



Bluetooth SDK 2.11.3 GA

Silicon Laboratories, Inc.

March 22, 2019

1 Release Highlights

- EFR32[B|M]G21 support
- Selected quality improvements and bug fixes (details in Chapter 7)

2 Compiler Versions

This SDK supports GCC compiler v7.2.1 and IAR compiler v8.30.1. Other versions have not been tested.

3 Added Items

No items in this category has been added.

4 Changed Items

No items in this category has been changed.

5 Deprecated Items

No items in this category has been deprecated.

6 Removed Items

No items in this category has been removed.

7 Fixed Issues

- Issue 5747: In version 2.11.2, after an application in SoC mode has the configured maximum number of active connections, when one connection is disconnected, starting a connectable advertising under connection closed event will fail with connection limit exceeded error. This error does not happen in NCP mode.
- Issue 5806: Previously, when the application sets a static random device address the stack does not validate its type bits. This has been fixed now. Invalid parameter error will be returned if the type bits in given address is not 0b11.
- Issue 5808: Reading and writing of PS keys is now possible for all keys including bonding specific keys.
- Issue 5917: In version 2.11.2 when a user application has enabled the mode of accepting bonded connections only, the stack will close connections initiated from non-bonded devices and generate connection closed events to user. This behavior unnecessarily complicates user applications using this



mode. This has now been fixed that, the stack will automatically close the connection and restart the advertising, but it will not generate any events to user.

8 Open Issues

- Issue 1835: With certain events, GCC breakpoints cannot be set.
- Issue 4521: Command `gecko_cmd_gatt_discover_primary_services_by_uuid` returns success in case of incomplete parameters.
- Issue 4559: Deleting a bonding of a device while the device is still connected causes the stack using outdated bonding data on the connection.
- Issue 5390: The `sync_data` event does not report TX power.
- Issue 5851: There are no part support files for EFR32xG12P232F512xxx in current IAR Embedded Workbench public release. This results in broken IAR projects for these parts. Workaround is to install the additional part support file via the CMSIS-Pack Installer.

9 Documentation Changes

No documentation has been changed.



Bluetooth SDK 2.11.2 GA

Silicon Laboratories, Inc.

February 26, 2019

1 Release Highlights

- Selected quality improvements and bug fixes (details in Chapter 6)

2 Added Items

2.1 New Features

- Feature 5694: New configuration flag in Bluetooth Security Manager for only accepting connections from bonded devices. If this flag is enabled, the stack will automatically disconnect a connection with error code authentication failure when the remote device is not bonded. See `gecko_cmd_sm_configure` documentation for details.

3 Changed Items

No items in this category has been changed.

4 Deprecated Items

No items in this category has been deprecated.

5 Removed Items

No items in this category has been removed.

6 Fixed Issues

- Issue 5506: when attempting to read the value of a user type characteristic, `gecko_cmd_gatt_server_read_attribute_value` should return 0x0480 (application error) for being consistent with other commands.
- Issue 5688: when Bluetooth stack runs in RTOS, GATT procedure timeout error may be returned even the response to an ATT request has been successfully processed.

7 Open Issues

- Issue 1835: With certain events, GCC breakpoints cannot be set.
- Issue 4521: Command `gecko_cmd_gatt_discover_primary_services_by_uuid` returns success in case of incomplete parameters.



- Issue 4559: Deleting a bonding of a device while the device is still connected causes the stack using outdated bonding data on the connection.
- Issue 5390: The `sync_data` event does not report TX power.

8 Documentation Changes

- Documentation update in UG136
- Issue 5505: `gecko_cmd_gatt_read_multiple_characteristic_values` documentation has been fixed for describing the actual behavior.



Bluetooth SDK 2.11.1 GA

Silicon Laboratories, Inc.

