPI	Wi-Fi - NWP Or Combined (NWP & M4) Firmware Update via TCP
Secure Over-the-Air (OTA) Update	Perform OTA firmware update via Wi-Fi from a remote HTTP/HTTPS server.	Beta	API Reference Guide - Firmware Update from Module	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: UART, SPI	Wi-Fi - HTTP/HTTPS OTAF Update
Firmware Update via Bootloader	Update firmware from the host MCU using XMODEM protocol.	Beta	API Reference Guide - Firmware Update From Host	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI	Wi-Fi - Firmware Flashing from Host UART
Combined Image Update	Secure and non-secure combined image update	Beta	API Reference Guide - Firmware Update From Host	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC only - Host interfaces: UART, SPI	Wi-Fi - NWP Or Combined (NWP & M4) Firmware Update via TCP

Cryptography

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names

Crypto Hardware Accelerators	Crypto Hardware Accelerators for:
	
	• Advanced Encryption Standard (AES) 128/256/192
	  ◦ ECB
	  ◦ CBC
	  ◦ CTR
	  ◦ CCM
	• Secure Hash Algorithm (SHA) 160/224/256/384/512
	• Hash Message Authentication Code (HMAC)
	• SHA3/SHAKE
	• AES-Galois Counter Mode (GCM)/ Cipher-based Message Authentication Code (CMAC)
	• ChaChaPoly
	• True Random Number Generator (TRNG)
	• ECDH
	• PUF-IID
		GA	API Reference Guide - Crypto	• Firmware variants: Standard and Lite
				• OPNs: All
				• Boards: All
				• Modes: SoC, NCP
				• Host interfaces: SPI, UART
					• Crypto - AES
					• Crypto - ECDH
					• Crypto - GCM_CMAC
					• Crypto - HMAC
					• Crypto - SHA

Crypto Software Accelerators	Crypto Software Accelerators for: • RSA • ECC • ECDSA	GA	API Reference Guide - Crypto	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART	Crypto - ECDSA
PSA Crypto	For all crypto operations except PUF-IID	GA	API Reference Guide - Crypto	• Firmware variants: Standard and Lite • OPNs: Applicable OPNs • Boards: Applicable boards • Modes: SoC only • Host interfaces: N/A	• PSA AES for SI91X • PSA AES-CTR Multipart for SI91X • PSA Asymmetric Key storage for SI91X • PSA CCM for SI91X • PSA ChachaPoly for SI91X • Multiple additional examples

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Wrapping Support	Wrapping support for: • AES • ChaCha-Poly • HMAC • GCM • CMAC • ECDSA • TLS connection Note: Device security should be enabled. See the SiWx917 SoC Manufacturing Utility User Guide.	GA	API Reference Guide - Crypto	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART	• Crypto - AES • Crypto - HMAC • Crypto - GCM_CMAC • Crypto - ECDSA

Power Save

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Deep Sleep	Application processor deep sleep with and without RAM retention, corresponding to the PS0 power state	GA	API Reference Guide - Power Manager	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	• SL Si91x - Power Manager M4 Wireless • SL Si91x - Power Manager Tickless Idle
Power States	Switch the application processor between multiple available power states: • Active: PS4, PS3, and PS2 • Standby: PS4, PS3, and PS2 • Sleep: PS4, PS3, and PS2 • Power state with RAM retention and network processor (NWP) shutdown	GA	API Reference Guide - Power Manager	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	• SL Si91x - PS0 State Example • SL Si91x - PS1 State Example • SL Si91x - PS2 State Example • SL Si91x - PS3 State Example • SL Si91x - PS4 State Example

Peripherals

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Analog-to-Digital Converter (ADC)	Convert analog signals into digital data, enabling interaction with real-world sensors such as temperature, light, and joystick.	GA	API Reference Guide - ADC	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	• SL Si91x - ADC FIFO Mode • SL Si91x - ADC Static Mode
Analog Comparator	Compare two analog input voltages via two input pins, and trigger an interrupt when non-inverting is higher than inverting.	GA	API Reference Guide - Analog Comparator	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	SL Si91x - Analog Comparator
BOD	Nano Power BOD consisting of a comparator, reference buffer, scaler, and resistor bank.	GA	API Reference Guide - BOD	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	• SL Si91x - BOD • SL Si91x - BOD Button
Bipolar Junction Transistor (BJT) Temperature Sensor	Convert a digital output into a temperature in measured in degrees Celsius.	GA	API Reference Guide - BJT Temperature Sensor	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	SL Si91x - BJT Temperature Sensor
Config Timer	Configurable timers used for various tasks such as modulated signal output, event capture on GPIOs in input mode, clock and event counting, and so on.	GA	API Reference Guide - Config Timer	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	SL Si91x - Config Timer

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names

Code Classifier	The Code Classifier component is designed for PSRAM memory management. It demonstrates how to efficiently classify and allocate variables between PSRAM and internal RAM, helping optimize performance in applications that use external PSRAM.	GA	Not Applicable	• Firmware variants: Standard and Lite
				• OPNs:
				  ○ IC QFN OPNs: SiWG917M111MGTBA, SIWG917M110LGTBA (Lite OPN), SiWG917M111XGTBA, SiWG917M121XGTBA, SiWG917M141XGTBA
				  ○ Module OPNs: SIWG917Y111MGNBA, SIWG917Y110LGNBA, SIWG917Y121MGNBA, SIWG917Y111MGABA, SIWG917Y110LGABA, SIWG917Y121MGABA
				• Boards:
				  ○ Radio Boards: SiWx91x-RB4342A
				  ○ Dev kit: SiWx917-DK2605A
				  ○ Module explorer kit: SiW917Y-EK2708A
				• Modes: SoC
				• Host Interfaces: N/A
					SL Si91x - Code Classifier Demo

CRC	Cyclic Redundancy Check (CRC) generation on DMA-transferred data.	GA	API Reference Guide - CRC	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	SL Si91x - CRC
Digital-to-analog Converter (DAC)	Convert digital data into analog signals, for use cases such as audio, telecom, and control systems requiring precise analog output.	GA	API Reference Guide - DAC	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	SL Si91x - DAC
eFuse	One-time programmable memory element used to store configuration or data, with each eFuse using 32-bit addressing, with 8 bits of data per address, and accessed via an eFuse controller for programming and reading.	GA	API Reference Guide - eFuse	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	SL Si91x - eFuse

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
GPIO	Configure and control GPIO pins for tasks like reading digital inputs, controlling devices, and handling interrupts.	GA	API Reference Guide - GPIO	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	• SL Si91x - GPIO Detailed Example • SL Si91x - GPIO Example • SL Si91x - GPIO Group Example • SL Si91x - GPIO ULP Example • SL Si91x - GPIO UULP Example
GPDMA	Memory-to-memory transfers of configurable sizes using either predefined configuration or a user-defined descriptor. Transfer size can be adjusted using `TRANSFER_LENGTH`.	Alpha	API Reference Guide - DMA	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	• SL Si91x - DMA • SL Si91x - GPDMA
GSPI	Enable high-speed, full-duplex communication with SPI-compatible devices using a four-wire synchronous protocol, for both control and data messages.	GA	API Reference Guide - GSPI	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	SL Si91x - GSPI
Hardware Random Number Generator (HRNG)	Generate high-quality random numbers using dedicated hardware entropy sources.	GA	API Reference Guide - HRNG	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	SL Si91x - HRNG
HSPI Secondary	Integrate HSPI secondary with GPDMA to ensure reliable communication with a SPI primary device and efficient handling of HSPI operation callbacks.	GA	API Reference Guide - HSPI Secondary	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	SL Si91x - HSPI Secondary

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
I2C	Two-wire serial protocol commonly used in microcontrollers for efficient communication with sensors and peripherals, ideal for systems with limited I/O pins.	GA	API Reference Guide - I2C	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	• SL Si91x - I2C Driver Follower • SL Si91x - I2C Driver Leader • SL Si91x - I2C Driver Leader Using Transfer API
Inter-IC Sound (I2S)	Serial protocol used to transmit digital audio between ICs, commonly connecting components like DSPs, DACs, and microphones	GA	API Reference Guide - I2S	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	• SL Si91x - I2S Loopback • SL Si91x - I2S Primary • SL Si91x - I2S Secondary • SL Si91x - PCM Loopback • SL Si91x - PCM Primary • SL Si91x - PCM Secondary
Motor Control PWM (MCPWM)	Generates programmable pulse waveforms for motor and power control, operating as a timer with a configurable period and duty cycle.	GA	API Reference Guide - PWM	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	SL Si91x - PWM
OPAMP	Analog component that can be configured for various applications such as signal amplification, buffering, and voltage comparison	GA	API Reference Guide - OPAMP	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	SL Si91x - OPAMP

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Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names

PSRAM	A PSRAM combines DRAM density with SRAM-like ease of use by handling internal refresh automatically. The application processor (M4) accesses its internal PSRAM via a Quad-SPI interface.	GA	API Reference Guide - PSRAM	• Firmware variants: Standard and Lite
				• OPNs:
				  ○ IC QFN OPNs: SiWG917M111MGTBA, SIWG917M110LGTBA (Lite OPN), SiWG917M111XGTBA, SiWG917M121XGTBA, SiWG917M141XGTBA
				  ○ Module OPNs: SIWG917Y111MGNBA, SIWG917Y110LGNBA, SIWG917Y121MGNBA, SIWG917Y111MGABA, SIWG917Y110LGABA, SIWG917Y121MGABA
				• Boards:
				  ○ Radio Boards: SiWx91x-RB4342A
				  ○ Dev kit: SiWx917-DK2605A
				  ○ Module explorer kit: SiW917Y-EK2708A
				• Modes: SoC
				• Host Interfaces: N/A
					• SL Si91x - PSRAM Blinky
					• SL Si91x - PSRAM Driver Example

QEI	Measure the position and speed of a rotating encoder, for applications requiring precise motion control.	GA	API Reference Guide - QEI	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	SL Si91x - QEI
Sensor Data Collector (SDC)	A low-power peripheral that uses an internal ADC to convert analog signals from sensors (like temperature or light) into digital data for processing by the microcontroller.	GA	API Reference Guide - Sensor Data Collector	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	SL Si91x - SDC
Secure Digital Input/Ouput (SDIO) Secondary	Device extending the SD card standard to support I/O functions, acting as a secondary to exchange data with an external SDIO primary.	GA	API Reference Guide - SDIO	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	SL Si91x - SDIO Secondary

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Synchronous Serial Interface (SSI) Primary and Secondary	Enable clock-synchronized serial communication between a microcontroller and peripherals, typically using SPI or microwire.	GA	API Reference Guide - SSI	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host Interfaces: N/A	- SL Si91x - SSI Master - SL Si91x - SSI Slave
USART	Communicate with an external host through a wired connection in both asynchronous modes and synchronous modes, supporting using both full-duplex and half-duplex (single-wire) communication.	GA	API Reference Guide - USART	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host Interfaces: N/A	- SL Si91x - UART - SL Si91x - UART RS485 - SL Si91x - USART Async - SL Si91x - USART Sync Master - SL Si91x - USART Sync Slave
Ultra-low Power (ULP) ADC	Converts analog signals into digital data, enabling interaction with real-world sensors like temperature, light, and joysticks.	GA	API Reference Guide - ADC	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host Interfaces: N/A	SL Si91x - ULP ADC
ULP DAC	Convert digital data into analog signals, for use cases such as audio, telecom, and control systems requiring precise analog output.	GA	API Reference Guide - DAC	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host Interfaces: N/A	SL Si91x - ULP DAC
ULP DMA	Memory-to-memory transfers of configurable sizes using either a predefined configuration or a user-defined descriptor. Transfer size can be adjusted via `TRANSFER_LENGTH`.	GA	API Reference Guide - DMA	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host Interfaces: N/A	SL Si91x - ULP DMA

