Machine Learning

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Silicon Labs ML SDK Version 2.2.1 - Release Notes (Mar 25, 2026)

The Silicon Labs ML SDK is provided as an extension to the Simplicity SDK. It enables AI/ML development on Series 2 (EFR and SiWG917) devices using the Tensorflow Lite for Microcontrollers (TFLM) framework.

Click here for earlier releases.

Release Summary

Key Features | API Changes | Bug Fixes | Chip Enablement

Key Features

Added in 2.2.1

Improved calculation of CPU clocks utilization and inference time in ML Model Profiler.

Added in 2.2.0

- New ML Model Profiler helps developers understand the execution performance of their ML models on the target device and within existing applications. It is available in 2 formats:
  - ML Model Profiler Tool: run `.tflite` model on Series 2 devices to analyze performance before integration.
  - ML Model Profiler Component: integrate profiling directly within an existing application to capture model performance during normal execution.
- New sample applications are available for Profiling ML Models, Data Capture from IMU, and Device Tampering Detection.
- Changed sample application names.
- Demos for more EFR and SiWG917 boards.

API Changes

None.

Bug Fixes

Fixed in 2.2.1

Fixed firmware built with debug symbols instead of a release build.

Fixed in 2.2.0

- Blink app behaves differently when running on Series 2, compared to SiWG917.
- Blink and Voice Control applications now support BRD4338a and similar SiWG917 radio boards.
- Flatbuffer converter tool documentation updated to reflect latest changes.
- Misleading error on macOS for applications built using software optimizations for ML models.
- Removed invalid link to I2S pin configuration for SiWG917 voice-based applications.

Chip Enablement

Added in 2.2.1

None.

Added in 2.2.0

- EFR32MG24B310F1536IM48
- EFR32MG24B210F1536IM48
- EFR32MG24B220F1536IM48
- EFR32MG26B510F3200IM68
- EFR32MG26B410F3200IM48
- EFR32MG26B420F3200IM48
- EFR32MG26B510F3200IL136
- EFR32MG26B410F3200IM68
- EFR32MG26B420F3200IM68
- EFR32MG26B510F3200IM48
- EFR32ZG28B312F1024IM48
- EFR32ZG28B312F1024IM68
- EFR32ZG28B322F1024IM68
- EFR32ZG28B312F1024IM68
- SiWG917M111MGTBA
- SiWG917M141XGTBA
- SiWG917Y111MGNBA
- SiWG917Y111MGAB4
- SiWG917Y121MGNB4

Key Features

New Features | Enhancements | Removed Features | Deprecated Features

> Note: See Feature Matrix for a list of any applicable APIs, examples, software variants, modes, hardware, and host interfaces for each feature.

New Features

Added in 2.2.1

Improved calculation of CPU clocks utilization and inference time in ML Model Profiler.

Added in 2.2.0

- New tool, ML Model Profiler, to profile `.tflite` models. For details, see documentation here. This tool currently only supports EFR devices from the Series 2 family. SiWG917 support is forthcoming.
- New component, ML Model Profiler, to enable profiling of `.tflite` models in existing customer applications. Adding the "ML Model Profiler" component to an application or the `ml-profiler` component to the `.slcp` file of an application will enable this feature. This is not be confused with the ML Model Profiler Tool. This component will eventually be a part of the tool as well. The purpose of keeping this component separate is to allow flexibility to profile ML models in user's existing applications alongside other stacks.
- New sample applications:
  - AI/ML - ML Model Profiler Firmware: Profiling ML Models built for Tensorflow Lite for Microcontrollers.
  - AI/ML - SoC Anomaly Detection for EFR32: Device Tampering Detection by using IMU data and time-series analysis of that data.

- AI/ML - SoC Data Capture for EFR32 Baremetal: Data Capture from IMU into a CSV file. This app requires JLink on the user's workstation.

Enhancements

Added in 2.2.1

None.