January 28, 2019

1 Release Highlights

- Bluetooth 5.1 - GATT Caching
- Selected quality improvements and bug fixes (details in Chapter 6)
- Gecko Bootloader has been updated to version 1.8.0 to fix a critical security issue. We strongly recommend all customers using image signing to upgrade their products to this latest version which was introduced in Gecko SDK Suite 2.5.0 (Q4 2018 release in December). Bootloader field update instructions are described in this [knowledge base article](#).

2 Added Items

2.1 New Features

- Feature 4914: GATT Caching. By default, this feature is enabled if application's GATT database XML has a Generic Attribute Profile service. The feature can also be enabled and disabled from Visual GATT Editor.
- Feature 5463: If a GATT client subscribes to notifications or indications before bonding is created, then those subscriptions are stored permanently in the GATT server. In previous versions, only the subscriptions that were created after the bonding were saved.

2.2 New APIs

The following commands can only be used on EFR32BG13 devices. However, they are only meaningful in the case one is developing Angle of Arrival applications in the future.

- `gecko_cmd_cte_transmitter_enable_cte_response` for enabling CTE responses on a connection
- `gecko_cmd_cte_transmitter_disable_cte_response` for disabling CTE responses on a connection
- `gecko_cmd_cte_transmitter_set_dtm_parameters` for setting CTE related parameters of LE transmitter test
- `gecko_cmd_cte_transmitter_clear_dtm_parameters` for clearing CTE related parameters previously set for LE transmitter test
- `gecko_cmd_cte_receiver_start_iq_sampling` for starting IQ samplings on a connection
- `gecko_cmd_cte_receiver_stop_iq_sampling` for stopping IQ samplings on a connection
- `gecko_cmd_cte_receiver_set_dtm_parameters` for setting CTE related parameters of LE receiver test
- `gecko_cmd_cte_receiver_clear_dtm_parameters` for clearing CTE related parameters previously set for LE receiver test
- `gecko_evt_cte_receiver_iq_report` for receiving IQ samples reports

3 Changed Items

No items in this category has been changed.

4 Deprecated Items

No items in this category has been deprecated.



5 Removed Items

No items in this category has been removed.

6 Fixed Issues

- Issue 5490: GATT server may fail to send read responses immediately after connection is opened.
- Issue 5507: gecko_cmd_test_dtm_tx command does not work with certain packet lengths
- Issue 5542: Application fails to compile if BGAPI commands from the sync class are used

7 Open Issues

- Issue 1835: With certain events, GCC breakpoints cannot be set.
- Issue 4521: Command gecko_cmd_gatt_discover_primary_services_by_uuid returns success in case of incomplete parameters.
- Issue 4559: Deleting a bonding of a device while the device is still connected causes the stack using outdated bonding data on the connection.
- Issue 5390: The sync_data event does not report TX power.

8 Documentation Changes

No items in this category has been changed.



Bluetooth SDK 2.11.0 GA

Silicon Laboratories, Inc.

December 14, 2018

1 Release Highlights

- Bluetooth 5 periodic advertising for EFR32xG12 and EFR32xG13
- Bluetooth 1.2 privacy – whitelisting feature (central side only)
- 802.11 co-ex – PWM request mode
- Selected quality improvements and bug fixes (details in Chapter 6)

2 Added Items

2.1 New Features

- Feature 3597: The Bluetooth stack supports periodic advertising feature for EFR32xG12 and EFR32xG13. See UG136 for the details.
- Feature 4611: The Bluetooth stack supports Bluetooth 1.2 privacy whitelisting on central role. This feature is not supported on peripheral role. See UG136 for the details.
- Feature 4944: New characteristic property types for the GATT configurator: encrypted notify, authenticated notify and bonded notify.