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
ULP GPIO	Configure and control GPIO pins for tasks like reading digital inputs, controlling devices, and handling interrupts.	GA	API Reference Guide - GPIO	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host Interfaces: N/A	SL Si91x - ULP GPIO
ULP I2C	Two-wire serial protocol commonly used in microcontrollers for efficient communication with sensors and peripherals, ideal for systems with limited I/O pins.	GA	API Reference Guide - I2C	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host Interfaces: N/A	SL Si91x - ULP I2C
ULP I2S	Serial protocol used to transmit digital audio between ICs, commonly connecting components like DSPs, DACs, and microphones.	GA	API Reference Guide - I2S	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host Interfaces: N/A	SL Si91x - ULP I2S
ULP Timer	Timer for extremely low-power operation, for use in battery-powered or energy-efficient devices	GA	API Reference Guide - ULP Timer	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host Interfaces: N/A	SL Si91x - ULP TIMER
ULP USART	Device for communication through a wired connection in both asynchronous mode and synchronous mode, with full-duplex and half-duplex (single-wire) connections.	GA	API Reference Guide - USART	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host Interfaces: N/A	SL Si91x - ULP UART

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
ULP Synchronous Serial Interface (SSI) Primary	Enable clock-synchronized serial communication between a microcontroller and peripherals, typically using SPI or microwire.	GA	API Reference Guide - SSI	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	SL Si91x - ULP SSI PRIMARY
UULP Real-Time Clock (RTC) or Calendar	Device for accurate timekeeping and calendar functionality, enabling applications to track date and time, schedule events, and manage alarms in low-power modes.	GA	API Reference Guide - Calendar	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	• SL Si91x - Calendar • SL Si91x - ULP Calendar
UULP Watchdog Timer	Trigger an interrupt or system reset on timeout due to failures like electrostatic discharge (ESD) or software errors, and also wake up the system from a Sleep or Standby state.	GA	API Reference Guide - Watchdog Timer	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	SL Si91x - Watchdog Timer
UULP System Real-Time Clock (SYSRTC)	Device providing precise timekeeping and timer functionality essential for various applications and tasks that require accurate time measurement, event scheduling, and power management.	GA	API Reference Guide - SysRTC	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host Interfaces: N/A	SL Si91x - SysRTC

Services

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Sleep Timer	Service providing software timers using a low-frequency, real-time clock peripheral (SYSRTC).	GA	API Reference Guide - Sleep Timer	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A	SL Si91x - Sleep Timer
I/O Stream	Service used for configuring I/O Stream USART in asyncronous mode to send and receive data.	GA	API Reference Guide - I/O Stream	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A	SL Si91x - I/O Stream USART Baremetal
NVM3	Service providing third-generation Non-Volatile Memory (NVM3) data storage on SiWx91x using both common flash and dual flash storage systems.	GA	API Reference Guide - NVM3	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A	• SL Si91x - NVM3 Common Flash • SL Si91x - NVM3 Dual Flash
LittleFS	Service providing basic file operations using the LittleFS library on a QSPI-based flash file system.	GA	API Reference Guide - LittleFS	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A	• SL Si91x - LittleFS • SL Si91x - LittleFS Common Flash • SL Si91x - LittleFS File Operations
Power Manager	Service providing the management of low-power states, including state transitions (PS4, PS3, and PS2) and sleep-wakeup (PS4, PS3, and PS2 sleep with RAM retention), with and without tick-less idle mode	GA	API Reference Guide - Power Manager	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A	• SL Si91x - Power Manager M4 Wireless • SL Si91x - Power Manager Tickless Idle

SILICON LABS

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Sensor Hub	Service providing a convenient framework to integrate sensors on I2C, GPIO, UART, and ADC interfaces. It supports sensor activity in low-power mode.	Beta	API Reference Guide - Sensor Hub	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A	SL Si91x - Sensor Hub
Co-processor Communication (CPC)	Low-power communication interface for an external host to access sensors over I2C, GPIO, UART, or ADC interfaces	Alpha	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: SDIO	SL Si91x - CPC Secondary SDIO FreeRTOS
Firmware Fallback	Low-power communication interface for an external host to access sensors over I2C, GPIO, UART, or ADC interfaces	Alpha	API Reference Guide - Firmware Fallback A and B	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: SDIO	- M4 FW AB UPDATER (A/B Fallback) - M4 FW AB UPDATER FOR SECURITY (A/B Fallback) - Wi-Fi - NWP-M4 Firmware Update via TCP (A/B Fallback) - Wi-Fi - NWP-M4 Firmware Update via TCP (A/B Fallback)
Pin Tool	Tool that enables configuration of GPIO pins and selection of supported peripheral combinations.	Alpha	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A	None

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Debug Logger	Service providing debug logging functionality for application development and troubleshooting	Alpha	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A	None

Drivers

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
LED	Driver providing GPIO/LED toggle functionality	GA	API Reference Guide - LED	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A	SL Si91x - Blinky
Button	Driver providing the use of buttons in a bare-metal environment	GA	API Reference Guide - Button	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A	SL Si91x - Button Baremetal
Memory LCD	Driver providing the use of the Memory Liquid Crystal Display (MEMLCD) module in a bare-metal application, using Silicon Labs Graphics Library (glib)	GA	API Reference Guide - Memory LCD	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A	SL Si91x - Memory LCD Baremetal
Joystick	Driver providing the use of the joystick device	GA	API Reference Guide - Joystick	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A	SL Si91x - Joystick

Feature Name	Description	Quality	Related API Names	Supported Software Variants, Hardware, Modes, Host Interfaces	Related Example Names
Mic	Driver providing features such as starting and stopping audio capture, streaming audio data, and calculating sound levels from captured audio samples	GA	API Reference Guide - Mic	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A	SL Si91x - Mic
On-board Sensors	Driver providing access to features such as temperature and humidity measurements, ambient light Lux measurement, and 6-axis motion detection, using the following sensors: • Si70XX RHT Sensor • VEML Sensor • ICM Sensor	GA	• API Reference Guide - Si70XX RHT Sensor • API Reference Guide - VEML Sensor • API Reference Guide - ICM Sensor	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A	• SL Si91x - Si70xx Sensor • SL Si91x - VEML6035 Sensor • SL Si91x - ICM40627 Sensor
RGB LED	Driver providing RGB LED functionality	GA	API Reference Guide - RGB LED	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A	SL Si91x - RGB LED

Unsupported Features

Wi-Fi | Network Stack | SiWx91x Bluetooth LE | Multiprotocol | SiWx91x Platform

Wi-Fi

- The SDIO host interface is not supported in NCP mode.
- WMM-PS/UAPSD is not supported.
- UL MU-MIMO is not supported.
- 40 MHz bandwidth for 2.4 GHz band is not supported.
- The number of non-transmitting BSSIDs processed is limited by the beacon length (1024 bytes) that can be processed by the Wi-Fi networking layers on the SiWx91x device. Beacons larger than 1024 bytes in length will not be processed.
- WPA3 access points support only the H2E algorithm.
- The SA query procedure not supported in 11W access point mode.
- Access point standalone mode does not support TX aggregation. RX aggregation is supported with a limited number of BA sessions.
- In concurrent access point mode, aggregation (TX/RX) is not supported.
- Low-power scan supports only the reception of 1 Mbps packets.
- bTWT, Intra PPDU power save and spatial reuse features are not supported.

For WPA3 Enterprise connection in station mode:
- EAP-192 bit mode is not supported.
- UOSC is not supported.
- PEAPV1 is not supported.
- PMK caching is not supported.
- Explicitly configured server certificates, server domains (FQDNs), and server domain suffix configurations are not supported for server certificate validation.
- WPS Push Button (PB) connections are not supported when using WPA2 security with PMF as required.

Network Stack

- Azure MQTT is not supported in asynchronous mode. This limitation will be addressed in a future release.
- Secure SSL re-negotiation is not supported in the offloaded network stack (that is, the network stack on the network processor).
- Dual-host mode is not supported.
- TLS 1.3 server is not supported.
- More than three SSL sockets are not supported in Wi-Fi-alone and Wi-Fi + BLE co-existence modes. The number of SSL sockets supported in Wi-Fi + BLE co-existence mode depends on the RAM memory configuration selected.
- In SSL, the ECC Curve ID supported is 23. SSL handshake with third-party clients depends on the SSL ECC Curve ID used.
- Timeout value of less than 1 second is not supported for socket `select` and `receive` APIs.
- HTTP / HTTPS server is not supported in the offloaded network stack.
- Auto PAC Provisioning in EAP-FAST with TLS 1.2 is not supported.

SiWx91x Bluetooth LE

- Dynamically disabling or enabling BLE is not supported.
- Eight concurrent peripheral and two concurrent central connections are supported using an encrypted firmware image and power-save support enabled for both M4 and Network processors with the following restrictions:
  - Supported only with the `SL_SI91X_EXT_FEAT_416K_M4SS_256K` RAM configuration (416 KB memory processor + 256 KB application processor),
  - Not supported on the PSRAM radio board (SiWx91x-RB4342A).
- The `ae_central` and `ae_peripheral` example applications are not supported with `TA_352K_M4_320K RAM` configuration (352 KB network processor + 320 KB application processor).
- Isochronous channels are not supported.
- Connection sub-rating is not supported.
- The LE power controller is not supported.
- EATT is not supported.
- Periodic Advertising with a response is not supported.
- BLE Audio is not supported.
- Dynamically changing the TX power is not supported when extended advertising is active.
- The Simplicity Connect mobile application does not support differentiating between the BLE configurators based on the Bluetooth device address.
- Support for PSRAM examples is not available for all PSRAM variants. Certain BLE PSRAM examples are supported only with:
  - The following boards: SiWx917-DK2605A, BRD4340A, SiWx91x-RB4342A, BRD4339A, BRD4343Q
  - The following OPNs: SiWG917M111MGTBA, SiWG917M141XGTBA, SIWG917Y111MGAB, SIWG917Y111MGNBA, SIWG917Y121MGNB, SiWG917M121XGTBA, SiWG917M111XGTBA, and SIWG917M110lGTBA
- PSRAM is not supported with the `ble_iop_app` example application.
- Over-the-air (OTA) firmware update with/without ACK is not supported with the `ble_iop_app` example application.

Multiprotocol

- Wi-Fi Access Point (AP) + BLE co-existence mode is currently not supported.