Added in 2.2.0

- Changed sample app names from `ml_<app_name>_<platform>` pattern to `aiml_[sub_technology_]<soc|rcp|ncp|host>_<app_name>_<platform>_<os|baremetal>`. This was done to allow quicker segregation of apps based on their capabilities.
- Pre-built demo binaries are now available for more EFR and SiWG917 boards. Newly added demos are:
  - BRD2601B
    - AI/ML - SoC Anomaly Detection EFR32 Baremetal
    - AI/ML - SoC Data Capture EFR32 Baremetal
    - AI/ML - SoC Profiler Firmware EFR32 Baremetal
  - BRD2608A
    - AI/ML - SoC Anomaly Detection EFR32 Baremetal
    - AI/ML - SoC Data Capture EFR32 Baremetal
    - AI/ML - SoC Profiler Firmware EFR32 Baremetal
  - BRD4186C
    - AI/ML - SoC Blink EFR32 Baremetal
    - AI/ML - SoC Model Profiler EFR32 Baremetal
  - BRD4187C
    - AI/ML - SoC Blink EFR32 Baremetal
    - AI/ML - SoC Model Profiler EFR32 Baremetal
  - BRD4338A
    - AI/ML - SoC Audio Classifier SiWG917 Baremetal
    - AI/ML - SoC Blink SiWG917 Baremetal
    - AI/ML - SoC Model Profiler SiWG917 Baremetal
    - AI/ML - SoC Voice Control Light SiWG917 Baremetal
  - BRD4339A
    - AI/ML - SoC Model Profiler SiWG917 Baremetal
  - BRD4340B
    - AI/ML - SoC Model Profiler SiWG917 Baremetal
  - BRD4342A
    - AI/ML - SoC Model Profiler SiWG917 Baremetal
  - BRD4343A
    - AI/ML - SoC Model Profiler SiWG917 Baremetal
  - BRD4343B
    - AI/ML - SoC Model Profiler SiWG917 Baremetal
  - BRD4343Q
    - AI/ML - SoC Model Profiler SiWG917 Baremetal

Removed Features

None.

Deprecated Features

None.

API Changes

New APIs | Modified APIs | Removed APIs | Deprecated APIs

New APIs

None.

Modified APIs

None.

Removed APIs

None.

Deprecated APIs

None.

Bug Fixes

Fixed in 2.2.1

None.

Fixed in 2.2.0

ID	Issue Description	GitHub / Salesforce Reference (if any)	Affected Software Variants, Hardware, Modes, Host Interfaces
1567613 1463269	Blink app behaves differently when running on Series 2, compared to SiWG917. The LED has a baseline brightness on SiWG917 while blinking but it turns off completely on Series 2. This is due to the different LED driver implementations on the two chip families.	None.	• SiWG917M111MGTBA • BRD4338A • SoC
1479985	Blink and Voice Control applications now support BRD4338a and similar SiWG917 radio boards.	None.	• SiWG917M111MGTBA • BRD4338A • SoC
1438989	Flatbuffer converter tool documentation updated to reflect latest changes.	None.	• Documentation
1479970	Misleading error on macOS for applications built using software optimizations for ML models.	None.	• Silicon Labs ML SDK
1497650	Removed invalid link to I2S pin configuration for SiWG917 voice-based applications.	None.	• SiWG917M111MGTBA • SoC

Chip Enablement

Added in 2.2.1

None.

Added in 2.2.0

Chip Family	OPNs / Boards / OPN Combinations	Supported Software Variants (if applicable)	Supported Modes	Supported Host Interfaces
Chip	• EFR32MG24B310F1536IM48 • EFR32MG24B210F1536IM48 • EFR32MG24B220F1536IM48 • EFR32MG26B510F3200IM68 • EFR32MG26B410F3200IM48 • EFR32MG26B420F3200IM48 • EFR32MG26B510F3200IL136 • EFR32MG26B410F3200IM68 • EFR32MG26B420F3200IM68 • EFR32MG26B510F3200IM48 • EFR32ZG28B312F1024IM48 • EFR32ZG28B312F1024IM68 • EFR32ZG28B322F1024IM68 • EFR32ZG28B312F1024IM68 • SiWG917M111MGTBA • SiWG917M141XGTBA • SiWG917Y111MGNBA • SiWG917Y111MGAB4 • SiWG917Y121MGNB4	Standard	SoC	• UART • SPI • I2S • I2C

Application Example Changes

New Examples | Modified Examples | Removed Examples | Deprecated Examples

New Examples

Added in 2.2.1

None.

