Wi-SUN SDK 1.1.0.0 GA
Gecko SDK Suite 3.2
July 21, 2021

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 PHYs and Wi-SUN Stack
- CoAP Library
- Wi-SUN Sample Applications
- Wi-SUN Border Router Demo
- Wi-SUN Network Analyzer

These release notes cover SDK versions:

1.1.0.0 released July 21, 2021
1.0.1.0 released June 16, 2021
1.0.0.0 released May 10, 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 10.2.0, provided with Simplicity Studio.

Contents

1 Wi-SUN Stack

1.1 New Items

Added in release 1.1.0.0

- Added a new SL_WISUN_MSG_NETWORK_UPDATE_IND_ID event that is fired when the network is updated: ip address update, new primary parent or new secondary parent.
- The stack library is now compiled with the preprocessor definition DEBUG_EFM_USER and provides a default implementation of assertEFM(). It will only be used if the application is also compiled with that same definition. The user can provide a custom implementation. See assertEFM() documentation for more information.

Added in release 1.0.0.0

Wi-SUN stack and SDK initial release

1.2 Improvements

None

1.3 Fixed Issues

Fixed in release 1.1.0.0

ID #	Description
710923	Fixed an issue causig the event SL_WISUN_MSG_CONNECTED_IND_ID to be fired although no new connection was established. It was fired after each network update.
699627	Fixed an issue causing connections to fail after an operating class update.
721399	Fixed an issue causing US-IE configuration to be invalid when excluding channels.

Fixed in release 1.0.1.0

ID #	Description
701190	Fixed an issue causing a parent to lose track of its child frequency hopping sequence. The child router was sending an incorrect IFSU misleading the parent router and forcing it to be one frequency hop interval late.

Fixed in release1.0.0.0

Wi-SUN stack and SDK initial release

1.4 Known Issues in the Current Release

Issues in bold were added since the previous release.

ID #	Description	Workaround
714402	Wi-SUN border routervery infrequently hits a hard fault. The command line interface is non-responsive and the router will not advertize anymore. Routers will eventually report a PAN timeout.	

1.5 Deprecated Items

None

1.6 Removed Items

Removed in release 1.1.0.0

- Removed internal type definitions from the API public headers

2 Wi-SUN Applications

2.1 New Items

Added in release 1.0.0.0

New Applications:

- Wi-SUN - SoC CLI
- Wi-SUN - SoC Empty
- Wi-SUN - SoC Ping
- Wi-SUN - SoC UDP Server
- Wi-SUN - SoC UDP Client
- Wi-SUN - SoC TCP Server
- Wi-SUN - SoC TCP Client
- Wi-SUN - SoC Meter
- Wi-SUN - SoC Collector
- Wi-SUN - SoC CoAP Meter
- Wi-SUN - SoC CoAP Collector

New precompiled demos:

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

Easy to use features (components):

- POSIX like Socket
- Application Core (event handling, connection handling, network configuration, etc.)
- CoAP (Constrained Application Protocol)

Radio Configurator Support (19 PHYs)

Simplicity Studio – Network Analyzer Wi-SUN Support

2.2 Improvements

Added in release 1.1.0.0

Wi-SUN - SoC Border Router

- Added a new command that configures new certificates
- Added a new command to exclude channels from the frequency hopping schedule

2.3 Fixed Issues

Fixed in release 1.1.0.0

ID #	Description
720367	Fixed an issue causig collectors from both CoAP and non-CoAP sample applications to remove meters from their meter list.
720336	Fixed an issue causing sample application for non-radio board targets to miss a radio configuration.

2.4 Known Issues in the Current Release

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

2.5 Deprecated Items

None

2.6 Removed Items

None

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

A registered account at Silicon Labs is required in order to download the Silicon Labs Wi-SUN SDK. You can register at https://silabs.force.com/apex/SL_CommunitiesSelfReg?form=short.

SDK installation instructions are covered in the Simplicity Studio 5 User's Guide and *QSG181: Silicon Labs Wi-SUN Quick-Start Guide*.

Use the Silicon Labs Wi-SUN SDK with the Silicon Labs Simplicity Studio 5 development platform. Simplicity Studio ensures that most software and tool compatibilities are managed correctly. Install software and board firmware updates promptly when you are notified.

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

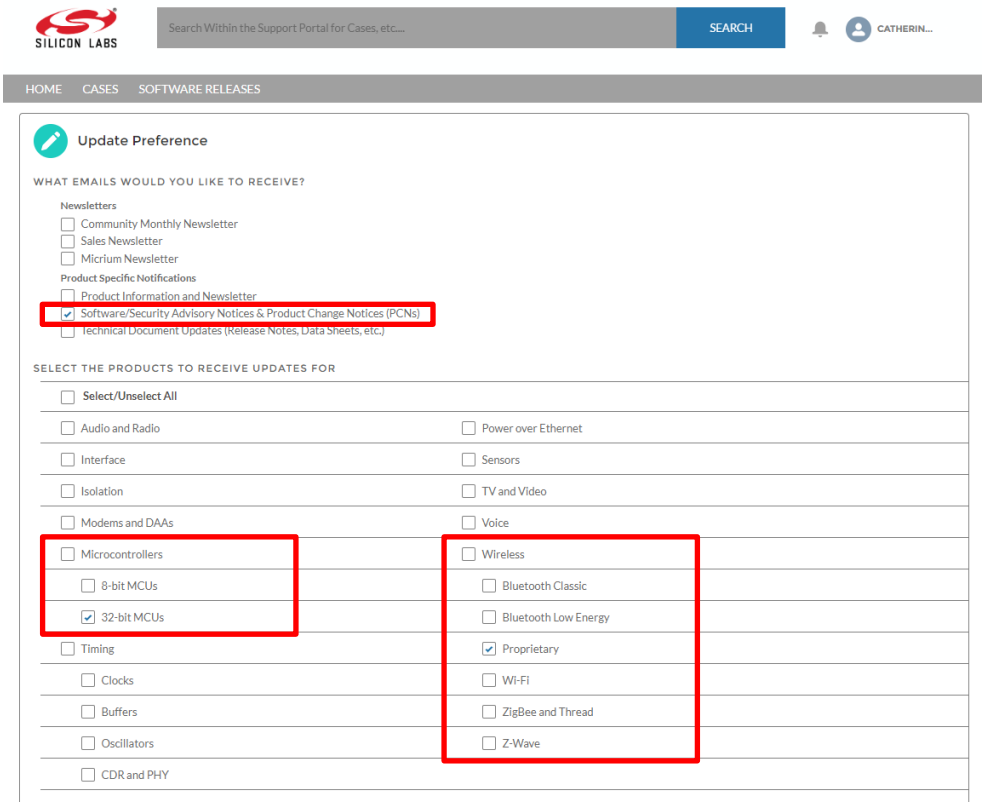
3.2 Security Information

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.si-labs.com/support.

Simplicity Studio

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