

Flex SDK 2.0.0.0 GA

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1 Release Highlights

1.0.1 Version 2.0.0.0 GA:

- Released new RAIL API version 2.x designed for dynamic multi-protocol support (note: RAIL API 2.x is not backwards compatible with RAIL API 1.x)
- Updated all RAIL and Connect examples applications to work with the new RAIL API 2.x
- Added Wireless M-BUS PHYs support in Radio Configurator for all modes
- Added Simple RAIL TX and RX examples for Wireless M-BUS PHY profiles
- Integrated RAIL and Connect examples with the new Hardware Configurator
- Added support for basic IEEE 802.15.4 MAC functionality to Connect
- Removed support for EZR32 from Flex SDK. EZR32 example applications are now available only through the MCU SDK

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

3.1.2 New Stack APIs:

- NEW RAIL APIs

4 Changed Items

4.1 Version 2.0.0.0 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 2.0.0.0 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 2.0.0.0 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 2.0.0.0 GA:

- 272283 Connect - flex-cli.c no longer included

- 272181 Can't load flex_dev from release build
- 272160 Port architecture selector to Flex This brings in the new architecture selector now used by all stacks
- 272041 call to emLowerMacGetRadioPower() results in RAIL assert RAIL_ASSERT_CONVERSION_CURVES_NOT_INITIALIZED
- 272017 call to emberStartEnergyScan(channel, samples) crashes when samples are greater than 127
- 270485 RAIL apps should stop including flex_*.c files
- 270418 WMBus Sample app creates duplicate time stamps on sequential packets sometimes
- 270384 BlackDuck reported issue: do not use files in MemMang - This was determined to be OK due to release of source code.
- 270060 MAC packets sent with source address mode None get dropped by receiver
- 269250 BG13 specific libraries are missing from Connect
- 268465 Change directory structure of Flex and Connect The flex directory was moved out side of the Connect directory
- 268003 Move Makefile template into esf_common
- 267718 MAC mode test sample app added to Connect
- 267717 Add a Connect mac-device sample app
- 267262 Can't test Bit Error Rate (BER) by using RAILTEST in both of Flex v1.2.0 and Flex v1.2.1 This functionality was added back in for Flex 1.3
- 266742 Syntax error in com_config.h
- 265754 Update Connect to use Rail 2.0 library
- 265620 Update all Flex sample applications to use Rail 2.0
- 263289 Connect's postbuild script should generate GBL files
- 263175 Add Union struct params to python TMSP/CSP generation scripts
- 262398 Remove EZR32 documentation
- 262357 EFR32MG/FG14 phy configuration for Connect
- 262343 Add EFR32MG/FG14 part support to configurator
- 262182 Remove EZR32 specific plugins metadata
- 261881 Remove EZR32 from library Makefile / makefile metadata
- 261877 Remove EZR32 from build templates / isc files
- 261876 Remove EZR32 parts support in appbuilder*.properties
- 261856 Remove EZR32 from stack metadata.
- 261684 Remove EZR32 support from Flex SDK
- 261049 Incorporate sample applications into Flex stack release
- 261047 Add WMBus Phys to Radio Configurator in AppBuilder

- 261046 Add EFR32MG/FG14 device support to AppBuilder
- 260612 Dynamic Slicers Change via RAIL API
- 260609 EFR32MG/FG14 device support in Flex SDK (RAIL and Connect)
- 260398 SimpleRAIL without HAL fails to build
- 260252 Missing libraries for BG13
- 259797 When building `simple_trx_with_sw_ack` get warnings with IAR
- 259753 `simple_trx_with_fifo` does not compile cleanly for IAR
- 259319 Wire replacement example for 4151A doesn't work
- 258845 Connect doesn't do any calibration
- 258718 Fix RAILTEST compilation from source
- 258209 `simple_trx` and other example projects should use volatile keyword for callback affected variables
- 255698 User unable to override compiler setting due to default template values
- 255167 Remove 4300A from `boardHeaders.properties`
- 252802 Console connection in Network Analyzer fails after uploading `wire_replacement` application on EZR32LG
- 252662 ARM GCC compilation fails with `wirereplacement` targeting EZR32
- 251612 Misleading connect bootloader names
- 250335 Radio Config Support for WMBus Phys in Flex/RAIL
- 249631 Update NCP/HOST with new APIs
- 247607 Migrate EZR32 metadata for HALConfig board header move
- 247142 Replacement key template is not usable for RAIL
- 247141 Event setup is not usable in RAIL
- 246888 Make regen causes `connected_motion.isc` to replace "\$FRAMEWORK" with local machine path
- 246596 Get 'Board Type' in General tab and 'Board Header Configuration' in HAL tab in sync when changed
- 246088 Release RTOS RAIL-lib in a supportable configuration
- 246069 Appbuilder in Flex has two board configuration inputs
- 245133 incoming beacon should include pjoin state of coordinator/extender
- 244815 Unneeded dependency: spi-flash
- 242383 Build errors using Flex stack with USB plugins
- 237803 High sleep current on EFR
- 220392 Make RAIL apps use chip specific ICF file
- 119491 Connect on EZR32: Move dash D macros out of template files.
- 184412 Update Connect templates to the SDK gold standard

- 221544 Move hal functionality into sample applications
- 137069 Connect on r55 chips does not work at 1MHz+ SPI speeds.
- 135621 CORTEXM3_EZR32LG230F256 shouldn't be hard coded
- 230563 Allow RAIL apps to run on EmberHAL
- 277282 Range test sample app does not work

8 Open Issues

8.1 Flex Open Issues:

- 243470 Seeing difference in txAt time between RAIL Phy and connect Phy at similar datarate and frequencies
- 249107 Extend Connect to support Digi-MAC features
- 249575 EFR32FG1VF64GM32's program based on RAIL of Flex stack stays at startup file
- 252431 Q3 Flex Bug Fixes
- 260616 Flex: Publish Doxygen documentation on the website
- 260625 [QA] 2.4GHz and Sub-GHz FHSS (Frequency Hopping Spread Spectrum) support
- 261101 Flex : Integration with Q3 Hardware Configurator
- 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* 280404 *PHY_W Mbus_T + C100k_n o3 of 6_n o_c r con BRD4250 B does not have the right first 2 bytes*

8.2 RAIL Open Issues:

9 Intended Behavior

10 Documentation Changes

11 History