Connect SDK 4.0.2.0 GA
Simplicity SDK Suite 2024.12.2
April 1, 2025

The Connect SDK is a complete software development suite for proprietary wireless applications that was previously part of the Proprietary SDK. Starting with the Connect SDK 4.0.0.0 release, Proprietary SDK is split into RAIL SDK and Connect SDK.

Connect SDK uses Silicon Labs Connect, an IEEE 802.15.4-based networking stack designed for customizable broad-based proprietary wireless networking solutions that require low power consumption and operates in either the sub-GHz or 2.4 GHz frequency bands. The solution is targeted towards simple network topologies.

Connect SDK is supplied with extensive documentation and sample applications. All examples are provided in source code within the Connect SDK sample applications.

These release notes cover SDK version(s):

4.0.2.0 GA released April 1, 2025 (Underlying platform changes only)
4.0.1.0 GA released February 5, 2025 (Underlying platform changes only)
4.0.0.0 GA released December 16, 2024

Proprietary

CONNECT APPS AND STACK KEY FEATURES

- PSA Crypto hardware acceleration for payload encryption enabled in Connect stack on Series-2 parts
- Connect stack and Connect SDK enabled on BRD4276A radio board with EFR32FG25 and SKY66122-11 frontend module for high TX power applications

Compatibility and Use Notices

For information about security updates and notices, see the Security chapter of the Platform Release Notes installed with this SDK or on the TECH DOCS tab on https://www.silabs.com/developers/flex-sdk-connect-networking-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 Flex SDK, see Using This Release.

Compatible Compilers:

IAR Embedded Workbench for ARM (IAR-EWARM) version 9.40.1

- 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 12.2.1, provided with Simplicity Studio.

Contents

1 Connect Applications

1.1 New Items

Added in release 4.0.0.0

- simplicity_sdk/app/flex is split into two:
    - simplicity_sdk/app/rail (RAIL SDK)
    - simplicity_sdk/app/connect (CONNECT SDK)

1.2 Improvements

Changed in release 4.0.0.0

None.

1.3 Fixed Issues

Fixed in release 4.0.0.0

None.

1.4 Known Issues in the Current Release

Issues in bold were added since the previous release. If you have missed a release, recent release notes are available on the TECH DOCS tab on https://www.silabs.com/developers/flex-sdk-connect-networking-stack.

ID #	Description	Workaround
652925	EFR32XG21 is not supported for "Flex (Connect) - SoC Light Example DMP" and "Flex (Connect) - SoC Switch Example"	
1139850	DMP instabilities with XG27	

1.5 Deprecated Items

Deprecated in release 4.0.0.0

Flex SDK Flex folder is deprecated and will be removed. It has been split into Rail folder for RAIL SDK and Connect folder for Connect SDK..

1.6 Removed Items

Removed in release 4.0.0.0

None.

2 Connect Stack

2.1 New Items

Added in release 4.0.0.0

- The CCM* operations realized to encrypt and decrypt the stack communications are now performed by default using PSA Crypto API. Until now, the stack used its own implementation of CCM* and only used PSA Crypto API to perform AES block calculations. Two new components, **"AES Security (Library)"** and "**AES Security (Library) | Legacy"**, have been added, allowing the selection of one or the other of the implementations. The two components are compatible and can be installed at the same time. Refer to https://docs.silabs.com/connect-stack/4.0.0/connect-security-key-migration/ for further information.

2.2 Improvements

Changed in release 4.0.0.0

None.

2.3 Fixed Issues

Fixed in release 4.0.0.0

None.

2.4 Known Issues in the Current Release

Issues in bold were added since the previous release. If you have missed a release, recent release notes are available on the TECH DOCS tab on https://www.silabs.com/developers/gecko-software-development-kit.

ID #	Description	Workaround
	When running the RAIL Multiprotocol Library (used for example when running DMP Connect+BLE), IR Calibration is not performed because of a known issue in the RAIL Multiprotocol Library. As result, there is an RX sensitivity loss in the order of 3 or 4 dBm.	
501561	In the Legacy HAL component, the PA configuration is hard-coded regardless of the user or board settings.	Until this is changed to properly pull from the configuration header, the file ember-phy.c in the user's project will need to be modified by hand to reflect the desired PA mode, voltage, and ramp time.

2.5 Deprecated Items

Deprecated in release 4.0.0.0

None.

2.6 Removed Items

Removed in release 4.0.0.0

None.

3 Using This Release

This release contains the following:

- Radio Abstraction Interface Layer (RAIL) stack library
- Connect Stack Library
- RAIL and Connect Sample Applications
- RAIL and Connect Components and Application Framework

This SDK depends on the Simplicity Platform. The Simplicity Platform code provides functionality that supports protocol plugins and APIs in the form of drivers and other lower layer features that interact directly with Silicon Labs chips and modules. Simplicity Platform components include EMLIB, EMDRV, RAIL Library, NVM3, and mbedTLS. Simplicity Platform release notes are available through Simplicity Studio's Documentation tab.

