Flex SDK 2.0.0.0 GA

Silicon Laboratories, Inc.

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1 Release Highlights

1.1 Version 2.1.0.0 GA:

1.1.1 RAIL

- Updated to RAIL library v2.2.0

- Added a RAIL Light application

- Added a RAIL Switch application for Flex/BLE Dynamic Multi Protocol

- Fixed build issues with RAIL Range Test example application

- Removed non-RAIL specific generated project files

- Various bug fixes

1.1.2 Connect

- Added MAC Mode Device example applications

- Added IEEE 802.15.4 MAC security level 4 support

- Added SimEE v2 ''non-volatile memory support

- Various bug fixes

2 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 Plugins and Application Framework

For more information about the Flex SDK see UG103.13 - Application Development Fundamentals: RAIL and UG103.12 - Application Development Fundamentals: Connect. If you are a first time user, see QSG138: Getting Started with the Silicon Labs Flex Software Development Kit for the Wireless Gecko (EFR32) Portfolio.

2.1 Installation:

Installation of the Flex SDK is covered in the document QSG138

2.1.1 Compatible Software:

The Flex SDK should be used in conjunction with the Silicon Labs Simplicity Studio V4 development platform.

2.2 Support:

Development Kit customers are eligible for training and technical support. You can use the Silicon Laboratories web site http://www.silabs.com to obtain information about all Silicon Labs Zigbee products and services, and to sign up for product support.

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

3 Added Items

3.1 Version 2.1.0.0 GA:

3.1.1 New Application Plugins:

- Libraries: This plugin contains bundled libraries for all of the parts currently supported by the Flex SDK. This includes but is not limited to libraries for the following: AES Security Form and Join Frequency Hopping HAL Packet Queue Parent Support RAIL Simulated EEProm version 1 Stack Counters XXTEA Security

- WMBus Helper: This plugin contains all of the code associated with the Wireless M-Bus protocol. This plugin is used in the WMBus sample application.

- Application Configuration: This plugin contains all necessary configurations (startup files, linker configurations, and etc.) for RAIL applications.

3.1.2 New Stack APIs:

- NEW RAIL APIs

4 Changed Items

4.1 Version 2.1.0.0 GA:

- All RAIL and Connect sample applications have been upgraded to the RAIL 2.0 API.

- RAIL Range Test sample application's LCD menu items (Data Rate, Modulation, and Deviation) were removed as part of RAIL 2.0 migration.

5 Deprecated Items

5.1 Version 2.1.0.0 GA:

We are planning on removing these items in a future release. Please either migrate to the newer alternative, or alert the support team to your needs.

6 Removed Items

6.1 Version 2.1.0.0 GA:

Support for the EZR32 Radio family has been removed from the Connect stack and the Flex SDK. For Connect Stack support on the EZR32 family please refer to a previous SDK such as Flex 1.2.

7 Fixed Issues

7.1 Version 2.1.0.0 GA:

- 274880 Clean up RTOS release list

- 279672 Flex 2.0 RTOS warnings "RTCDRV_xxx" declared implicitly

- 280014 setRxTransitions is missing the error event bitfield

- 280949 Add the MAC mode sample app in the Flex RTOS package

- 281626 Gecko bootloader doesn't build in Flex 2.0 RTOS package

- 281743 Rangetest does not work on Nixi, Jumbo etc.. with Connect Profile 868 or 915

- 283041 Flex Master broken. Error while loading Stack

- 283321 (AppBuilder) Multiple plugins requiring the same callback cause App Builder error

- 286832 (AppBuilder) hal-config.h shouldn't be overwritten by default by appbuilder

- 287822 Apps not building for 4170a brd

- 287828 (AppBuilder) Not able to build the RailTest-AlgFT-8FTLengthFilter-1bit.isc railtest app on flex master on BRD4150B- illegal argument error

- 288466 (AppBuilder) Can not build several of MG/FG/BG test applications

- 288589 Getting HWCONFIG error on two apps

- 288678 (AppBuilder) Can not build 4170A for RAILTest

- 288808 Build warning when building RailTest for BRD4170A - integer conversion resulted in a change of sign

- 290213 Range test menu cursor moves too fast.

- 288709 Added USART3 defines to plugin/serial/com_vcom.h.

- 279860 Coexistence: GRANT denial shows incorrect REQUEST deassert/re-assert behavior.

- 284767 HAL_HAS_INT64 is now defined for GCC Cortex-M builds, properly indicating the platform's support for 64-bit integers. A side effect of this is that GCC-built EmberZNet applications can now define an end device child table larger than 32.

8 Open Issues

8.1 Flex Open Issues:

- 290566 This bug was introduced in Gecko SDK Suite 2.1.0 and can cause issues with receive communication in certain circumstances. This only affects customers using the RAIL Library directly. In particular, this only affects Proprietary applications using FIFO mode and using either RAIL_HoldRxPacket or RAIL_PeekRxPacket. Proprietary applications that use neither of those two APIs should be unaffected. Silicon Labs plans to address this issue in early January, 2018. If your application is using either of these APIs, please contact customer support and we can help provide a workaround to this problem. This bug did not exist prior to Gecko SDK Suite 2.1.0.

- 290666 When using a sub-GHz phy with the Rail switch and BLE Light Dynamic Multi-Protocol (DMP) sample application, the BLE Light may stop sending status reports to the Rail Switch after repeated button presses on the BLE Switch. This behavior can be un-stuck by toggling the Rail Switch and sending a new toggle command to the BLE Light.

- 249575 EFR32FG1VF64GM32's program based on RAIL of Flex stack stays at startup file

- 260616 Flex: Publish Doxygen documentation on the website

- 260625 [QA] 2.4GHz and Sub-GHz FHSS (Frequency Hopping Spread Spectrum) support

- 262574 Adding Flex to cstat jenkins page

- 262589 Help out resolving CSTAT issues on Connect plugins

- 275141 Too many initializer values for hal button enable on BG

- 275587 HWConfig name for file on default generate for BG Module is FG not BG

- 275707 SPI Display's default config generates error

- 276695 em_device.h cannot be found

- 290240 Sensor Sink test failing with 4170a

- 251287 To achieve the lowest current during sleep on EFR32xG12, EFR32xG13, and EFR32xG14 parts, you must turn on voltage scaling. However, the radio will not operate with voltage scaling turned on, so to turn it on you must also make sure to disable it after each wake-up. Furthermore, some resets will not turn off voltage scaling, so please ensure that it is disabled before attempting to turn on the radio.

- 285563 platform/base/phy/phy.h is incorrectly included in the stack install and references other header files not available in the installer.

8.2 RAIL Open Issues:

9 Intended Behavior

9.1 Flex Open Issues:

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9.2 RAIL Open Issues:

10 Documentation Changes

11 History