

IN no.: **IN-151 rev 1.0**

Date: **2021-12-16**

Device affected: **nRF52811-QFAA, nRF52811-QCAA and nRF52811-CAAA**

Device version / Build Code: **Ax0**

Data sheet references:
N/A

Agreement reference:
N/A

Customers reference:
N/A

Description of change:

The nRF52811 revision 2 (build codes Bx0) introduces behavioral changes, as well as new/modified registers to the access port protection. All new registers and changes in functionality for revision 2 are documented in the nRF52811 product specification rev 1.1 and the errata document.

Customers who want to take advantage of the changes introduced in revision 2 will need to place orders via separate ordering codes (nRF52811-QFAA-B, nRF52811-QCAA-B and nRF52811-CAAA-B). Production of revision 1 (build code Ax0) is maintained and is ordered using the existing ordering codes (nRF52811-QFAA, nRF52811-QCAA and nRF52811-CAAA).

Impact: Does the change affect product:

- | | | |
|---------------------------|--|---|
| 1. Form | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes – describe: |
| 2. Fit | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes – describe: |
| 3. Function | <input type="checkbox"/> No | <input checked="" type="checkbox"/> Yes – describe: See detailed description below. |
| 4. Quality or Reliability | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes – describe: |

Reason for change:

Informational Notice 133 (IN-133) identifies a fault injection technique that causes failure of the access port protection mechanisms on the nRF52 Series. The introduced changes to revision 2 seek to mitigate this known fault injection technique.

Consequences of change:

In factory state, the nRF52811 revision 2 comes with the access port protection enabled. An ERASEALL command via the control access port (CTRL-AP) is required to enable access.

In order to lock the device debug port, execute the following steps to enable access port protection:

1. Start with a CTRL-AP ERASEALL operation.
2. Program code compiled with MDK 8.43.0 or later, with ENABLE_APPROTECT defined.
3. Write Enabled (0x00) to UICR.APPROTECT
4. Perform a hard reset to protect the device. The programmed code from step 2 will write APPROTECT.FORCEPROTECT to Force (0x00).

To unlock the device debug port (for debugging etc.), execute the following steps to disable access port protection:

1. Start with a CTRL-AP ERASEALL operation.
2. Program code compiled with an MDK 8.43.0 or later, without ENABLE_APPROTECT defined.
3. Write HwDisabled (0x5A) to UICR.APPROTECT
4. Perform any reset to run the code. The programmed code from step 2 will open access port by writing to APPROTECT.DISABLE during start-up.

If an nRF52811 revision 2 is programmed with software compiled with a version of the MDK prior to release 8.43.0, the debug port will be locked. However, the APPROTECT.FORCEPROTECT will not be written to Force (0x0), and the errata workarounds implemented in the MDK may not be applied to revision 3. Thus, it is required to upgrade to the latest MDK (version 8.43.0 or later) to ensure correct behavior.

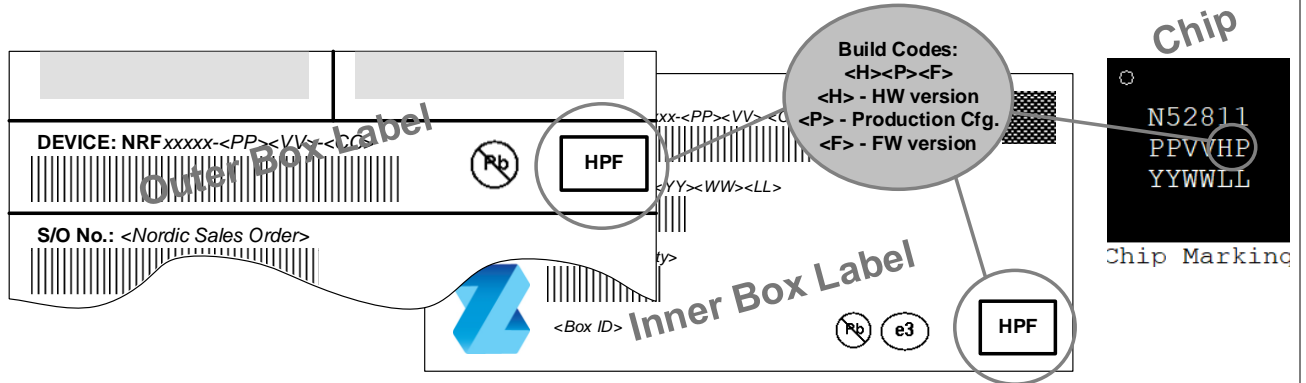
Tele regulatory and Bluetooth certification:

The described changes have no impact on the RF performance, which remains identical to revision 1.

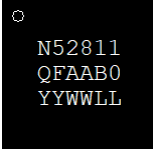
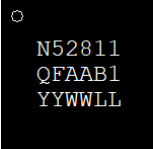
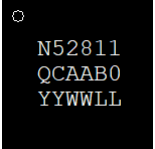
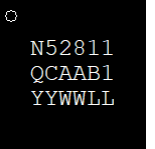
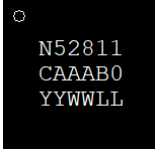
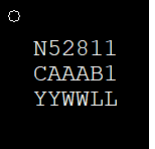
Verification of change:

The new build code was qualified according to Nordic Semiconductor's standard product approval and quality procedures.

Marking/Shipping labels:



Chips:

 Build code B00	 Build code B10	 Build code B00	 Build code B10	 Build code B00	 Build code B10
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Labels:

B00	B10	B00	B10	B00	B10
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Change active from (date):

Orders can be placed now.

Change active from (lot no/date code/build code):

Build code – Bx0

Samples Available (date/build code):

2021-11-30 / Bx0

Attachments: No Yes – describe:

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Authorization for Nordic Semiconductor

Product Manager: Pär Håkansson Date: 2021-12-16

Sign: 

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