- `EXT_FEAT_352K_M4SS_320K RAM` configuration (352 KB network processor + 320 KB application processor) is not supported for co-existence mode with SSL.
- Over-the-air (OTA) firmware update with BLE is not supported.
- Wi-Fi + BLE with eight concurrent peripheral and two concurrent central connections are supported are supported using an encrypted firmware image and power-save support enabled for both M4 and Network processors with the following restrictions:
  - Supported only with `SL_SI91X_EXT_FEAT_416K_M4SS_256K RAM` configuration (416 KB network processor + 256 KB application processor).
  - Supported only with the MQTT profile (Wi-Fi MQTT data transfers of ~200 bytes each every 1.5 seconds)
  - Not supported on the PSRAM radio board ([SiWx91x-RB4342A](#)).
  - Not supported with IPv6
  - Not supported with Target Wake Time (TWT) based wakeup
  - Not supported with RPA
- For Wi-Fi + BLE with eight concurrent peripheral and two concurrent central connections:
  - The minimum connection interval for all eight BLE peripheral connections (SiWx91x as central) should be 200 ms.
  - The first BLE central connection interval (SiWx91x as peripheral) should be at least 45 ms.
  - The second BLE central connection interval (SiWx91x as peripheral) should be at least 500 ms.
  - A minimum supervision timeout of 8 seconds is mandatory for all BLE connections.
  - The BLE advertising interval should be configured to 211.25 msec.
  - The BLE scan window and scan interval should be in a 1:3 ratio.
  - SMP pairing is limited to I/O-Capabilities `0x00`, `0x01` and `0x03`.
- Wi-Fi + AE BLE with two concurrent (either two central, two peripheral, or one central and one peripheral) connections is supported with the following restrictions:
  - Only supported with a `SL_SI91X_EXT_FEAT_480K_M4SS_192K RAM` configuration (480 KB network processor + 192 KB application processor) and `SL_SI91X_EXT_FEAT_416K_M4SS_256K` configuration (416 KB network processor + 256 KB application processor).
  - Only supported with network processor power save enabled.
  - Not supported on the PSRAM radio board ([SiWx91x-RB4342A](#)).
  - Not supported with an encrypted connectivity (network processor) firmware image.
  - Not supported with Target Wake Time (TWT) based wakeup.
  - Not supported with RPA.
  - Not supported with periodic advertising.
  - Not supported in NCP mode.
- For Wi-Fi + AE BLE with four concurrent (either two central, two peripheral, or one central and one peripheral) connections:
  - The scan window and interval should be in a 1:3 ratio.
  - A maximum of two advertising sets are supported.
  - A maximum supported AE data length is 200 bytes.

SiWx91x Platform

- 16 MB flash is not supported.
- 16 MB PSRAM is not supported.
- 1.8 V Supply is not supported.
- Depending on the crypto engine in use, except HMAC and SHA/SHA3, the input message length limit must not exceed its defined maximum. Refer to the crypto engine's documentation or SDK specifications for exact limits and details.
- Multi-part operations are not supported for AES-GCM due to hardware limitations.

SDK Release and Maintenance Policy

See [here](#) for our SDK release and maintenance policy.

Wi-Fi

WiSeConnect - Wi-Fi SDK Version 4.0.0 (Jan 22, 2026) - Release Notes

Wi-Fi 6 + BLE (WiSeConnect) SDK Version 4.0.0

Simplicity SDK Version 2025.12.0

The Wi-Fi Software Development Kit (SDK) provides Wi-Fi 6 connectivity in various operating modes, including Station and Software Access Point (SoftAP).

Click here for earlier releases.

Release Summary

Key Features | API Changes | Bug Fixes | Chip Enablement

Key Features

- Added Wi-Fi Protected Setup (WPS) Push Button Configuration (PBC) feature support in Station mode
- Vendor-specific IE support for Station (STA), SoftAP, and Concurrent Modes

API Changes

- sl_net_up_async
- sl_wifi_get_saved_firmware_status

Bug Fixes

- Fixed an issue where HTTP server encounters a connection timeout error when the web page is refreshed multiple times.
- Added support for configurable PEAP security levels (PEAPSAFE1, PEAPSAFE2) through new encryption enum members to enhance enterprise Wi-Fi authentication security.

Chip Enablement

None

Key Features

New Features | Enhancements | Removed Features | Deprecated Features

> Note: See Feature Matrix for a list of any applicable APIs, examples, software variants, modes, hardware, and host interfaces applicable for each feature.

New Features

- Added Wi-Fi Protected Setup (WPS) Push Button Configuration (PBC) feature support in Station mode
- Vendor-specific IE support for STA, SoftAP, and Concurrent Modes

- An additional configurable option for Hidden SSID has been introduced in the `sli_wifi_start_ap` API, complementing the existing opermode configuration. The Hidden SSID can be configured via the `sli_wifi_start_ap` API only when SL_WIFI_CUSTOM_FEAT_AP_IN_HIDDEN_MODE is not enabled in `custom_feature_bit_map`.
- Added support for reporting Wi-Fi band information for scanned access points in Wi-Fi scan results.
- Improved SoftAP scan functionality to provide more than 11 scan results.

Enhancements

None

Removed Features

None

Deprecated Features

None

API Changes

New APIs | Modified APIs | Removed APIs | Deprecated APIs

New APIs

New API Signature	Deprecated API replaced by this (if any)
sl_status_t sl_wifi_get_interface_info (sl_wifi_interface_t interface, sl_wifi_interface_info_t *info)	sl_status_t sl_wifi_get_wireless_info (sl_si91x_rsp_wireless_info_t *info)
sl_status_t sl_wifi_set_scan_callback_v2 (sl_wifi_scan_callback_v2_t function, void *optional_arg)	sl_status_t sl_wifi_set_scan_callback (sl_wifi_scan_callback_t function, void *optional_arg)
sl_status_t sl_wifi_set_join_callback_v2 (sl_wifi_join_callback_v2_t function, void *optional_arg)	sl_status_t sl_wifi_set_join_callback (sl_wifi_join_callback_t function, void *optional_arg)
sl_status_t sl_wifi_set_twt_config_callback_v2 (sl_wifi_twt_config_callback_v2_t function, void *optional_arg)	sl_status_t sl_wifi_set_twt_config_callback (sl_wifi_twt_config_callback_t function, void *optional_arg)
sl_status_t sl_wifi_set_stats_callback_v2 (sl_wifi_stats_callback_v2_t function, void *optional_arg)	sl_status_t sl_wifi_set_stats_callback (sl_wifi_stats_callback_t function, void *optional_arg)
sl_status_t sl_wifi_set_transceiver_callback_v2 (sl_wifi_transceiver_callback_v2_t function, void *optional_arg)	sl_status_t sl_wifi_set_transceiver_callback (sl_wifi_transceiver_callback_t function, void *optional_arg)
sl_status_t sl_wifi_start_wps_v2 (sl_wifi_interface_t interface, sl_wifi_wps_config_t config, sl_wifi_wps_response_t *response)	sl_status_t sl_wifi_start_wps (sl_wifi_interface_t interface, sl_wifi_wps_mode_t mode, const sl_wifi_wps_pin_t *optional_wps_pin)
sl_status_t sl_wifi_get_saved_firmware_status (void)	sl_status_t sl_si91x_get_saved_firmware_status (void)
sl_status_t sli_net_register_event_handler (sli_net_event_handler_t handler, void *optional_arg)	sl_status_t sl_si91x_register_event_handler (sl_si91x_event_handler_t handler, void *optional_arg)

New API Signature	Deprecated API replaced by this (if any)
sl_status_t sli_net_set_credential (const sli_net_credential_t *credential)	sl_status_t sl_si91x_set_credential (const sl_si91x_credential_t *credential)
sl_status_t sli_net_get_credential (sl_net_credential_id_t credential_id, sli_net_credential_t *credential)	sl_status_t sl_si91x_get_credential (sl_si91x_credential_id_t credential_id, sl_si91x_credential_t *credential)
sl_status_t sli_net_delete_credential (sl_net_credential_id_t credential_id)	sl_status_t sl_si91x_delete_credential (sl_si91x_credential_id_t credential_id)

Modified APIs

None

Removed APIs

None

Deprecated APIs

Deprecated API Name	Planned Removal Date
sl_wifi_get_wireless_info	2027-06
sl_wifi_set_scan_callback	2027-06
sl_wifi_set_join_callback	2027-06
sl_wifi_set_twt_config_callback	2027-06
sl_wifi_set_stats_callback	2027-06
sl_wifi_set_transceiver_callback	2027-06
sl_wifi_start_wps	2027-06
sl_si91x_get_saved_firmware_status	2027-06
sl_si91x_register_event_handler	2027-06
sl_si91x_set_credential	2027-06
sl_si91x_get_credential	2027-06
sl_si91x_delete_credential	2027-06

Bug Fixes

Note: See the Feature Matrix section for a list of all hardware parts that work with the WiSeConnect SDK.

ID	Issue Description	GitHub / Salesforce Reference (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1465518	Fixed an issue where HTTP server encounters a connection timeout error when the webpage is refreshed multiple times.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1502308	Refactored socket allocation logic to use malloc/memset pattern with intermediate variable for improved error handling.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1522478	Improved async event processing and error handling.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1496506	The `sl_net_init()` API now returns an error if an attempt is made to modify the region code on modules where this operation is not permitted.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1365272	Added configurable timeout mechanism with scaling macros for management, internal, and network commands, plus additional wait time for buffer overflow and congestion scenarios. Defaults set to '1'.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1467697	Added support for Wi-Fi examples to the OPNs SIWG917Y121MGABA and SIWG917Y110LGABA	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1452673	Fixed a DTLS data transmission issue where packets could be lost if error 0x100D2 occurred, by implementing an automatic retry mechanism in the DTLS application with a default maximum of 3 retries.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART

ID	Issue Description	GitHub / Salesforce Reference (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1451080	Added the nvm3_lib component in the nvm3 config manager component instead of adding the nvm3_lib component for every application	None	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
1407301	Azure IoT Hub and Device Provisioning Service (DPS) are migrating their certificate root of trust from the Baltimore CyberTrust Root (expiring in 2025) to the DigiCert Global Root G2. All devices must migrate from azure_baltimore_ca to silabs_digicert_ca for secure TLS connection with Azure IoT Hub and Azure sotrage services.	None	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
1409946	Added support for configurable PEAP security levels (PEAPSAFE1, PEAPSAFE2) through new encryption enum members for enhanced enterprise Wi-Fi authentication security.	None	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
1376228	Resolved firmware corruption during TLS socket cleanup post-IP change during DHCP renewal.	None	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
1371879	Updated `sl_si91x_get_socket_info` API to provide host socket info.	None	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
1268204	Deinitialize the Wi-Fi client interface when the power save profile is set to DEEP_SLEEP_WITHOUT_RAM_RETENTION.	None	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
1450227	SLI_MAX_RETRANSMISSION_TIME_VALUE has been updated to 255 (the maximum supported value) and can now be configured as a power of two from 1 to 128.	None	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART

ID	Issue Description	GitHub / Salesforce Reference (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1441131	Replaced all breakpoints with the timeout indication recovery mechanism and with proper status.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1466129	Fixed static analysis issue by ensuring listen_interval is cast to uint16_t before assignment in the power save request struct.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1463798	Default configurations for Power Save Standby including NCP SoC and PSRAM are available when installing the Configuration Wizard.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1490559	The maximum client limit defined in the AP profile configuration will now automatically adjust if it exceeds the value set in the opermode configuration.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1426767	Replaced mixed BSD and sl-sockets with SiWx91x async sockets in `sli_http_server()`.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1455876	Added configurable max retransmission timeout using AWS_IOT_MAX_RETRANSMISSION_TIMEOUT macro to avoid disconnection in case of AWS MQTT.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1464308	Resolved extended scan functionality by eliminating global variable dependency and ensuring controlled access.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART

ID	Issue Description	GitHub / Salesforce Reference (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1343541	Refactor the join configuration APIs from `sl_si91x_` to `sl_wifi_` .	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1467293	Resolved 'connection reset by peer' errors in RX scenarios for TCP, UDP, and TLS across all applications.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1464725	Added a conditional check to prevent setting WLAN_UNCONNECTED_STATE if the DUT is already connected.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1308081	For wlan throughput UART NCP applications, the handshake feature bit (SL_SI91X_FEAT_ULP_GPIO_BASED_HANDSHAKE) is enabled by default to ensure reliable socket connections and proper power save operation. You can control this feature using the SL_ENABLE_UART_NCP_BITMAP macro in your preprocessor settings.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1384564	Fixed callback status update order to maintain correct status in loop operation	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1478000	Added `sl_string.h` header file to provide proper declaration for `sl_strnlen()` function. Replaced standard `strnlen()` with SDK-specific `sl_strnlen()` implementation. Eliminates implicit declaration warnings and compilation failures.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1371872	Resolved the AzureIOT connection issue in the process loop by adding state machine checks.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART

