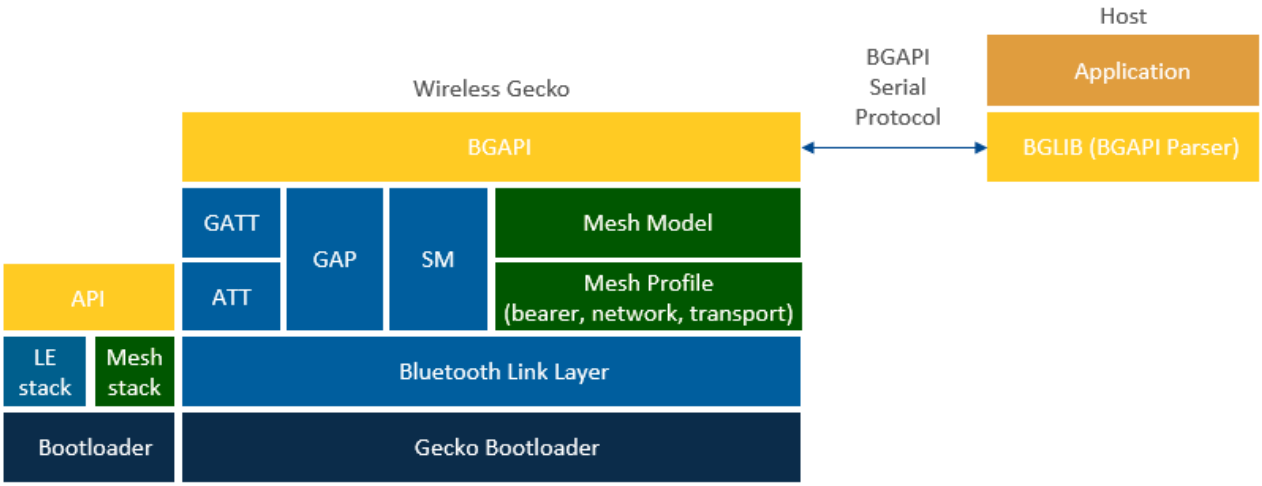
Contents [hide]

1 SILICON LABS Bluetooth Mesh SDK
2 Specifications
3 Product Usage Instructions
4 New Items
5 Improvements
6 Fixed Issues
7 Known Issues in the Current Release
8 Installation and Use
9 Security Information
10 Disclaimer
11 FAQs
12 Documents / Resources
12.1 References

SILICON LABS

SILICON LABS Bluetooth Mesh SDK



Specifications

- Product: Simplicity SDK Suite
- Version: 2024.6.3 April 23, 2025
- Features: Bluetooth Mesh specification version 1.1

Product Information

The Simplicity SDK Suite includes features supported by the Bluetooth Mesh specification version 1.1. It provides a platform for developing applications using Bluetooth Mesh technology.

Product Usage Instructions

Bluetooth Mesh is a new topology available for Bluetooth Low Energy (LE) devices that enables many-to-many (m:m) communication. It’s optimised for creating large-scale device networks and is ideally suited for building automation, sensor networks, and asset tracking. Our software and SDK for Bluetooth development support Bluetooth Mesh and Bluetooth functionality. Developers can add mesh networking communication to LE devices such as connected lights, home automation, and asset tracking systems. The software supports Bluetooth beaconing, beacon scanning, and GATT connections so that Bluetooth Mesh can connect to smartphones, tablets, and other Bluetooth LE devices. This release includes features supported by the Bluetooth Mesh specification version 1.1.

These release notes cover SDK versions

- 7.0.3.0 released April 23, 2025 (Underlying platform changes only)
- 7.0.2.0 released September 18, 2024
- 7.0.1.0 released July 24, 2024
- 7.0.0.0 released June 5, 2024

Compatibility and Use Notices

For more information about security updates and notices, see the Security chapter of the 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 Bluetooth Mesh 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.
- Link-time optimisation feature of GCC has been disabled, resulting in a slight increase in image size.

KEY FEATURES

- Migration to Simplicity SDK Suite
- Removed support for Series 0/1
- Support for delta-compressed firmware updates

New Items

New Features

Added in release 7.0.1.0

Support for Mesh Device Firmware Update (DFU) that makes use of an efficient delta compression, based on recognizing the differences between two firmware versions, has been added. The feature requires the use of a version of the Commander tool that supports analyzing ELF binary differences, as well as the use of a bootloader that supports applying the compressed firmware update.

Added in release 7.0.0.0

Support for Clock Manager has been added. The stack components no longer use device_init() for clock initialisation. Instead, the application project must now include the clock_manager component, which does the clock initialisation.
Support for Common Memory Manager has been added.