For more information about the Flex SDK v3.x see UG103.13: RAIL Fundamentals and UG103.12: Silicon Labs Connect Fundamentals. If you are a first time user, see QSG168: Proprietary Flex SDK v3.x Quick Start Guide.

3.1 Installation and Use

The Proprietary Flex SDK is provided as part of the Simplicity SDK, the suite of Silicon Labs SDKs. To quickly get started with the Simplicity SDK, install Simplicity Studio 5, which will set up your development environment and walk you through Simplicity SDK 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, Simplicity SDK may be installed manually by downloading or cloning the latest from GitHub. See https://github.com/SiliconLabs/simplicity_sdk for more information.

Simplicity Studio installs the GSDK by default in:

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

Documentation specific to the SDK version is installed with the SDK. Additional information can often be found in the knowledge base articles (KBAs). API references and other information about this and earlier releases is available on https://docs.silabs.com/.

3.2 Security Information

Secure Vault Integration

When deployed to Secure Vault High devices, sensitive keys are protected using the Secure Vault Key Management functionality. The following table shows the protected keys and their storage protection characteristics.

Wrapped Key	Exportable / Non-Exportable	Notes
Thread Master Key	Exportable	Must be exportable to form the TLVs
PSKc	Exportable	Must be exportable to form the TLVs
Key Encryption Key	Exportable	Must be exportable to form the TLVs
MLE Key	Non-Exportable	
Temporary MLE Key	Non-Exportable	
MAC Previous Key	Non-Exportable	
MAC Current Key	Non-Exportable	
MAC Next Key	Non-Exportable	

Wrapped keys that are marked as "Non-Exportable" can be used but cannot be viewed or shared at runtime.
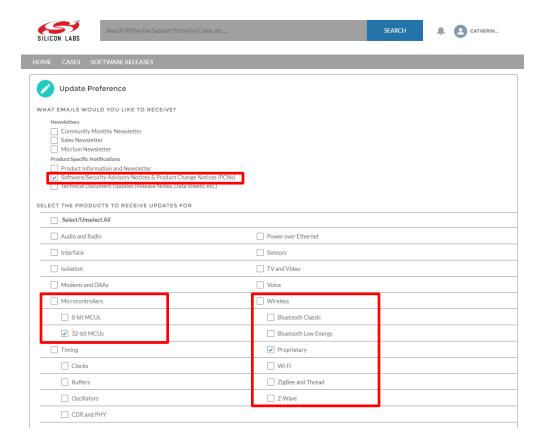
Wrapped keys that are marked as "Exportable" can be used or shared at runtime but remain encrypted while stored in flash.

For more information on Secure Vault Key Management functionality, see AN1271: Secure Key Storage.

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.
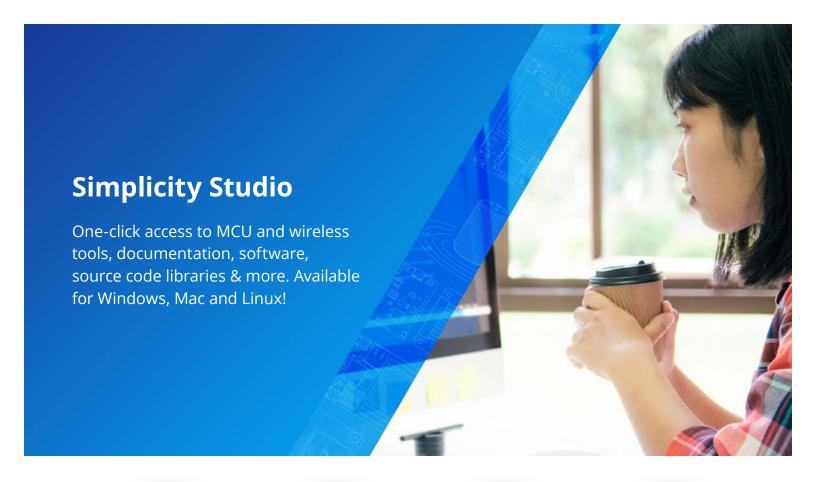
The following figure is an example:

3.3   Support

Development Kit customers are eligible for training and technical support. Use the [Silicon Labs Flex web page](#) to obtain information about all Silicon Labs Thread products and services, and to sign up for product support.

You can contact Silicon Laboratories support at http://www.silabs.com/support.

3.4   SDK Release and Maintenance Policy

For details, see [SDK Release and Maintenance Poilcy](#).

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