2.2 New APIs

- `gecko_cmd_le_gap_start_periodic_advertising` for starting periodic advertising
- `gecko_cmd_le_gap_stop_periodic_advertising` for stopping periodic advertising
- `gecko_cmd_sync_open` for establishing synchronizations with periodic advertising
- `gecko_cmd_sync_close` for closing a synchronization or cancel an synchronization establishment procedure
- `gecko_cmd_le_gap_enable_whitelisting` for enabling and disabling the whitelisting functionality
- `gecko_cmd_sm_add_to_whitelist` for adding devices to whitelist
- `gecko_cmd_system_set_identity_address` for setting the device's Bluetooth identity address
- `gecko_evt_sync_opened` for indicating that a synchronization has been established
- `gecko_evt_sync_closed` for indicating that a synchronization has been closed
- `gecko_evt_sync_data` for reporting the advertising data received on a synchronization

3 Changed Items

3.1 Extended Advertising

EFR32xG1 supports multiple advertising sets and scan request reports, but does not support advertising or scanning on secondary advertising channels.

3.2 API extensions

- Parameter `scan_rsp` in command `gecko_cmd_le_gap_bt5_set_adv_data` supports a new type for setting periodic advertising data.
- Response `gecko_msg_le_gap_set_advertise_tx_power_rsp_t` has a new field for returning the actual selected maximum advertising TX power.

3.3 API changes

- Command `gecko_cmd_sm_delete_bonding` has been extended for deleting the bonding or whitelisting of a device.
- Command `gecko_cmd_sm_delete_bondings` has been extended for deleting all bondings and the whitelist.
- Command `gecko_cmd_le_gap_set_advertise_tx_power` will select the allowed maximum TX power and return it to application if the given value is bigger than the global maximum TX power setting. In previous version this command will fail with invalid parameter error code in this situation.
- Functions `gecko_init` and `gecko_stack_init` return an `errorcode_t`. This error code can be used to verify whether the Bluetooth stack has been successfully initialized.

3.4 Changes in sample applications

- `soc-empty` example is restructured to allow easier migration between SDK versions. For more details, see this [knowledge base article](#).

4 Deprecated Items

4.1 Deprecated APIs

- Command `gecko_cmd_system_set_bt_address` is deprecated. Replacement is `gecko_cmd_system_set_identity_address`.

5 Removed Items

5.1 Removed APIs

- Command `gecko_cmd_endpoint_close` is removed. Use command `gecko_cmd_le_connection_close` to close Bluetooth connections.
- Command `gecko_cmd_gatt_server_set_database` is removed. Use `gecko_cmd_gatt_server_set_capabilities` command to dynamically configure services and characteristics of the local GATT database.
- Command `gecko_cmd_hardware_enabled_dcdc` is removed. Use EMDRV or EMLIB for DCDC control.

6 Fixed Issues

- Issue 3840: GATT database XML does not support adding permissions to the write property of a characteristic client configuration descriptor.
- Issue 3894: Eventually out of memory error will be returned if application repeats closing a connection while a GATT procedure is outstanding.
- Issue 4295: Connection limit is reached too early in dual topology scenario.
- Issue 4557: Command `cmd_gatt_server_send_characteristic_notification` returns invalid parameter error code if there is no open connection.
- Issue 4677: Canceling an outstanding connection request does not complete if the device is scanning simultaneously.
- Issue 4945: Stack schedule callback does not trigger for boot event.
- Issue 4987: The PHY parameter is not fully validated when starting device discovery.
- Issue 5251: Advertising timeout event is not always generated.
- Issue 5311: Service changed indication is sent even if GATT database has not changed.

7 Open Issues

- Issue 1835: With certain events, GCC breakpoints cannot be set.
- Issue 4521: Command `gecko_cmd_gatt_discover_primary_services_by_uuid` returns success in case of incomplete parameters.
- Issue 4559: Deleting a bonding of a device while the device is still connected causes the stack using outdated bonding data on the connection.
- Issue 5390: The `sync_data` event does not report TX power.

8 Documentation Changes

- Issue 5009: Documentation improvements in UG136
- Issue 5159: Description for `gecko_cmd_system_halt` command has been clarified that this command can only be used for short time period.
- Issue 5268: Documentation for `gecko_cmd_system_linklayer_configure` command has been added
- Issue 5281: Command `gecko_cmd_le_gap_connect` documentation improvement regarding scanning parameters.