New APIs

- Added in release 7.0.0.0

Improvements

Changed in release 7.0.0.0

BGAPI changes

A node BGAPI class command, sl_btmesh_node_test_identity, has been added for checking whether a received node identity advertise-ment originates from a given node or not.

Example application changes

Low Power Node feature has been added to Sensor server examples (btmesh_soc_sensor_thermometer, btmesh_soc_nlc_sensor_oc-cupancy btmesh_soc_nlc_sensor_ambient_light), and Friend feature was added to the sensor server client example (btmesh_soc_sen-sor_client).

Fixed Issues

Fixed in release 7.0.2.0

ID #	Description
1331888, 1334927, 1338088, 1338090	Fixed several unhandled memory allocation failures that could potentially lead to a crash when the device is overloaded with traffic.
1345827	Fixed loss of the informative DFU distributor BGAPI event for node removal.
1301401	Fixed Lighting server state update errors when receiving lighting server Set requests with transition time.
1345411	Fixed sl_memory_realloc() leaking memory, leading to the DFU distributor example running out of heap memory.

Fixed in release 7.0.1.0

ID #	Description
1301325	Fixed an issue in storing Scheduler model actions.
1305041	Fixed timeout issue in NCP communication from host to EFR32.
1305928	Fixed loss of correct Receivers list data in DFU events after event loss fix 1258654 was implemented.
1319326	Fixed incorrect values for input and output OOB authentication bit enumerations.

1325194	Fixed unnecessary duplication of DFU distributor client receiver status event after event loss fix 1258654 was implemented.
1310377	Fixed an issue in the IOP Relay app. Previously, it only beamed using GATT.

Fixed in release 7.0.0.0

ID #	Description
356148	Avoids starting advertisement bearer if node is being provisioned using only PB-GATT.
1250461	Made provisioning event reporting more robust on an overloaded device.
1258654	Made DFU event reporting more robust on an overloaded device.
1274632	DFU Distributor and Standalone Updater models will now report an error if the Blob Transfer configuration on the node is not sufficient.
1284204	Fixed saving replay protection to NVM3 when an application uses the sl_btmesh_node_power_off() API.

Known Issues in the Current Release

Issues in bold were added since the previous release

ID #	Description	Workaround
401550	No BGAPI event for segmented message handling failure.	The application needs to deduce failure from timeout/lack of application layer response; for vendor models, an API has been provided.

454059	A large number of key refresh state change events are generated at the end of KR process, and that may flood NCP queue.	Increase the NCP queue length in the project.
454061	Slight performance degradation compared to 1.5 in round-trip latency tests was observed.	
624514	Issue with re-establishing connectable advertising if all connections have been active and the GATT proxy is in use.	Allocate one more connection than is needed.
841360	Poor performance of segmented message transmission over GATT bearer.	Ensure that the underlying BLE connection's Connection interval is short; ensure that ATT MTU is large enough to fit a full Mesh PDU; tune the minimum connection event length to allow multiple LL packets to be transmitted per connection event.
1121605	Rounding errors may cause scheduled events to trigger at very slightly different times than expected.	
1226127	The host provisioner example can get stuck when it starts to provision a second node.	Restart the host provisioner app before provisioning the second node.
1204017	The distributor is not able to handle parallel self FW Update and FW Upload.	Don't run self FW update and FW upload in parallel.

Deprecated Items

Deprecated in release 7.0.0.0

The BGAPI command sl_btmesh_prov_test_identity has been deprecated. Use sl_btmesh_node_test_identity instead.

Removed Items

Removed in release 7.0.0.0

Support for Series 1 hardware (xG12 and xG13) has been removed in this release.

Using This Release

This release contains the following

- Silicon Labs Bluetooth mesh stack library
- Bluetooth mesh sample applications

If you are a first-time user, see QSG176: Silicon Labs Bluetooth Mesh SDK v2. x Quick-Start Guide.

Installation and Use

- The Bluetooth mesh SDK is provided as part of the Simplicity SDK (GSDK), 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, a 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/Sili-conLabs/simplicity_sdk for more information .
- Simplicity Studio installs the Simplicity SDK 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/.

Security Information

Secure Vault Integration

This version of the stack is integrated with Secure Vault Key Management. When deployed to Secure Vault High devices, mesh encryption keys are protected using the Secure Vault Key Management functionality. The table below shows the protected keys and their storage protection characteristics.