ID	Issue Description	GitHub / Salesforce Reference (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1288559	Added the validation for client idle timeout in AP configuration and mentioned the note of its range and units.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1478082	Before each Wi-Fi scan, scan_complete and callback_status are now reset to ensure accurate results.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1513128	The default value of client_idle_timeout value is updated from 120000 to 255.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1385303	Added support for multiple network interface initialization tracking	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1455151	Fixed the network manager thread stack overflow during `sl_net_deinit()` by increasing default stack size to 3072 bytes and making it configurable via NETWORK_MANAGER_THREAD_STACK_SIZE.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1402599	To ensure the TA is also reset during an NCP reset, we are adding a call to sl_wifi_deinit() in the reset handler.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1467508	Wi-Fi initialization and deinitialization are managed only by the main application. This change prevents conflicts and ensures reliable operation during firmware updates. No impact to normal operation.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART

ID	Issue Description	GitHub / Salesforce Reference (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1321102	Adding continuous throughput for TCP RX and UDP RX in `wifi_station_ble_throughput_app`.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1407525	Replaced `NVIC_SystemReset()` with `sl_si91x_soc_nvic_reset()` in wireless test example for SoC	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: SPI, UART
1499542	Fix socket shutdown sequence for TCP server socket in the throughput test	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1511479	Restrict the module from setting the SL_SI91X_EXT_FEAT_FRONT_END_SWITCH_PINS_ULP_GPIO_4_5_0 bit.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1533724	Added certificate index for HTTPS GET/POST	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART

ID	Issue Description	GitHub / Salesforce Reference (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1515226	Replaced ACX module guard with internal antenna macro in sl_wifi_device.h	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1524218	Added error handling if any of the configuration is missed in the application. Enhanced MAX PSP is supported when the profile is set to ASSOCIATED_POWER_SAVE_LOW_LATENCY and SL_WIFI_ENABLE_ENHANCED_MAX_PSP bit is enabled in the config feature bitmap.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1449759	Added `sl_http_server_init` API checking if device is up or not.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1535260	For open security (SL_WIFI_OPEN), set `credential_id` to SL_WIFI_NO_CREDENTIAL_ID to avoid unnecessary credential fetch.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1456936	Added `sl_net_get_interface_info()` and `sl_wifi_get_interface_info` APIs to retrieve detailed stats for AP and Station interfaces in concurrent Wi-Fi mode. Deprecated `sl_wifi_get_wireless_info()` due to limited support for multi-interface scenarios.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1475983	Added support to configure the open security type option in examples that use HTTP server feature.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1425961	Added a toggle button in the WDT Manager configuration UI to enable or disable the NWP Watchdog Timer (WDT), along with a corresponding value setting for NWP.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART

ID	Issue Description	GitHub / Salesforce Reference (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1523410	Reduced congestion timeout from 400ms to 30ms to improve scan efficiency and performance.	None	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
1502519	Handled a negative scenario where the listen interval aligned with the DTIM beacon.	None	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
1517229	Fixed a hang in Concurrent mode where the DUT became unresponsive while attempting to obtain an IPv6 address.	None	• Firmware variants: Standard only • OPNs: All except SIWG917M110LGTBA (Lite OPN) • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
1532848	Fixed an issue where DUT incorrectly enabled MFP configuration for AP mode with WPA2 security	None	• Firmware variants: Standard only • OPNs: All except SIWG917M110LGTBA (Lite OPN) • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
1456765	Added support to select TKIP cipher suite for WPA connections to access points supporting mixed encryption modes (TKIP+CCMP).	None	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
1462913	Resolved a stability issue that caused the DUT to hang during continuous DTLS data transfers while operating in WLAN + BLE power save mode on a secure board.	None	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART

ID	Issue Description	GitHub / Salesforce Reference (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1435744	Support added to handle broadcast de-authentication packets in concurrent station mode.	None	• Firmware variants: Standard only • OPNs: All except SIWG917M110LGTBA (Lite OPN) • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
1405635	Fixed beacon and broadcast reception issues in congested environments.	None	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
1518842	Fixed an issue where the module was incorrectly identifying early beacons from the AP, leading to excessive power consumption during long-run tests.	None	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART

Chip Enablement

None

Application Example Changes

New Examples | Modified Examples | Removed Examples | Deprecated Examples

> Note: See the Feature Matrix section for a list of all hardware parts that work with the WiSeConnect SDK.

New Examples

Example Name	Description	Supported Software Variants (if applicable)	Supported Modes	Supported OPNs / Boards / OPN Combinations	Supported Host Interfaces
Wi-Fi 6 MIMO Throughput See README	Demonstrates Wi-Fi 6 2x2 MIMO functionality, including connecting to a Wi-Fi 6 Access Point and running throughput tests.	Standard and Lite	• SoC • NCP	• OPNs: All • Boards: All	SPI, UART
WPS Push Button Configuration See README	Demonstrates using Wi-Fi Protected Setup (WPS) Push Button Configuration (PBC) to connect the device to an access point with minimal user interaction.	Standard and Lite	• SoC • NCP	• OPNs: All • Boards: All	SPI, UART

Example Name	Description	Supported Software Variants (if applicable)	Supported Modes	Supported OPNs / Boards / OPN Combinations	Supported Host Interfaces
Access Point V6 See README	Demonstrates how to set up the device as an IPv6-enabled Wi-Fi Access Point and handle stations joining with IPv6 addresses.	Standard and Lite	• SoC • NCP	• OPNs: All • Boards: All	SPI, UART

Modified Examples

Example Name	Changes	Supported Software Variants if applicable	Supported Modes	Supported OPNs / Boards / OPN Combinations	Supported Host Interfaces
AWS Device Shadow See README	Bug fixes in Wi-Fi connection sequence and error recovery. Improved logging. Minor compatibility improvements.	Standard and Lite	• SoC • NCP	• OPNs: All • Boards: All	SPI, UART
Powersave Standby Associated See README	Corrected bugs in standby/resume event sequence. Improved standby re-association reliability.	Standard and Lite	• SoC • NCP	• OPNs: All • Boards: All	SPI, UART
Powersave Standby Associated TCP Client See README	Bug fixes for TCP state handling during and after standby. Enhanced error responses and connection recovery.	Standard and Lite	• SoC • NCP	• OPNs: All • Boards: All	SPI, UART
TWT TCP Client See README	Addressed issues in Target Wake Time negotiation. Improved fallback handling. Refined power management routines.	Standard and Lite	• SoC • NCP	• OPNs: All • Boards: All	SPI, UART
Wi-Fi Throughput See README	Resolved packet buffer handling bugs. Fixed callback issues for transmit/receive. Improved throughput reporting stability. Increased the optimization level to O3 for the Wi-Fi Throughput example application to improve the performance with ARM Compiler 6 toolchain.	Standard and Lite	• SoC • NCP	• OPNs: All • Boards: All	SPI

Removed Examples

None

Deprecated Examples

None

Known Issues and Limitations

> Note: See the Feature Matrix section for a list of all hardware parts that work with the WiSeConnect SDK.

ID	Issue or Limitation Description	GitHub / Salesforce Reference (if any)	Workaround (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1451898	Added validation for SSID, PSK, and PMK lengths in credential and profile management functions to prevent invalid credentials from being set without error.	None	None	- Software variants: Standard and Lite - OPNs: All except IC OPNs - Boards: All applicable boards - Modes: SoC, NCP - Host interfaces: SPI, UART
1494454	APUT sends deauthentication frames with an unspecified reason to a few stations when 8 stations are connected to it in a congested environment.	None	None	- Software variants: Standard only - OPNs: All except SIWG917M110LGTBA (Lite OPN) - Boards: All applicable boards - Modes: SoC, NCP - Host interfaces: SPI, UART
1458372	MCS rates drop in between data transfers causing a reduction in SSL RX throughput.	None	None	- OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
N/A	Command Engine stack overflow can occur if local variables are used in user callback.	None	None	- OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
N/A	When scanning with low-power mode is enabled, a WLAN sensitivity degradation of 3-6 dB is observed, which might prevent access points at longer ranges from appearing in the scan results.	None	None	- OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1199044	Connection issues may be seen with configuring certificate key and programming 4096 bit key and SHA384 / SHA512 certificates in station mode with WPA2 enterprise security.	None	None	- OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
N/A	Less throughput observed in DL-OFDMA with some access points that enabled low-density parity check coding.	None	None	- OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1357685	Extended scan results are not supported with MBSSID feature enabled.	None	None	- OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART

ID	Issue or Limitation Description	GitHub / Salesforce Reference (if any)	Workaround (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1350997	Advance Scan is not supported in AP mode.	None	None	- OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1454142	The beacon reception region is elongated before the PS Poll is sent, leading to increased current consumption, under -85 dB RSSI and 70% congestion.	None	None	- OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1439592	SiWx917 power save does not work in station mode when M4 retention is disabled and network processor (NWP) memory is configured at 416 KB or 480 KB.	None	None	- OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1443112	CSA with power save enabled may cause the SiWx917 device to re-join the access point.	None	None	- OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1218972	When the `sl_wifi_enable_target_wake_time` API is used, occasional MQTT disconnections may be observed if TWT is configured with longer TWT intervals (>30 seconds) with embedded MQTT + TWT.	None	Use the `sl_wifi_target_wake_time_auto_selection` API where these dependencies are internally handled.	- OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1569122	Repeatedly adding and removing two vendor-specific information elements exceeding 40 bytes in length fails.	None	None	- OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1569067	Overriding a vendor-specific IE using a duplicate unique ID in Concurrent Mode causes WLAN connection failure.	None	None	- OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1568732	Vendor-specific IEs are unsupported in BGSCAN probe request frames.	None	None	- OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1568490	Malformed packets are observed when validating vendor-specific information elements in beacons, probe responses, and association responses.	None	None	- OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART

ID	Issue or Limitation Description	GitHub / Salesforce Reference (if any)	Workaround (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1557787	Under network congestion, enabling both NAT and PAT features in concurrent mode sometimes causes DHCP failures.	None	None	- OPNs: All - Boards: All - Modes: SoC - Host interfaces: SPI, UART
1569583	IPv6 functionality fails in `lwip_mqtt_over_tcp` application: Global Address and Gateway Address return invalid IPv6 addresses (::), causing MQTT over TCP to fail with error code -1. Link Local Address is correctly assigned, but Global Address remains invalid.	None	None	- OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1569213	AT command `at+cal-start` fails with error code 4 in at_commands application on SoC with encryption enabled. M4 power save functionality continues to operate correctly despite the command failure.	None	None	- OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1517324	Fixed `sl_wifi_set_performance_profile()` API to prevent data corruption by replacing `memcpy` between incompatible structures with explicit assignment of `listen_interval`, `monitor_interval`, `twt_request`, and `twt_selection` fields. Users should migrate to `sl_wifi_set_performance_profile_v2()` for improved safety and handling.	None	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1574418	Using `slc generate --toolchain gcc` or `slc generate --with toolchain_gcc` may fail with exclusivity errors due to the `wiseconnect_toolchain_gcc_standard` component incorrectly providing `toolchain_gcc`, resulting in a conflict with the SiSDK `toolchain_gcc` component. If using those two command line options results in exclusivity errors, then you can remove them. Note that in a future WiseConnect release, you might have to reintroduce the toolchain option on the command line. Refer to future WiseConnect release notes for updates on possible behavior changes.	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART

Network Stack

WiSeConnect - Network Stack Version 4.0.0 (Jan 22, 2026) - Release Notes

Wi-Fi 6 + BLE (WiSeConnect) SDK Version 4.0.0

Simplicity SDK Version 2025.12.0

The Network Stack Software Development Kit (SDK) provides core and advanced networking features with Wi-Fi IoT cloud integration.