Added in 2.2.0

Example Name	Description	Supported Software Variants (if applicable)	Supported Modes	Supported OPNs / Boards / OPN Combinations	Supported Host Interfaces
AI/ML - ML Model Profiler Firmware	Profiling ML Models built for Tensorflow Lite for Microcontrollers.	Standard	SoC	• OPN: EFR32xG2x, SiWG917 • Boards: BRD2601B, BRD2608A, BRD4186C, BRD4187C, BRD4338A, BRD4339A, BRD4340B, BRD4342A, BRD4343A, BRD4343B, BRD4343Q • External Hosts: N/A	

Example Name	Description	Supported Software Variants (if applicable)	Supported Modes	Supported OPNs / Boards / OPN Combinations	Supported Host Interfaces
AI/ML - SoC Anomaly Detection for EFR32	Device Tampering Detection by using IMU data and time-series analysis of that data.	Standard	SoC	• OPN: EFR32xG2x • Boards: BRD2601B, BRD2608A • External Hosts: N/A	
AI/ML - SoC Data Capture for EFR32 Baremetal	Data Capture from IMU into a CSV file. This app requires JLink on the user's workstation.	Standard	SoC	• OPN: EFR32xG2x • Boards: BRD2601B, BRD2608A • External Hosts: N/A	

Modified Examples

None.

Removed Examples

None.

Deprecated Examples

None.

Known Issues and Limitations

Refer to the ML Model Profiler Troubleshooting section for known issues and their solutions.

Using This Release

What's in the Release? | Compatible Software | Installation and Use | Help and Feedback

What's in the Release?

Improved calculation of CPU clocks utilization and inference time in ML Model Profiler.

Compatible Software

Software	Compatible Version or Variant
Software Development Kit (SDK)	• Simplicity SDK: 2025.12.2 • WiSeConnect SDK: 4.0.1

Installation and Use

To upgrade your existing software with this release, update Simplicity Studio to the latest, Simplicity SDK to v2025.12.1, WiSeConnect SDK to v4.0.1, and ML SDK to v2.2.1 from Studio installation manager, or download the SDKs from the respective links listed in Compatible Software section above. To update the ML SDK, please refer to AI/ML SDK Setup guide.

To run your first demo, see our Getting Started

To kick start your development, see our Developer's Guide

For information about Secure Vault Integration, see Secure Vault.

To review Security and Software Advisory notifications and manage your notification preferences:

1. Go to https://community.silabs.com/.
2. Log in with your account credentials.
3. Click your profile icon in the upper-right corner of the page.
4. Select Notifications from the dropdown menu.
5. In the Notifications section, go to the My Product Notifications tab to review historical Security and Software Advisory notifications
6. To manage your preferences, use the Manage Notifications tab to customize which product updates and advisories you receive.

To learn more about the software in this release, dive into our online documentation

Help and Feedback

- Contact Silicon Labs Support.
- To use our Ask AI tool to get answers, see the search field at the top of this page.

> Note: Ask AI is experimental.

- Get help from our developer community.

Feature Matrix

Supported Features | Unsupported Features

Supported Features

None.

Unsupported Features

- SiWG917 does not use the built-in TensorFlow component directly; instead, support is provided through automatic code generation handled by advanced configurators.
- Series 2 devices do not support new software optimizations. However, due to their architecture, they are still at least as efficient as SiWG917.
- MVP Compiler is not supported on macOS natively, recommend using a linux container environment.

SDK Release and Maintenance Policy

See our SDK Release and Maintenance Policy.