Key	Exportability on a node	Exportability on Provisioner	Notes
Network key	Exportable	Exportable	Derivations of the network key exist only in RAM, while network keys are stored on flash.
Application key	Non-exportable	Exportable	
Device key	Non-exportable	Exportable	In Provisioner's case, applied to Provisioner's device key as well as other devices' keys.

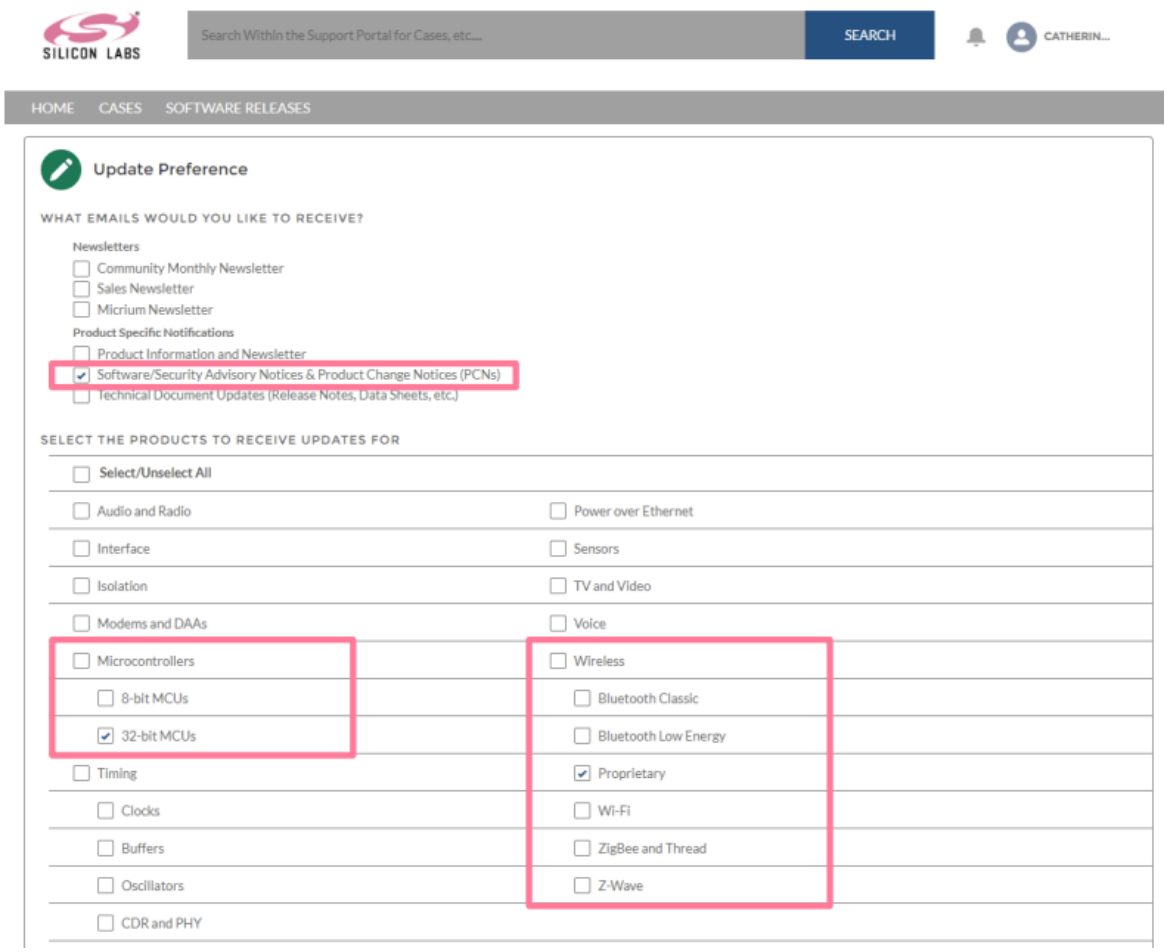
- Keys that are marked as "Non-Exportable" can be used but cannot be viewed or shared at runtime.
- Keys that are marked as "Exportable" can be used or shared at runtime, but remain encrypted while stored in flash.
- For more information on Secure Vault Key Management functionality, see AN1271

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 a minimum for your platform and protocol. Click Save to save any changes.

The following figure is an example.e



Support

Development Kit customers are eligible for training and technical support. Use the Silicon Labs Bluetooth mesh web page to obtain information about all Silicon Labs Bluetooth products and services, and to sign up for product support.
Contact Silicon Laboratories support at http://www.silabs.com/support.