Click here for earlier releases.

Release Summary

Key Features | API Changes | Bug Fixes | Chip Enablement

Key Features

- Optimized LwIP timer management for improved performance and efficiency.
- Added DNS Service Discovery (DNS-SD) support via mDNS for both IPv4 and IPv6.

API Changes

- Added new MQTT API to support publish, subscribe, and manage MQTT connections directly from the network stack.

Bug Fixes

- Resolved an issue where consecutive HTTPS requests (GET/PUT/POST) could fail due to incomplete socket cleanup.
- Resolved HTTP server stability issues under congested network conditions.
- Resolved remote termination issues occurring during socket open/close operations in a loop.
- Resolved a DTLS synchronization issue that could interrupt data transmission and reception.
- Resolved TLS data transfer stability issues in 352/320k mode when power save is enabled.

Chip Enablement

None

Key Features

New Features | Enhancements | Removed Features | Deprecated Features

> Note: See Feature Matrix for a list of any applicable APIs, examples, software variants, modes, hardware, and host interfaces applicable for each feature.

New Features

- Added DHCP support from the host for IPv4 in Dual stack mode.

- Added SNI extension support for Embedded MQTT.
- Added NAT/PAT feature support.
- Added DNS IP address support in AP mode.
- Added support for Subject Name validation during TLS connections.
- Added IPv6 support in Dual Stack mode.
- Added DNS-SD support over mDNS for IPv4/IPv6.
- Added adaptive timer optimizations in Hosted Network stack LWIP (IPv6 ND6, DHCP, DNS, ARP, ACD, TCP, MLD6) to improve power efficiency.

Enhancements

None

Removed Features

None

Deprecated Features

None

API Changes

New APIs | Modified APIs | Removed APIs | Deprecated APIs

New APIs

New API Signature	Deprecated API replaced by this (if any)
sl_status_t sl_mqtt_client_connect_v2 (sl_mqtt_client_t *client, const sl_mqtt_broker_v2_t *broker, const sl_mqtt_client_last_will_message_t *last_will_message, const sl_mqtt_client_configuration_t *configuration, uint32_t connect_timeout)	sl_status_t sl_mqtt_client_connect (sl_mqtt_client_t *client, const sl_mqtt_broker_t *broker, const sl_mqtt_client_last_will_message_t *last_will_message, const sl_mqtt_client_configuration_t *configuration, uint32_t connect_timeout)

Modified APIs

None

Removed APIs

None

Deprecated APIs

Deprecated API Name	Planned Removal Date
sl_mqtt_client_connect	2027-06

Bug Fixes

Note: See the Feature Matrix section for a list of all hardware parts that work with the WiSeConnect SDK.

ID	Issue Description	GitHub / Salesforce Reference (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1559294	Resolved an issue where consecutive HTTPS requests (GET/PUT/POST) could fail due to incomplete socket cleanup.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1528819	Resolved HTTP server stability issues under congested network conditions.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1535940	Resolved remote termination issues occurring during socket open/close operations in a loop.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1498368	Resolved a DTLS synchronization issue that could interrupt data transmission and reception.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1463929	Resloved a wrap operation issue when performing TLS transmission and HMAC operations concurrently in two application threads.	None	- OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1454747	Resolved firmware upgrade stability issues with proper resource cleanup.	None	- OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1392151	Resolved TLS data transfer stability issues in 352/320k mode when power save is enabled.	None	- OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART

Chip Enablement

None

Application Example Changes

New Examples | Modified Examples | Removed Examples | Deprecated Examples

> Note: See the Feature Matrix section for a list of all hardware parts that work with the WiSeConnect SDK.

New Examples

Example Name	Description	Supported Software Variants (if applicable)	Supported Modes	Supported OPNs / Boards / OPN Combinations	Supported Host Interfaces
Paho MQTT Client over LwIP TCP See README	Demonstrates configuring a SiWx91x device as an MQTT client using the Paho MQTT library over TCP/IP with the LwIP stack. Connecting to an MQTT broker in Wi-Fi station mode to subscribe to topics and publish messages, with optional SSL/TLS encryption support.	Standard and Lite	• SoC • NCP	• OPNs: All • Boards: All	SPI, UART
mDNS Advertising and Discovery See README	Demonstrates use of Multicast DNS (mDNS) to discover services and devices on the local network. Shows registration and resolution of service instances.	Standard and Lite	• SoC • NCP	• OPNs: All • Boards: All	SPI, UART

Modified Examples

None

Removed Examples

None

Deprecated Examples

None

Known Issues and Limitations

ID	Issue or Limitation Description	GitHub / Salesforce Reference (if any)	Workaround (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1427832	Observed TLS data transfer failures in congested environments during long runs when power save is enabled.	None	None	• Software variants: Standard and Lite • OPNs: All except IC OPNs • Boards: All applicable boards • Modes: SoC, NCP • Host interfaces SPI, UART

ID	Issue or Limitation Description	GitHub / Salesforce Reference (if any)	Workaround (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
745282	Occasionally, during a TLS handshake, the device generates incorrect ECC curve parameters, causing a connection failure that results in a `BBD2` error.	None	The error is recovered in the next attempt.	- OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI
1133422	HTTP PUT does not support the SNI extension.	None	None	- OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI
1570754	WebSocket connections could fail with error code -3 when connecting to certain servers.	None	None	- OPNs: All - Boards: All - Modes: SoC - Host interfaces: SPI
1571019	mDNS discovery may fail when data transfer is active during multiple iterations.	None	None	- OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI
1571021	mDNS start/stop with multiple services fails during multiple iterations.	None	None	- OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI
1571024	SRV and TXT query types in mDNS discovery are currently not functioning as expected.	None	None	- OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI
NA	The power-saving benefits of the hosted Network Stack LWIP may not be fully realized when IPv6 mode is enabled if the network infrastructure lacks IPv6 support.	None	None	- Software variants: Standard and Lite - OPNs: All except IC OPNs - Boards: All applicable boards - Modes: SoC, NCP - Host interfaces SPI, UART
NA	External connections to services hosted within the NAT environment are not supported.	None	None	- Software variants: Standard and Lite - OPNs: All except IC OPNs - Boards: All applicable boards - Modes: SoC, NCP - Host interfaces SPI, UART

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ID	Issue or Limitation Description	GitHub / Salesforce Reference (if any)	Workaround (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
NA	NAT/PAT is incompatible with protocols and applications that embed IP address and port number information within the payload (examples include SMTP, SNMP, and similar protocols).	None	None	- Software variants: Standard and Lite - OPNs: All except IC OPNs - Boards: All applicable boards - Modes: SoC, NCP - Host interfaces SPI, UART
NA	Network traffic translation and additional processing requirements result in increased latency and reduced throughput performance.	None	None	- Software variants: Standard and Lite - OPNs: All except IC OPNs - Boards: All applicable boards - Modes: SoC, NCP - Host interfaces SPI, UART
NA	Inbound traffic routing is not supported by the current implementation.	None	None	- Software variants: Standard and Lite - OPNs: All except IC OPNs - Boards: All applicable boards - Modes: SoC, NCP - Host interfaces SPI, UART
NA	Outbound ICMP traffic (ping requests) is restricted to a maximum payload size of 300 bytes.	None	None	- Software variants: Standard and Lite - OPNs: All except IC OPNs - Boards: All applicable boards - Modes: SoC, NCP - Host interfaces SPI, UART
N/A	TLS or DTLS connections must be initiated sequentially after the completion (success or failure) of the previous connection.	None	None	- OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
N/A	Power save with TCP/IP is not supported with the UART host interface in the non-bypass mode.	None	None	- OPNs: All - Boards: All - Modes: NCP - Host interfaces: UART

ID	Issue or Limitation Description	GitHub / Salesforce Reference (if any)	Workaround (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
N/A	Embedded MQTT usernames are supported only up to 120 bytes.	None	None	• OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI
N/A	Embedded MQTT topic lengths are supported only up to 200 bytes.	None	None	• OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI
N/A	Embedded MQTT passwords are supported only up to 62 bytes.	None	None	• OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI
N/A	HTTP GET URL lengths are only supported up to 2048 bytes.	None	None	• OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI
N/A	More than three SSL connections are not supported.	None	None	• OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI
N/A	The combined length of the mDNS service type and instance name is limited to 30 bytes maximum.	None	None	• OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI
1569000	TCP socket send API fails with error code 33 in at_commands application on SoC with encryption enabled, preventing TCP data transmission.	None	None	• OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
1562633	MQTT publishing stops during BLE + Wi-Fi coexistence testing when BLE scanning is active in long run.	None	None	• OPNs: All • Boards: All • Modes: NCP • Host interfaces: SPI, UART
1556585	Automatic reconnection to AWS MQTT broker fails after Wi-Fi rejoin in NCP mode. If rejoin interval exceeds 10 seconds, the application hangs waiting for select_sem semaphore (timeout after 512 seconds). Manual reconnection or device reboot is required. Issue is NCP-specific and does not occur in SoC mode.	None	None	• OPNs: All • Boards: All • Modes: NCP • Host interfaces: SPI, UART

ID	Issue or Limitation Description	GitHub / Salesforce Reference (if any)	Workaround (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1574418	Using `slc generate --toolchain gcc` or `slc generate --with toolchain_gcc` may fail with exclusivity errors due to the `wiseconnect_toolchain_gcc_standard` component incorrectly providing `toolchain_gcc`, resulting in a conflict with the Simplicity SDK `toolchain_gcc` component. If using those two command line options results in exclusivity errors, then you can remove them. Note that in a future WiseConnect release, you might have to reintroduce the toolchain option on the command line. Refer to future WiseConnect release notes for updates on possible behavior changes.	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART

WiSeConnect - SiWx91x Bluetooth LE SDK Version 4.0.0 (Jan 22, 2026) - Release Notes

Wi-Fi 6 + BLE (WiSeConnect) SDK Version 4.0.0

Simplicity SDK Version 2025.12.0

The SiWx91x Bluetooth LE Software Development Kit (SDK) provides feature-rich Bluetooth 5 connectivity with multi-connection capabilities, advanced advertising extensions, and power optimization for diverse IoT applications.

Click here for earlier releases.

Release Summary

Key Features | API Changes | Bug Fixes | Chip Enablement

Key Features

None

API Changes

None

Bug Fixes

- Multiple BLE issues were resolved, including legacy pairing, asynchronous attribute-value handling, incorrect passkey generation, and the WLAN Power Save Disable API.
- Stability and performance improvements were made by fixing DUT hang conditions, TX notification delays with 10 BLE connections, and issues in dense environments for multi-connection applications.
- Additional updates include removing unsupported KCC values, fixing the unused NUM_PKTS macro, and resolving local ATT-value failures with variable-length characteristics.

Chip Enablement

None

Key Features

New Features | Enhancements | Removed Features | Deprecated Features

> Note: See Feature Matrix for a list of any applicable APIs, examples, software variants, modes, hardware, and host interfaces applicable for each feature.

