

s130_nrf51822 release notes

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Introduction to the s130_nrf51822 release notes

These release notes describe the changes in the s130_nrf51822 from version to version.

The release notes are intended to list all relevant changes in a given version. They are kept brief, to make it easy to get the overview. More details regarding changes and new features may be found in the s130_nrf51822 migration document (normally available for major releases only).

Issue numbers in parentheses are for internal use, and should be disregarded by the customer.

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s130_nrf51822_0.9.0-1.alpha

The s130 is based upon Nordic Semiconductor's existing S110 and S120 SoftDevices, extended to support concurrent LL and GAP roles.

s130_nrf51822_0.9.0-1.alpha memory resource requirements

- Flash: 116 kB
- RAM: 10 kB (plus 1.5 kB call stack) when enabled, 8 bytes when disabled

New functionality

- SoftDevice
 - The SoftDevice now contains a Master Boot Record (MBR), which enables Device Firmware Update (DFU) of the SoftDevice itself (in addition to the application and bootloader) over the air. The MBR API enables copying and comparing regions in flash memory, and interrupt forwarding.
- BLE
 - Using the options API `sd_ble_opt_set()`, it is possible for the application to configure whether the CPU can execute while the radio is active.
 - A new API call, `sd_ble_enable()` has been added. This must be called to initialize and enable the BLE stack after invoking `sd_softdevice_enable()` and previous to any BLE activity (DRGN-2879, NRFFOETT-215).
- GAP
 - The SoftDevice now supports broadcasting while in a active connection (DRGN-4534).
 - The application can now provide its own display passkey during a pairing procedure that uses the passkey entry algorithm.
 - Privacy 1.1 (peripheral only): The SoftDevice is now able to generate and refresh resolvable and non-resolvable private addresses while advertising or broadcasting. The application may set a custom IRK and an address cycle interval, but also retains the option to set addresses explicitly.
 - The application has the option to enable reports to be generated when an advertiser receives a SCAN REQUEST.
 - Added support for setting advertising channel map in `ble_gap_adv_params`.
- GATTs
 - The application can choose not to include the Service Changed characteristic within the GATT server by using the parameters in the new `sd_ble_enable()` API call.

Changes

- SoftDevice
 - The `sd_softdevice_forward_to_application()` call has been replaced with `sd_softdevice_vector_table_base_set()`, which takes the forwarding address as an argument (FORT-815, NRFFOETT-688).
 - The DCDC converter settings have been changed.
- BLE
 - The CPU can now, by default, execute while the radio is active. For nRF51 IC revision 2 silicon, the option API should be configured to prevent the CPU from executing while the radio is active.
- GAP
 - It is not permitted to change the white list while it is being used by an active role.

- GATTS
 - `sd_ble_gatts_value_set()` and `sd_ble_gatts_value_get()` API calls use `ble_gatts_value_t` structure instead of `(uint8_t *)` for attribute value set and get operations.

Bugfixes

- Fixed an issue where it was not possible to start advertising when already scanning (DRGN-4893).
- Fixed an issue where the SoftDevice might assert during connection parameter update (DRGN-5064).

Limitations

- SoftDevice
 - The DCDC converter should only be used with nRF51 revision 3 ICs. Revision 3 chips are available on the latest development kits from Nordic Semiconductor, the nRF51-DK.
 - The concurrent Multiprotocol Timeslot API is available but has not been functionally tested in this release.

Known issues

- The scanner can skip scan intervals if the scan window and the scan interval are of the same or similar size (DRGN-5013).
- After sending a connection parameter update, the radio events for the updated link may block scheduled events for other links or flash operations (DRGN-5151).

s130_nrf51822_0.5.0-1.alpha

The s130 is based upon Nordic Semiconductor's existing S110 and S120 SoftDevices, extended to support concurrent LL and GAP roles.

Update 1: s130_nrf51822_0.5.0-1.alpha memory resource requirements

- Flash: 112 kB
- RAM: 10 kB (plus 1.5 kB call stack) when enabled, 8 bytes when disabled

Bugfixes

(This is the first release, so no known bugs fixed)

Changes

(This is the first release, so no changes)

New functionality

- Link Layer
 - Concurrent Master, Slave, Advertiser and Scanner operation (DRGN-4353, DRGN-4358, DRGN-4360)
 - Up to 4 concurrent active links: up to 3 in the Master role, along with up to 1 in the Slave role.
- GAP
 - Concurrent Central, Peripheral, Broadcaster and Observer operation (DRGN-4354).
 - Up to 4 simultaneous active connections: up to 3 in the Central role, along with up to 1 in the Peripheral role.

Limitations

- Link Layer
 - Concurrent Slave and Advertiser roles not available in this release.
- GAP

- Concurrent Peripheral and Broadcaster roles not available in this release.

Known Issues

- SoftDevice
 - Limited test coverage
 - Flash access during connection establishment can negatively affect the connection setup procedure.
- Link Layer
 - The peripheral role has priority over Central when it comes to keeping the links alive.