Simplicity Studio

One-click access to MCU and wireless tools, documentation, software, source code libraries & more. Available for Windows, Mac and Linux

- Iot Portfolio
- www.silabs.com/IoT

- SW/HW
- www.silabs.com/simplicity

- Quality
- www.silabs.com/quality

- Support & Community
- www.silabs.com/community

Disclaimer

- Silicon Labs intends to provide customers with the latest, accurate, and in-depth documentation of all peripherals and modules available for system and software implementers using or intending to use SiliconLabs's productsCharacterisationt dataa, available modules and peripherals, memory sizes and memory addresses refer to each specific device, and "Typical" parameters provided can and do vary in different applications.
- Application examples described herein are for illustrative purposes only.
- Silicon Labs reserves the right to make changes without further notice to the product information, specifications, and descriptions herein, and does not give warranties as to

the accuracy or completeness of the included information.

- Without prior notification, Silicon Labs may update product firmware during the manufacturing process for security or reliability reasons. Such changes will not alter the specifications or the performance of the product. Silicon Labs shall have no liability for the consequences of use of the infor-mation supplied in this document.
- This document does not imply or expressly grant any license to design or fabricate any integrated circuits.
- The products are not designed or authorised to be used within any FDA Class III devices, applications for which FDA premarket approval is required, or Life Support Systems without the specific written consent of Silicon Labs.
- A “Life Support System” is any product or system intended to support or sustain life and/or health, which, if it fails, can be reasonably expected to result in significant personal injury or death.
- Silicon Labs products are not designed or authorised for military applications. Silicon Labs products shall under no circumstances be used in weapons of mass destruction, including (but not limited to) nuclear, biological or chemical weapons, or missiles capable of delivering such weapons.
- Silicon Labs disclaims all express and implied warranties and shall not be responsible or liable for any injuries or damages related to the use of a Silicon Labs product in such unauthorised applications.

Trademark Information

Silicon Laboratories Inc.®, Silicon Laboratories®, Silicon Labs®, SiLabs® and the Silicon Labs logo®, Bluegiga®, Bluegiga Logo®, EFM®, EFM32®, EFR, Ember®, Energy Micro, Energy Micro logo and combinations thereof, “the world’s most energy friendly microcontrollers”, Redpine Signals®, WiSeConnect, n-Link, EZLink®, EZRadio®, EZRadioPRO®, Gecko®, Gecko OS, Gecko OS Studio, Precision32®, Simplicity Studio®, Telegesis, the Telegesis Logo®, USBXpress® Zentri, the Zentri logo and Zentri DMS, Z-Wave®, and others are trademarks or registered trademarks of Silicon Labs. ARM, CORTEX, Cortex-M3 and THUMB are trademarks or registered trademarks of ARM Holdings. Keil is a registered trademark of ARM Limited. Wi-Fi is a registered trademark of the Wi-Fi Alliance. All other products or brand names mentioned herein are trademarks of their respective holders.

- Silicon Laboratories Inc.
- 400 West Cesar Chavez Avenue, Austin, TX 78701 USA
- www.silabs.com

FAQs

Q: Where can I find more information about security updates?

A: Refer to the Security chapter of the Platform Release Notes or visit the Silicon Labs Release Notes page for detailed security update information.

Q: How do I subscribe to Security Advisories?

A: Silicon Labs recommends subscribing to Security Advisories for up-to-date information. Follow the instructions provided in the documentation or contact Silicon Labs support.

Documents / Resources

	SILICON LABS Bluetooth Mesh SDK [pdf] Owner's Manual 7.0.3.0, 7.0.2.0, 7.0.1.0, 7.0.0.0, Bluetooth Mesh SDK, Mesh SDK, SDK

References

- Silicon Labs
- Silicon Labs
- Silicon Labs Community
- IoT – Internet of Things - Silicon Labs
- Simplicity Studio - Silicon Labs
- Technical Support - Silicon Labs
- Software Developer Docs - Silicon Labs
- User Manual

7.0.0.0, 7.0.1.0, 7.0.2.0, 7.0.3.0, Bluetooth Mesh SDK, Mesh SDK, SDK, SILICON

SILICON LABS LABS

—Previous Post

Leave a comment

Your email address will not be published. Required fields are marked *

Comment *

Name

Email

Website

Save my name, email, and website in this browser for the next time I comment.

Post Comment

Manuals+, Privacy Policy | @manuals.plus | YouTube

This website is an independent publication and is neither affiliated with nor endorsed by any of the trademark owners. The "Bluetooth®" word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. The "Wi-Fi®" word mark and logos are registered trademarks owned by the Wi-Fi Alliance. Any use of these marks on this website does not imply any affiliation with or endorsement.