New Features

None

Enhancements

- Reduced active time during extended advertising events to improve power efficiency and performance.
- Updated BLE synchronous and Asynchronous APIs descriptions for improved clarity and accuracy.
- Updated the description of the SL_SI91X_BT_BLE_STACK_BYPASS_ENABLE macro to clarify that it should only be used with Zephyr.
- Added additional documentation notes for the RSI_BLE_NUM_REC_BYTES macro in the `ble_custom_ext_feature_bit_map` configuration to clarify its usage and behavior.
- Replaced legacy UART APIs with Silicon Labs UART APIs in `bt_stack_bypass` app.

Removed Features

None

Deprecated Features

None

API Changes

New APIs | Modified APIs | Removed APIs | Deprecated APIs

New APIs

- Added rsi_ble_acceptlist_on_type API to set the acceptlist filter based on advertising data type, length, and value.

Modified APIs

None

Removed APIs

None

Deprecated APIs

None

Bug Fixes

> Note: See the Feature Matrix section for a list of all hardware parts that work with the WiSeConnect SDK.

ID	Issue or Limitation Description	GitHub / Salesforce Reference (if any)	Workaround (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1543604	Fixed a BLE connection timeout (0x4E08) issue during simultaneous bidirectional TX/RX data transfers of 230 bytes across 10 BLE connections.	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1514763	Fixed an issue where BLE legacy pairing failed when the DUT was configured with the 'Keyboard Display' IO capability and the NRF dongle was set to `Display YesNo` .	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1509492	Fixed an issue where `rsi_ble_set_att_value_async` API fails with a 0x4E60 (Invalid Handle Range) error code when performing connect, disconnect, and reconnection tests with glucose applications.	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1497730	Resolved DUT hang occurring after approximately 6 hours during repeated peripheral connect/disconnect cycles while performing TX/RX notifications with 10 BLE connections.	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1496803	Fixed an issue where the device delayed TX notifications to a central device by approximately 40-50 seconds when performing simultaneous bidirectional data transfers (TX/RX) with 10 BLE connections.	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1465165	Fixed an issue where the device incorrectly generated a passkey during BLE pairing when the initiator (DUT) I/O capability was configured as `Keyboard Display` and the responder as `Display Only` .	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART

ID	Issue or Limitation Description	GitHub / Salesforce Reference (if any)	Workaround (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1516085	Replaced legacy UART API with Silicon Labs UART APIs in the `bt_stack_bypass` application.	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1505006	Removed KCC region values from the BLE IC max power regulatory tables as the devices are not tested for KCC compliance.	None	None	- Software variants: Standard and Lite - OPNs: All ICs (SiWx917M) only - Boards: All ICs (SiWx917M) related boards only - Modes: SoC, NCP - Host interfaces: SPI, UART
1516551	Fixed an issue where the NUM_PKTS macro was defined but not used in the BLE PER application.	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1506132	Fixed an issue where the `rsi_ble_set_local_att_value` API returned error code 0x4046 when services were maintained in firmware with the VARIABLE_LENGTH_CHARACTERISTICS feature.	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1463443	Fixed an issue where the WLAN Power Save Disable API failed to disable power save mode in the `ble_secureconnection_psram` application.	None	None	- Software variants: Standard and Lite - OPNs: PSRAM - Boards: All - Modes: SoC - Host interfaces: N/A
1488482	Fixed a hang issue that occurred while processing the connection parameter update response command during testing with 10 BLE connections using an encrypted image with both TA and M4 power-save modes enabled.	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART

Chip Enablement

None

Application Example Changes

New Examples | Modified Examples | Removed Examples | Deprecated Examples

> Note: See the Feature Matrix section for a list of all hardware parts that work with the WiSeConnect SDK.

New Examples

None

Modified Examples

None

Removed Examples

None

Deprecated Examples

None

Known Issues and Limitations

> Note: See the Feature Matrix section for a list of all hardware parts that work with the WiSeConnect SDK.

ID	Issue or Limitation Description	GitHub / Salesforce Reference (if any)	Workaround (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1504605	For ICs, customers must obtain certification for the required regions. After certification, the corresponding values are loaded through the "BLE – Update Gain Table" APIs.	None	None	• Software variants: Standard and Lite • OPNs: All except SiW917Y1GN and SiW917Y1GA modules • Boards: All applicable boards • Modes: SoC, NCP • Host interfaces: SPI, UART

ID	Issue or Limitation Description	GitHub / Salesforce Reference (if any)	Workaround (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1458618	The `ble_data_length` application example does not work with 121x and 141x PSRAM OPNs.	None	None	- Software variants: Standard and Lite - OPNs: 121x and 141x PSRAM OPNs - Boards: All applicable boards - Modes: SoC - Host interfaces: N/A
1465175	The SiWx917 device hangs when power-save mode is enabled during BLE transmit and receive (TX/RX) notifications using the HP chain.	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1371967	BLE anchor points were missing during packet exchanges with the PTS dongle when the connection interval (CI) exceeded 960 ms and the supervision latency (SL) was set to 5.	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1523829	The minimum supported BLE GATT capability is limited to 4 services and 20 attributes for all memory configurations.	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1567221	The output transmit power on the BLE HP chain may be higher in end-to-end mode compared to PER test mode across temperatures.	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
N/A	The BLE secondary latency value is valid only up to 32.	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART

ID	Issue or Limitation Description	GitHub / Salesforce Reference (if any)	Workaround (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
N/A	Maximum supported AE data length is 200 bytes.	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
N/A	Supports only two `ADV_EXT` sets.	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
N/A	Supports only two simultaneous BLE connections (either two peripheral, two central, or one central and one peripheral) when Advertising Extensions are enabled.	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
N/A	System-level changes introduced to enhance stability have resulted in some increase in power numbers (up to 15% for smaller connection interval of 200 ms) for BLE connected only cases for modules only. Impact is smaller for longer connection intervals.	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1574418	Using `slc generate --toolchain gcc` or `slc generate --with toolchain_gcc` might fail with exclusivity errors due to the `wiseconnect_toolchain_gcc_standard` component incorrectly providing `toolchain_gcc`, resulting in a conflict with the SiSDK `toolchain_gcc` component. If using those two command line options results in exclusivity errors, then you can remove them. Note that in a future WiseConnect release, you might have to reintroduce the toolchain option on the command line. Refer to future WiseConnect release notes for updates on possible behavior changes.	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART

Multiprotocol

WiSeConnect - Multiprotocol Version 4.0.0 (Jan 22, 2026) - Release Notes

Wi-Fi 6 + BLE (WiSeConnect) SDK Version 4.0.0

Simplicity SDK Version 2025.12.0

The Multiprotocol Software Development Kit (SDK) provides Wi-Fi and BLE coexistence and packet traffic arbitration (PTA) features.

Click here for earlier releases.

Release Summary

Key Features | API Changes | Bug Fixes | Chip Enablement

Key Features

None

API Changes

None

Bug Fixes

- Fixed multiple issues where the SiWx917 encountered socket/SSL failures, hangs, MQTT data stoppage, BLE disconnections, and instability during Wi-Fi reconnect loops, MQTT cycling, BLE scanning/advertising, and heavy stress with up to 10 BLE connections.
- Resolved long-duration test failures including errors 0x4E08 and -13; Pixel DLE interoperability issues; connection-parameter update hangs; and instances where the device became unresponsive under continuous Wi-Fi, MQTT, and GATT notification load.
- Fixed an issue where the `ble_get_local_address` API became unresponsive when invoked after a specific sequence involving Wi-Fi initialization, scan, and connection; followed by BLE advertising and scanning start/stop operations; and a subsequent Wi-Fi disconnect.

Chip Enablement

None

Key Features

New Features | Enhancements | Removed Features | Deprecated Features

> Note: See Feature Matrix for a list of any applicable APIs, examples, software variants, modes, hardware, and host interfaces applicable for each feature.

New Features

None

Enhancements

None

Removed Features

None

Deprecated Features

None

API Changes

New APIs | Modified APIs | Removed APIs | Deprecated APIs

New APIs

None

Modified APIs

None

Removed APIs

None

Deprecated APIs

None

Bug Fixes

> Note: See the Feature Matrix section for a list of all hardware parts that work with the WiSeConnect SDK.

ID	Issue Description	GitHub / Salesforce Reference (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1521233	Fixed an issue where the DUT became non-connectable after the second remote central auto-disconnect (~40 min) when operating with 8 BLE peripheral connections and 2 BLE central connections performing active data transmission/reception, along with continuous MQTT connect/disconnect operations running in a loop.	None	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART

ID	Issue Description	GitHub / Salesforce Reference (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1511407	Fixed a command disallowed (0x4E0C) error occurring when stopping BLE advertising in the SoftAP+BLE provisioning application after remote client disconnect and reconnect. Also resolved web interface unresponsiveness that occurred during subsequent connection attempts.	None	• Software variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
1505752	Fixed an issue where socket connections failed during SSL transmission when BLE scanning and advertising were active concurrently in power-save mode with encrypted firmware.	None	• Software variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
1453288	Resolved connectivity instability under high-stress conditions involving Wi-Fi MQTT cycling and simultaneous GATT notifications from 10 BLE connections when using encrypted firmware.	None	• Software variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
1276739	Fixed device hangs when continuous WLAN connect/disconnect and HTTPS GET/deinit operations occur alongside a BLE LE Secure connection.	None	• Software variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
1521722	Fixed an issue where MQTT data transfer stopped after approximately 30 minutes, followed by BLE disconnections after about 1 hour and 30 minutes.	None	• Software variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
1515995	Fixed hang issue during MQTT data transfer with 10 concurrent BLE bidirectional data transfers (TX/RX with notifications) when one peripheral connection was a Pixel device with DLE enabled.	None	• Software variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
1505989	Fixed a connection timeout error (0x4E08) observed on the remote central device during long-duration testing involving MQTT data transfer and 10 concurrent BLE connections performing bidirectional data transfers	None	• Software variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART

ID	Issue Description	GitHub / Salesforce Reference (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1397267	Fixed an issue where MQTT connections occasionally failed with error code -13 when provisioning via a OnePlus 7T mobile device.	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1471402	Fixed an issue where the `ble_get_local_address` API became unresponsive when invoked after a specific sequence of Wi-Fi and BLE operations, including: Wi-Fi and BLE initialization, an initial `ble_get_local_address` call, Wi-Fi scan and connection, BLE advertising start/stop, BLE scanning start/stop, Wi-Fi disconnect, `ble_get_state`, and a subsequent `ble_get_local_address` call.	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1443334	Fixed an issue where the SiWx917 could become unresponsive and experience disconnections from both Wi-Fi and BLE under heavy-load conditions involving continuous Wi-Fi activity, MQTT traffic, and GATT notifications from 10 BLE connections.	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART

Chip Enablement

None

Application Example Changes

New Examples | Modified Examples | Removed Examples | Deprecated Examples

> Note: See the Feature Matrix section for a list of all hardware parts that work with the WiSeConnect SDK.

