

Release Notes

BL654

Version 29.3.3.0

Dec 2018

Release notes are a summary of new and enhanced features, resolved issues, and known issues that are not resolved in this firmware version. This release note describes the changes and enhancements to the firmware of the BL654 *smartBASIC* based Bluetooth Low Energy Module in reverse chronological order.

For each version (excluding the initial 29.1.1.0) there are subsections for 'New Features', 'Bug Fixes' and 'Known Issues'.

BL654 firmware version numbers consist of four numbers in the format **W.X.Y.Z** which can be read back from the module by submitting the command AT I 3 when it is in command mode.

W signifies the module ID, which in the case of BL654 is 29.

X is used to indicate the underlying BLE stack version and so far the values have been:

- 1 Production release of Nordic's Softdevice version 6.0.0
- 2 Production release of Nordic's Softdevice version 6.1.0
- 3 Production release of Nordic's Softdevice version 6.1.1

Y is the release version, i.e. the major build number

Z is a sub-build number. When it is 0 or an even number it signifies that the firmware image is a production image that has been fully regression tested. An odd number indicates an engineering image.

- [Version 29.3.3.0 \(Dec 2018\)](#)
- [Version 29.2.2.0 \(Aug 2018\)](#)
- [Version 29.1.1.0 \(May 2018\)](#)

VERSION 29.3.3.0 (DEC 2018)

This firmware is built to work with v6.1.1 of the S140 Softdevice from Nordic Semiconductor which is BT Spec version 5.0 qualified.

New Features

The following are new features in the current version, please refer to the manual for usage.

- **QSPI:** Added the ability to allow BL654 to operate as a QSPI master.
- **BLE:** Maximum number of connections increased from 8 to 16.
- **BLE:** Added ability to set channel map from smartBASIC application.
- **CRC:** added CRC16 and CRC32 error detection functions.
- nRFx-Command-Line-Tools updated to version 9.8.1.
- Moved to Softdevice v6.1.1 and SDK 15.2.0.

Changes

- **VSP:** VSP via indicate feature is no longer supported.

Resolved Issues

The following issues have been resolved in this release:

- **BLE** – Fixed a bug where invalid latency limit was calculated (12463)
- **UART** – Fixed a bug where standby doze (SYSTEM ON IDEL) current was not achieved (13699)

Known Issues

The following are known issues in this release:

- Advertising extensions is only provided as an experimental feature in this release and the API may be modified and updated in future releases.
- During a BLE connection, when a GATT service is changed in a GATT server, the GATT client does not receive an event notifying it of the change (9628).
- For the GATT server, the long writes feature on authorizable characters is not yet implemented and will be added in future releases (11193).
- NFC FIELD ON event is not triggered when field sensing is disabled then enabled (Bug 13244).

VERSION 29.2.2.0 (AUG 2018)

This firmware is built to work with v6.1.0 of the S140 Softdevice from Nordic Semiconductor which is BT Spec version 5.0 qualified.

New Features

The following are new features in the current version, please refer to the manual for usage.

- **LESC**: Added fix for Bluetooth vulnerability VU#304725 where public keys weren't validated during LESEC pairing.
- **BLE**: Advertising, scanning and connecting over CODED PHY is now supported.
- **Watchdog**: Exposed Watchdog timer functionality through smartBASIC API.
- **SPI Slave**: Added SPI Slave API to allow the BL654 to operate as an SPI Slave peripheral.
- **UART**: Added new API to allow the second UART peripheral to be used.
- **Flash**: Added new high level API for accessing external flash.
- Moved to Softdevice v6.1.0.

Resolved Issues

The following issues have been resolved in this release:

- **DTM** – Added missing Tx power values (2dBm, 5dBm, 6dBm, 7dBm and 8dBm).
- **DTM** – Fixed sensitivity issues on engineering B and C silicon.
- **BLE** – Fixed an issue where a connection timeout event was being thrown instead of a scanning timeout event (13196).
- **SPI** – Fixed bug where SPI operation would hang if the bus is not correctly configured (13287).

Known Issues

The following are known issues in this release:

- Advertising extensions is only provided as an experimental feature in this release and the API may be modified and updated in future releases.
- During a BLE connection, when a GATT service is changed in a GATT server, the GATT client does not receive an event notifying it of the change (9628).
- For the GATT server, the long writes feature on authorizable characters is not yet implemented and will be added in future releases (11193).

VERSION 29.1.1.0 (MAY 2018)

This firmware is built to work with v6.0.0 of the S140 Softdevice from Nordic Semiconductor which is BT Spec version 5.0 qualified.

Known Issues

The following are known issues in this release:

- CODED PHY functionality is not Bluetooth qualified in this release. This feature is available for development and testing purposes only.
- Advertising in CODED PHY is not supported and will be provided in future versions of the firmware.
- During a BLE connection, when a GATT service is changed in a GATT server, the GATT client does not receive an event notifying it of the change (9628).
- For the GATT server, the long writes feature on authorizable characters is not yet implemented and will be added in future releases (11193).

Further Information

Further information relating to the BL654 and its firmware is available from the Laird website at <https://www.lairdtech.com/products/bl654-ble-thread-nfc-modules>