

Wi-SUN SDK 1.3.0.0 GA Gecko SDK Suite 4.1 June 8, 2022

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

- FAN 1.0 certified Router & Border Router
- · iPerf throughput test tool
- · Wi-SUN Configurator
- CLI for certification
- ARIB T108 support

These release notes cover SDK versions:

1.3.0.0 released June 8, 2022

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 TECH DOCS tab on https://www.silabs.com/developers/wi-sun-protocol-stack. 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 9.20.4

- Using wine to build with the larBuild.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 10.3-2021.10, provided with Simplicity Studio.

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1 Wi-SUN Stack

1.1 New Items

Added in release 1.3.0.0

- Most of the stack crypto operations are now made through ARM PSA Crypo API.
- Added a new API sl_wisun_set_device_private_key_id() that indicates which PSA Crypto key handler contains the device private key and has to be used by the stack. It is the application's responsibility to create the key.
- Added a new API sl_wisun_set_regulation() that configures the regional regulation to which the stack must comply. Refer
 to UG495: Silicon Labs Wi-SUN Developer's Guide for more information about regional regulation in the Wi-SUN Stack.
- Added a new event SL_WISUN_MSG_REGULATION_TX_LEVEL_IND_ID that is fired when the transmission budget crosses one
 of the transmission budget thresholds. The transmission budget is defined by the regional regulation. Refer to UG495: Silicon Labs
 Wi-SUN Developer's Guide for more information about regional regulation in the Wi-SUN Stack.
- Added a new API sl_wisun_set_regulation_tx_thresholds() that configures the threshold used to fire SL WISUN MSG REGULATION TX LEVEL IND ID event.
- Added a new API sl_wisun_set_advert_fragment_duration() that configures the asynchronous transmission fragment duration. It can be used to reduce the impact on the latency of long advertisement periods.
- Added a new API sl_wisun_set_unicast_tx_mode() that enables a high-reliability transmission mechanism for unicast communication. It trades off unicast communication reliability for latency.

1.2 Improvements

Changed in release 1.3.0.0

• sl_wisun_set_channel_mask() channel filter is now applied to asynchronous transmissions and unicast listening schedule. The function was renamed sl wisun set allowed channel mask() to make it more self-explanatory.

1.3 Fixed Issues

Fixed in release 1.3.0.0

ID#	Description
813440	Fixed an error that was causing radio calibrations to be skipped during Wi-SUN Stack initialization.
774290	

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 1.3.0.0

iPerf2 support

- Integrated into Wi-SUN SoC Network Measurement Application
- Option to install the Iperf2 component to other applications also

Wi-SUN Configurator - UI Tool

- · Configuration options are being used by the Applications automatically
 - MAC Address
 - MAC Allow/Deny List
 - Unicast Dwell Interval

CoAP discovery feature (limited, RFC 6690):

- · Register Resources
- Return list of Registered Resources in response to GET .well-known/core request

2.2 Improvements

None

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
	Simplicity Studio – Network Analyzer: Wi-SUN Encrypted Packets are not supported.	

2.5 Deprecated Items

None

2.6 Removed Items

Removed in release 1.3.0.0

• 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 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.

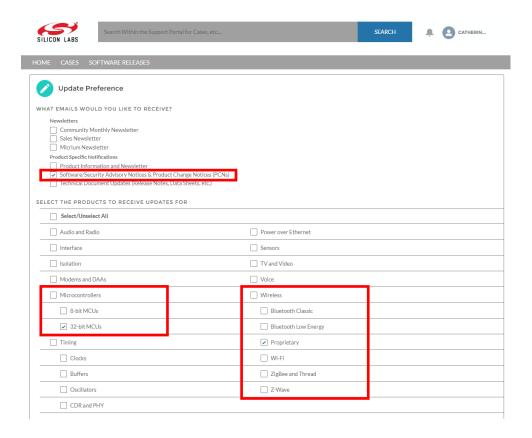
3.2 Security Information

Secure Vault Integration

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

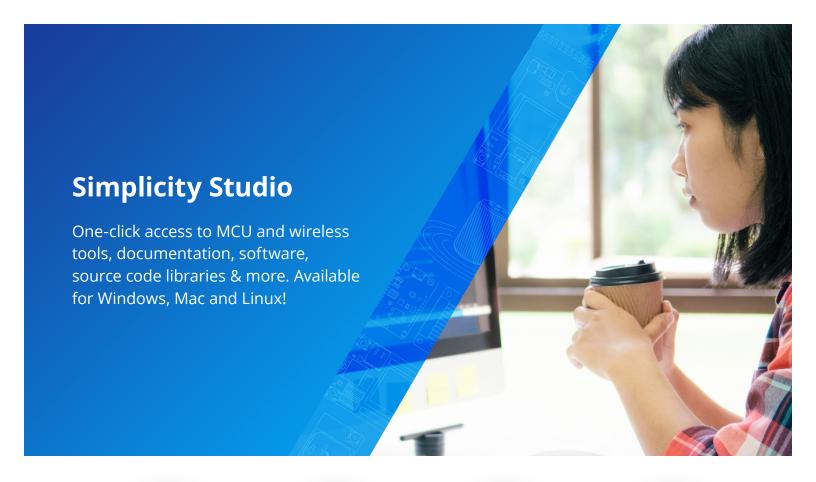
Security Advisories

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.



3.3 Support

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





IoT Portfolio www.silabs.com/IoT



SW/HW www.silabs.com/simplicity



Quality www.silabs.com/quality



Support & Community www.silabs.com/community

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