New Examples

None

Modified Examples

Example Name	Changes	Supported Software Variants if applicable	Supported Modes	Supported OPNs / Boards / OPN Combinations	Supported Host Interfaces
Wi-Fi Client BLE Throughput App	Added continuous throughput support for TCP RX and UDP RX traffic in the Wi-Fi Station BLE Throughput application. See README	Standard and Lite	• SoC • NCP	• OPNs: All • Boards: All	SPI, UART

Removed Examples

None

Deprecated Examples

None

Known Issues and Limitations

ID	Issue or Limitation Description	GitHub / Salesforce Reference (if any)	Workaround (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1455876	MQTT publish failure (error code -7) occurs for QoS 0 messages after 30 minutes when running 10 concurrent BLE connections and GATT notifications without SMP on an encrypted connectivity (network processor) firmware image.	None	None	• Software variants: Standard and Lite • OPNs: All except IC OPNs • Boards: All applicable boards • Modes: SoC, NCP • Host interfaces SPI, UART
1451820	SiWx917 fails to re-connect after a few MQTT disconnections during a BLE scan start and stop loop with the `wlan_ble_unified_coex_app_soc` example application.	None	None	• Software variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
1479757	A bus thread looping issue was observed while running a multi-socket application.	None	None	• Software variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
1444697	BLE disconnections occur when loading or clearing the TLS certificate.	None	None	• Software variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART

ID	Issue or Limitation Description	GitHub / Salesforce Reference (if any)	Workaround (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1512574	When the DUT is configured to advertise with BLE SMP enabled and a continuous WLAN scan is active, the remote BLE central device may frequently fail to pair and occasionally fail to connect.	None	None	• Software variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
N/A	In co-existence mode, configuring 480 KB of RAM for the network processor and 192 KB for the application processor can reduce Wi-Fi throughput by approximately 10 Mbps due to limited memory available for data packets.	None	None	• Software variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
N/A	Multiprotocol operation (Wi-Fi station + BLE) with EAP security modes is supported only for memory configurations EXT_FEAT_416K_M4SS_256K (416 KB network processor + 256 KB application processor) and EXT_FEAT_480K_M4SS_192K (480 KB network processor + 192 KB application processor).	None	None	• Software variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
N/A	System-level changes introduced to enhance stability have resulted in some increase in power numbers (up to 15% for smaller connection intervals of 200 ms) for BLE-connected only cases for modules. Impact is smaller for longer connection intervals.	None	None	• Software variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART
1557787	The Wi-Fi station returns error 0x1FF9C (SL_STATUS_SI91X_DHCP_HANDSHAKE_FAILURE) in congested environments when operating in concurrent mode with both NAT and PAT features enabled.	None	None	• Software variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC, NCP • Host interfaces: SPI, UART

ID	Issue or Limitation Description	GitHub / Salesforce Reference (if any)	Workaround (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1574418	Using `slc generate --toolchain gcc` or `slc generate --with toolchain_gcc` may fail with exclusivity errors due to the `wiseconnect_toolchain_gcc_standard` component incorrectly providing `toolchain_gcc`, resulting in a conflict with the Simplicity SDK `toolchain_gcc` component. If using those two command line options results in exclusivity errors, then you can remove them. Note that in a future WiseConnect release, you might have to reintroduce the toolchain option on the command line. Refer to future WiseConnect release notes for updates on possible behavior changes.	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART

WiSeConnect - SiWx91x Platform SDK Version 4.0.0 (Jan 22, 2026) - Release Notes

[Wi-Fi 6 + BLE (WiSeConnect) SDK Version 4.0.0](#)

[Simplicity SDK Version 2025.12.0](#)

The SiWx91x Platform Software Development Kit (SDK) provides platform features for Silicon Labs SiWx91x microcontrollers, including peripherals, drivers, and services.

Click [here](#) for earlier releases.

Release Summary

[Key Features](#) | [API Changes](#) | [Bug Fixes](#) | [Chip Enablement](#)

Key Features

- Enhanced the SSI peripheral driver with support for Dual and Quad modes.
- Added CMake build system support for VS Code and the command line interface (CLI).
- Added secure zone support for all SiWx917 applications.

API Changes

- Added APIs for the newly introduced logger feature.
- Added new APIs for the following peripherals:
  - GPIO, USART, I2S, PCM, HSPI, SYSRTC, GPDMA, LittleFS, Clock Manager, GSPI, DMA, eFuse, Power Manager, Memory Manager, SDIO Secondary, and Logger.

Bug Fixes

- Improved stability and functionality for DMA, QEI, SSI, and RHT sensor drivers.
- Enhanced DEBUGOUT macro documentation with guidance to append `\r\n` for proper terminal log output.

Chip Enablement

None

Key Features

[New Features](#) | [Enhancements](#) | [Removed Features](#) | [Deprecated Features](#)

> Note: See [Feature Matrix](#) for a list of any applicable APIs, examples, software variants, modes, hardware, and host interfaces applicable for each feature.

New Features

- Implemented additional features for existing peripherals:
  - SSI Dual and Quad modes

- ○ SYSRTC
  - ○ PRS
- Added CMake build system support.
- Added Debug Logger support in the SDK.

Enhancements

- Improved the PWM example to show dead-time insertion and added documentation for center-aligned, lead-edge, and tail-edge modes.
- Updated README files for all peripheral examples with clear descriptions and better usage instructions.
- Enhanced Timer documentation with improved explanations and usage details.
- Added validation checks to EPIO APIs to ensure valid port and pin configurations.
- Improved RAM and flash overflow detection with better linker checks and enhanced stack/heap validation.
- Enhanced LittleFS example with step-by-step API usage including write and erase operations.
- Updated ADC documentation with configuration steps and temperature calculation formula.
- Optimized SDIO DMA performance for faster data transmission and reception.
- Enhanced SDIO interrupt handler with improved event handling and GPDMA support.
- Added flexible memory allocation options with a heap-specific memory manager.
- Improved I2C driver with updated naming conventions.
- Added clock output configuration API for consistent clock management.
- Introduced `sl_si91x_i2s_deinit_v2` to enhance the deinitialization process of the I2S interface.
- Improved component descriptions for analog peripherals (ADC, DAC, Analog Comparator, OPAMP), SSI, I2C, and ULP Timer for better clarity.

Removed Features

- None

Deprecated Features

- None

API Changes

New APIs | Modified APIs | Removed APIs | Deprecated APIs

New APIs

New API Signature	Deprecated API replaced by this (if any)
sl_si91x_button_toggle_state	sl_si91x_button_state_toggle
sl_si91x_button_set_state	sl_si91x_button_state_set
sl_si91x_button_get_state	sl_si91x_button_state_get
sl_si91x_button_state	sl_si91x_button_pin_state
sl_si91x_gpio_driver_mask_clear_uulp_npss_interrupt	sl_si91x_gpio_driver_unmask_uulp_npss_interrupt
sl_si91x_gpio_driver_mask_set_uulp_npss_interrupt	sl_si91x_gpio_driver_mask_uulp_npss_interrupt
sl_si91x_gpio_driver_clear_uulp_npss_interrupt	sl_si91x_gpio_driver_clear_uulp_interrupt
sl_si91x_usart_multiple_instance_register_event_callback	sl_si91x_usart_register_event_callback
sl_si91x_i2s_deinit_v2	sl_si91x_i2s_deinit
sl_si91x_pcm_deinit_v2	sl_si91x_pcm_deinit
sl_si91x_hspi_secondary_deinit	

New API Signature	Deprecated API replaced by this (if any)
sl_si91x_gpio_driver_select_ulp_pad_schmitt_trigger	
sl_si91x_gpio_driver_enable_ulp_pad_power_on_start	
sl_si91x_gpio_driver_enable_pad_power_on_start	
sl_si91x_gpio_driver_select_pad_schmitt_trigger	
sl_si91x_sysrtc_set_compare_output_prs_gpio	
sl_si91x_sysrtc_set_capture_input_prs_gpio	
sl_si91x_gpdma_deinit	
sli_si91x_usart_send_data_blocking	
sl_si91x_littefs_dir_list	
sl_si91x_clock_manager_mcu_clk_out	
sl_si91x_gspi_receive_data_blocking	
sl_si91x_gspi_send_data_blocking	
sl_si91x_gspi_transfer_data_blocking	
sl_si91x_get_dma_handle	
sl_si91x_efuse_write_bit_v2	sl_si91x_efuse_write_bit
sl_si91x_power_manager_ps2_pre_check	
sl_si91x_memory_get_used_heap_size	
sl_si91x_memory_get_heap_high_watermark	
sl_si91x_memory_get_free_heap_size	
sl_si91x_memory_reset_heap_high_watermark	
sl_si91x_sdio_secondary_request_to_send	
sl_log_init	
SL_PRINT_STRING_INFO	
SL_PRINT_STRING_DEBUG	
SL_PRINT_STRING_WARN	
SL_PRINT_STRING_ERROR	
SL_PRINT_EVENT_INFO	
SL_PRINT_EVENT_DEBUG	
SL_PRINT_EVENT_WARN	
SL_PRINT_EVENT_ERROR	
sl_log_flush	

Modified APIs

- None

Removed APIs

- None

Deprecated APIs

Deprecated API Name	Planned Removal Date
void sl_si91x_button_state_toggle (uint8_t pin)	2026-06

Deprecated API Name	Planned Removal Date
void sl_si91x_button_state_set (uint8_t pin, int8_t state)	2026-06
int8_t sl_si91x_button_state_get (uint8_t pin)	2026-06
int8_t sl_si91x_button_pin_state (uint8_t pin)	2026-06
sl_status_t sl_si91x_adc_configure_clock (sl_adc_clock_config_t *clock_configuration)	2027-06
sl_status_t sl_si91x_calendar_set_configuration (sl_calendar_clock_t clock_type)	2027-06
sl_status_t sl_si91x_calendar_rcclk_calibration (clock_calibration_config_t *clock_calibration_config)	2027-06
sl_status_t sl_si91x_calendar_roclk_calibration (clock_calibration_config_t *clock_calibration_config)	2027-06
sl_status_t sl_si91x_efuse_write_bit (uint16_t address, uint8_t bit_pos, uint32_t hold_time)	2027-06
sl_status_t sl_si91x_gspi_configure_clock (sl_gspi_clock_config_t *clock_configuration)	2027-06
sl_i2c_status_t sl_i2c_driver_receive_data_non_blocking (sl_i2c_instance_t i2c_instance, uint16_t address, uint8_t *rx_buffer, uint32_t rx_len, sl_i2c_dma_config_t *p_dma_config)	2027-06
sl_status_t sl_si91x_ssi_configure_clock (sl_ssi_clock_config_t *clock_config)	2027-06
sl_status_t sl_si91x_usart_register_event_callback (sl_usart_signal_event_t callback_event)	2027-06
sl_status_t sl_si91x_watchdog_configure_clock (watchdog_timer_clock_config_t *timer_clk_config_ptr)	2027-06
sl_status_t sl_si91x_usart_set_configuration (sl_usart_handle_t usart_handle, sl_si91x_usart_control_config_t *control_configuration)	2027-06
sl_status_t sl_si91x_gpio_driver_unmask_uulp_npss_interrupt (uint8_t npssgpio_interrupt)	2027-06
sl_status_t sl_si91x_gpio_driver_clear_uulp_interrupt (uint8_t npssgpio_interrupt)	2027-06

Bug Fixes

> Note: See the Feature Matrix section for a list of all hardware parts that work with the WiSeConnect SDK.

