



# Wi-SUN SDK 1.2.0.0 GA

## Gecko SDK Suite 4.0

### December 15, 2021

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Wireless Smart Ubiquitous Network (Wi-SUN) is the leading IPv6 sub-GHz mesh technology for smart city and smart utility applications. Wi-SUN brings Smart Ubiquitous Networks to service providers, utilities, municipalities/local government, and other enterprises, by enabling interoperable, multi-service, and secure wireless mesh networks. Wi-SUN can be used for large-scale outdoor IoT wireless communication networks in a wide range of applications covering both line-powered and battery-powered nodes.

Silicon Labs' Wi-SUN hardware is certified by the Wi-SUN Alliance, a global industry association devoted to seamless LPWAN connectivity. Wi-SUN builds upon open standard internet protocols (IP) and APIs, enabling developers to extend existing infrastructure platforms to add new capabilities. Built to scale with long-range capabilities, high-data throughput and IPv6 support, Wi-SUN simplifies wireless infrastructure for industrial applications and the evolution of smart cities.



#### KEY FEATURES

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- FAN 1.0 Certified Wi-SUN Border Router reference design
- Wi-SUN Network Performance Application

These release notes cover SDK versions:

1.2.0.0 released December 15, 2021

## Compatibility and Use Notices

For information about security updates and notices, see the Security chapter of the Gecko Platform Release notes installed with this SDK or on the [Silicon Labs Release Notes page](#). Silicon Labs also strongly recommends that you subscribe to Security Advisories for up-to-date information. For instructions, or if you are new to the Silicon Labs Wi-SUN SDK, see [Using This Release](#).

### Compatible Compilers:

IAR Embedded Workbench for ARM (IAR-EWARM) version 8.50.9

- Using wine to build with the IarBuild.exe command line utility or IAR Embedded Workbench GUI on macOS or Linux could result in incorrect files being used due to collisions in wine's hashing algorithm for generating short file names.
- Customers on macOS or Linux are advised not to build with IAR outside of Simplicity Studio. Customers who do should carefully verify that the correct files are being used.

GCC (The GNU Compiler Collection) version 10.2.1, provided with Simplicity Studio.

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## 1 Wi-SUN Stack

### 1.1 New Items

#### Added in release 1.2.0.0

- Added release quality libraries. They provide the same Wi-SUN features but are not logging anything.
- Added a new API `sl_wisun_reset_statistics` that resets all the counters read by calling `sl_wisun_get_statistics`.
- Added new APIs `sl_wisun_get_neighbor_count()` and `sl_wisun_get_neighbors()` that indicate the neighbor count (parents and children) and their MAC address.
- Added a new API `sl_wisun_get_neighbor_info()` that returns information about a neighbor.
- Added a new API `sl_wisun_set_unicast_settings()` that configures the frequency hopping unicast dwell interval.
- Added a new API `sl_wisun_set_trace_level()` and `sl_wisun_set_trace_filter()` that configure the stack traces.

### 1.2 Improvements

- Added support for mbedtls v3.0
- Stack flash footprint reduction

### 1.3 Fixed Issues

#### Fixed in release 1.2.0.0

ID #	Description
752766	Reworked Wi-SUN stack tasks priorities. A race between an interruption routine and a task was causing interpestive connection losses when using FreeRTOS.
750407	Fixed the unicast channel filtering. Under certain conditions, a bit-order conversion was missing and was allowing forbidden channels to be used to transmit.
731225	Fixed an error causing the authentication waiting list to be broken. It was causing the authentication of new devices to be significantly slower when connecting a few dozen in parallel.

### 1.4 Known Issues in the Current Release

None

### 1.5 Deprecated Items

None

### 1.6 Removed Items

None

## 2 Wi-SUN Applications

### 2.1 New Items

#### Added in release 1.2.0.0

BRD4002A Support

New Applications:

- *Wi-SUN - SoC Network Measurement*
- *Wi-SUN - SoC RCP*. Used by the border router reference design

### 2.2 Improvements

#### Changed in release 1.2.0.0

- Major refactor at the Application Framework
- More granular components (OR relationship)
  - *Wi-SUN SDK - Application Core*
  - *Wi-SUN SDK - POSIX-compliant Socket*
  - *Wi-SUN SDK - Application CLI*
  - *Wi-SUN SDK - Ping*
  - *Wi-SUN SDK - Event Manager*
- CoAP PUT request to LED toggle
- Nanostack dependency removal
- Wi-SUN SoC Border Router: added new CLI commands to configure the frequency hopping unicast and broadcast intervals.
- Wi-SUN SoC CLI: added new CLI commands to read neighbors' information, configure the stack traces and the frequency hopping unicast interval, and reset the stack statistics.

### 2.3 Fixed Issues

None

### 2.4 Known Issues in the Current Release

Issues in bold were added since the previous release.

ID #	Description	Workaround
	<b>Simplicity Studio – Network Analyzer: Wi-SUN Encrypted Packets are not supported yet.</b>	

### 2.5 Deprecated Items

None

### 2.6 Removed Items

- *Wi-SUN - SoC Border Router with backhaul.*

## 3 Using This Release

This release contains the following

- Wi-SUN stack library
- Wi-SUN sample applications
- Wi-SUN border router pre-compiled demos
- Documentation

If you are a first time user, see *QSG181: Silicon Labs Wi-SUN Quick-Start Guide*.

### 3.1 Installation and Use

The Wi-SUN SDK is provided as part of the Gecko SDK (GSDK), the suite of Silicon Labs SDKs. To quickly get started with the GSDK, install [Simplicity Studio 5](#), which will set up your development environment and walk you through GSDK installation. Simplicity Studio 5 includes everything needed for IoT product development with Silicon Labs devices, including a resource and project launcher, software configuration tools, full IDE with GNU toolchain, and analysis tools. Installation instructions are provided in the online [Simplicity Studio 5 User's Guide](#).

Alternatively, Gecko SDK may be installed manually by downloading or cloning the latest from GitHub. See [https://github.com/SiliconLabs/gecko\\_sdk](https://github.com/SiliconLabs/gecko_sdk) for more information.

Simplicity Studio installs the GSDK by default in:

- (Windows): C:\Users\<<NAME>\SimplicityStudio\SDKs\gecko\_sdk
- (MacOS): /Users/<NAME>/SimplicityStudio/SDKs/gecko\_sdk

Documentation specific to the SDK version is installed with the SDK.

### 3.2 Security Information

#### Secure Vault Integration

This version of the stack does not integrate Secure Vault Key Management.

## Security Advisories

To subscribe to Security Advisories, log in to the Silicon Labs customer portal, then select **Account Home**. Click **HOME** to go to the portal home page and then click the **Manage Notifications** tile. Make sure that 'Software/Security Advisory Notices & Product Change Notices (PCNs)' is checked, and that you are subscribed at minimum for your platform and protocol. Click **Save** to save any changes.

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## 3.3 Support

Development Kit customers are eligible for training and technical support. Contact Silicon Laboratories support at <http://www.silabs.com/support>.

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