ID	Issue Description	GitHub / Salesforce Reference (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1463912	Resolved issue with AES encryption with NWP power save is enabled.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: SPI, UART

ID	Issue Description	GitHub / Salesforce Reference (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1497836	Fixed SysTick timing precision issue in RTOS applications when low-power mode is disabled.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: SPI, UART
1482392	Resolved SDC maximum sampling threshold alignment to 15 and 16.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1479665	Fixed SSI application failure issue observed at lower frequencies (1 MHz/2 MHz).	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1479624	Removed low configuration (less than 1ms) values for WDT manager timeout.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1478520	Fixed UART IRQ handler issues by introducing `sl_si91x_usart_multiple_instance_register_event_callback()` API for improved event callback registration, adding null pointer checks, and requiring pull-up resistors to be enabled on unconnected UART Rx pins to prevent spurious interrupts.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1476728	Fixed structure type definitions in the Power Manager driver for accurate configuration handling.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1487369	Fixed GSPI maximum baud rate constant by updating it to 116 MHz.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1504610	Correct the uDMA instance mapping to ensure reliable UART operation when multiple UARTs are configured with DMA.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A

ID	Issue Description	GitHub / Salesforce Reference (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1451220	Fixed incorrect temperature and motion sensor readings on the dev kit (SiWx917-DK2605A) by resolving the ICM initialization issue and addressing the SSI DMA init hang.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1475019	Added a usage note in the Software Reference Manual for the DEBUGOUT macro, advising developers to append `\r\n` to ensure logs are properly flushed to the terminal.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1488458	Fixed ADC FIFO example to read correct data for multiple channels by moving ping_pong_memory_read array from local to global scope and resetting it during deinit/reset.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1519194	Reduced RAM usage by approximately 500 bytes by declaring `sl_bjt_config` and `sl_bjt_channel_config` as constant variables.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1511613	Added mode validation in `sl_si91x_usart_async_receive_data()` to ensure that only USART instances configured in asynchronous mode can use the asynchronous receive API, preventing incorrect behavior when called in synchronous mode.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1509195	Fixed LittleFS component to allow flexible heap selection. Previously, LittleFS had a hard dependency on freertos_heap_4, preventing users from choosing alternative heap implementations such as Heap_5. This restriction has been removed, enabling customers to select any heap component for their projects.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1424316	Fixed GSPI transfer inefficiency by adding a blocking API to improve byte-transfer performance.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1525464	Fixed WiseConnect WDT Manager causing immediate watchdog reset when compiled with GCC optimization level -Og by explicitly initializing configuration variables.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A

ID	Issue Description	GitHub / Salesforce Reference (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1543056	Fixed SDIO Secondary callback to correctly trigger HOST_INTR_SEND_EVENT by handling SEND and CMD52 events.	None	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A
1542490	Fixed ADC sampling rate being set incorrectly for sampling rates of 76Hz or below in SL_ADC_FIFO_MODE and ULP_ADC examples.	None	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A
1534303	Fixed PSRAM linker file to prevent NOLOAD sections from occupying binary space by removing default .text and .data dependencies.	None	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A
1532873	Fixed I2S clock frequency issue for 24-bit, 8 kHz resolution by calculating and applying a custom division factor instead of using fixed PLL values.	None	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A
1511606	Resolved issue in HSPI Primary mode where data transfer completion events are not triggered while verifying deinit functionality when TEST_MEMORY_READ_WRITES is enabled.	None	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A
1529088	Fixed PSRAM Software Components display in UI to hide unsupported configuration (HEAP, BSS, and STACK) options. These options have been hidden to prevent runtime failures.	None	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A
1488092	Fixed incorrect visibility of BRD4338A radio board component in Simplicity Studio. The visibility has been set to "none" to hide this component from the UI, preventing unintended modifications by users.	None	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A
1489303	Fixed an issue where writing calibration data to common flash caused the M4 to hang when the power manager was enabled.	None	• Firmware variants: Standard and Lite • OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A

ID	Issue Description	GitHub / Salesforce Reference (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1514940	Fixed hang issue during initialization when firmware fallback component and M4 power save were both enabled in the application.	None	- OPNs: SiWG917M111MGTBA, SiWG917M100MGTBA, SIWG917Y111MGNBA, SIWG917Y121MGNBA, SIWG917Y111MGABA, SIWG917Y121MGABA - Boards: All - Modes: SoC - Host interfaces: N/A
1437906	Fixed issue where BOD (Brown-Out Detection) interrupt was triggered at 1.9 V instead of the documented minimum threshold voltage of 1.75 V as specified in the SiWx917 Family Reference Manual.	None	- OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1492363	Fixed an issue in the Pin Tool that prevented GPIO mode pin configurations from generating the correct macros for SDK usage. These pins are now correctly translated into macros compatible with the SDK.	None	- OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1475668	Fixed configuration validation to prevent errors when selecting three OPAMPs in Cascaded Inverting PGA, Cascaded Non-Inverting PGA, or two OPAMPs Differential Amplifier modes. These modes now correctly enforce the requirement to select exactly two OPAMPs.	None	- OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1504651	Fixed voltage drop issue when using GPIO_29 as VinP input for OPAMP3 Trans-Impedance Amplifier with current source input.	None	- OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1504649	Fixed voltage drop issue when using GPIO_27 or DAC as VinP input for OPAMP1 Trans-Impedance Amplifier with current source input.	None	- OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1500145	Fixed issue where output voltage exceeded OPAMP Reference Voltage (2.5 V) when R1=R2=20K for Instrumentation Amplifier configuration.	None	- OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1438016	Fixed issue where BOD (Brown-Out Detection) was non-functional in ULP power state PS2.	None	- OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1455245	Blackout reset fails to occur on module board SiW917Y-RB4343A Rev. A07.	None	- OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A

ID	Issue Description	GitHub / Salesforce Reference (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1364360	Fixed issue where Simplicity Studio's "Add New Instance" feature for peripherals with multiple instances suggested default instance names (e.g., `inst0`, `inst1`) that differed from the instance names supported in the reference documentation and application examples. Instance naming has been aligned with peripheral-specific documentation conventions.	None	- OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1417168	Fixed issue where PSA components were not visible in the Simplicity Studio GUI, preventing users from adding security modules to their projects. Both mbedTLS and SI91X-PSA driver components are now properly displayed alongside PSA components.	None	- OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1496318	Fixed issue where DUT hang was observed during firmware download over TCP OTA when using the firmware fallback feature.	None	- OPNs: SiWG917M111MGTBA, SiWG917M100MGTBA, SIWG917Y111MGNBA, SIWG917Y121MGNBA, SIWG917Y111MGABA, SIWG917Y121MGABA - Boards: All - Modes: SoC - Host interfaces: N/A
1483509	Fixed issue where the NWP firmware fallback feature required the default slot image to be set using the sl_si91x_select_default_nwp_fw API before calling sl_net_init. The API now automatically handles default slot selection.	None	- OPNs: SiWG917M111MGTBA, SiWG917M100MGTBA, SIWG917Y111MGNBA, SIWG917Y121MGNBA, SIWG917Y111MGABA, SIWG917Y121MGABA - Boards: All - Modes: SoC - Host interfaces: N/A
1462701	Fixed issue where erasing an inactive image slot would take approximately 14 seconds, during which wireless tasks were blocked, potentially causing AP disconnection and protocol disruptions.	None	- OPNs: SiWG917M111MGTBA, SiWG917M100MGTBA, SIWG917Y111MGNBA, SIWG917Y121MGNBA, SIWG917Y111MGABA, SIWG917Y121MGABA - Boards: All - Modes: SoC - Host interfaces: N/A
1513362	Updated Power Save pin nomenclature to align with NCP data sheet conventions. In NCP Power Save Examples with EFR32 host, Power Save pins (UULP_VBAT_GPIO_0 and UULP_VBAT_GPIO_2) are now properly configured to enable correct SiWx917 wake-up and sleep operation in GPIO-Based Power Save Mode-2.	None	- Firmware variants: Standard and Lite - OPNs: All NCP OPNs only - Boards: All NCP boards only - Modes: NCP - Host interfaces: SPI, UART

ID	Issue Description	GitHub / Salesforce Reference (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1476840	Replaced manual millisecond-to-tick conversions with `SLI_SYSTEM_MS_TO_TICKS` macro for accurate OS delays.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART
1517330	Fixed `sl_si91x_set_nwp_config_request()` API error; host can now configure XTAL/PMU good time prior to `sl_net_init()`.	None	- Firmware variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART

Chip Enablement

None

Application Example Changes

New Examples | Modified Examples | Removed Examples | Deprecated Examples

> Note: See the Feature Matrix section for a list of all hardware parts that work with the WiSeConnect SDK.

New Examples

- `SL Si91x - SL_LOGGER_EXAMPLE` - Demonstrates the logger service on the SiWx917 SoC device.
- `SL Si91x - WDT Manager` - Demonstrates the Watchdog Timer Manager service on the SiWx917 SoC device.

Modified Examples

None

Removed Examples

- `CPC Secondary SDIO with Security` - This example has been removed as it is no longer maintained in Simplicity SDK.
- `SL Si91x - Watchdog Timer` - This example has been replaced by `SL Si91x - WDT Manager`, which provides enhanced watchdog timer management capabilities.

Deprecated Examples

None

Known Issues and Limitations

> Note: See the Feature Matrix section for a list of all hardware parts that work with the WiSeConnect SDK.

ID	Issue or Limitation Description	GitHub / Salesforce Reference (if any)	Workaround (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
N/A	FreeRTOS tick-less idle mode is currently not supported in the Sensor Hub example application.	None	None	• Software variants: Standard and Lite • OPNs: All except IC's OPNs • Boards: All applicable boards • Modes: SoC, NCP • Host interfaces SPI, UART
N/A	UART instances do not support different FIFO thresholds.	None	None	• OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A
1475241	SDC cannot be used with OPAMP as its input.	None	None	• OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A
N/A	The ULP Timer may experience timer drifts due to the inaccuracy of the clock source (RC oscillator).	None	None	• OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A
1527571	PSRAM access with Data Cache enabled may experience performance degradation ranging from 2× to 9× depending on memory access patterns and workload characteristics. This is due to software-based mitigation implemented to fix a data corruption issue during write-after-read sequences. A detailed user guide outlining the affected use cases, recommended access patterns, and performance trade-offs will be released in subsequent releases.	None	None	• OPNs: All SiWx917 devices • Boards: All • Modes: SoC • Host interfaces: N/A
N/A	Peripheral clock sources are currently fixed and cannot be configured by the user.	None	None	• OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A
N/A	GPDMA driver currently supports only memory-to-memory transfers.	None	None	• OPNs: All • Boards: All • Modes: SoC • Host interfaces: N/A

ID	Issue or Limitation Description	GitHub / Salesforce Reference (if any)	Workaround (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
N/A	I2C receive operations using DMA may fail because the IC DATA CMD register must be programmed with a read command for each byte. Using two DMA channels—one for programming the register and one for data transfer—can lead to synchronization issues due to DMA flow control delays.	None	None	- OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1567865	SSI Dual and Quad mode supports address lengths up to 32 bits only.	None	None	- OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
N/A	The DMA controller does not support timeout or threshold interrupts for half-full or full states. For asynchronous transactions, the application must implement handshaking mechanisms to ensure proper synchronization and data transfer control.	None	None	- OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
N/A	Only a few wakeup sources (ULP GPIO, ULP Timer, ULP ADC, ULP Comparator, and ULP UART) are currently supported for the PS1 state in the Power Manager.	None	None	- OPNs: All - Boards: All - Modes: SoC - Host interfaces: N/A
1574418	Using `slc generate --toolchain gcc` or `slc generate --with toolchain_gcc` may fail with exclusivity errors due to the `wiseconnect_toolchain_gcc_standard` component incorrectly providing `toolchain_gcc`, resulting in a conflict with the SiSDK `toolchain_gcc` component. If using those two command line options results in exclusivity errors, then you can remove them, and note that in a future WiseConnect release, you might have to reintroduce the toolchain option on the command line. Refer to future WiseConnect release notes for updates on possible behavior changes.	None	None	- Software variants: Standard and Lite - OPNs: All - Boards: All - Modes: SoC, NCP - Host interfaces: SPI, UART