

IN no.: **IN-142 rev 1.0**

 Date: **2021-09-08**

Device affected:

**nRF52832-QFAA, nRF52832-QFAB and nRF52832-CIAA**

 Device version / Build Code: **Ex0**

Data sheet references:

**N/A**

Agreement reference:

**N/A**

Customers reference:

**N/A**

## Description of change:

The nRF52832 revision 3 (build codes Gx0) introduces behavioral changes, as well as new/modified registers to the access port protection. All new registers and changes in functionality for revision 3 are documented in the nRF52832 product specification rev 1.7 and the errata document.

Customers who want to take advantage of the changes introduced in revision 3 will need to place orders via separate ordering codes (nRF52832-QFAA-G, nRF52832-QFAB-G and nRF52832-CIAA-G). Production of revision 2 (build code Ex0) is maintained and is ordered using the existing ordering codes (nRF52832-QFAA, nRF52832-QFAB and nRF52832-CIAA).

### 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 3 seek to mitigate this known fault injection technique.

## Consequences of change:

In factory state, the nRF52832 revision 3 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 8.40.1 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 8.40.1 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 nRF52832 revision 3 is programmed with software compiled with a version of the MDK prior to release 8.36.0, the debug port will be locked. However, the APPROTECT.FORCEPROTECT will not be written to Force (0x0), and full protection as intended will not be achieved. Thus, it is strongly recommended to upgrade to the latest MDK (version 8.40.1 or later).

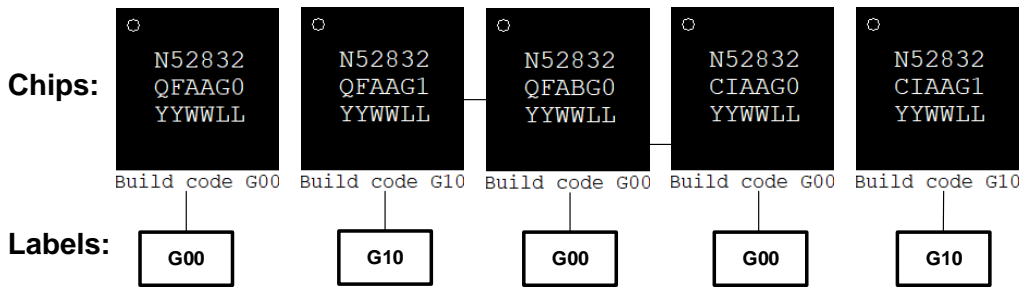
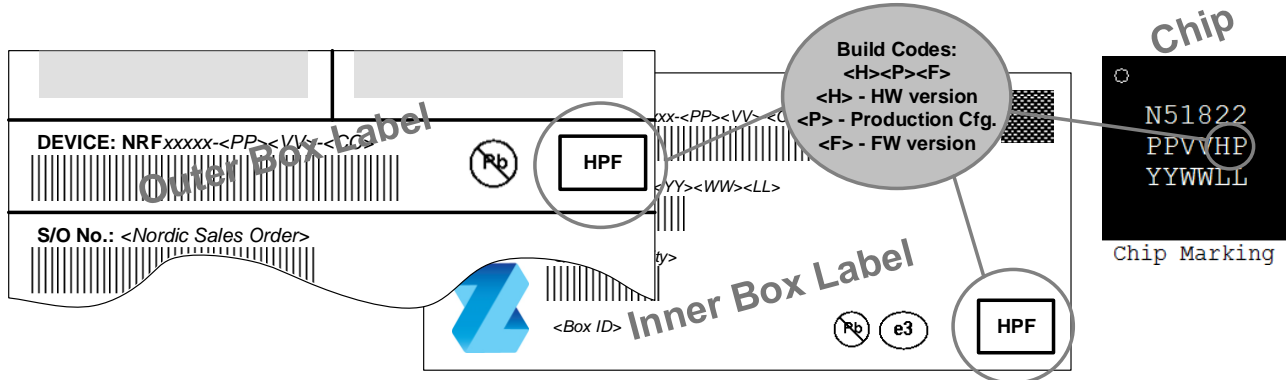
### Tele regulatory and Bluetooth certification:

The described changes have no impact on the RF performance, which remains identical to revision 2.

## Verification of change:

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

**Marking/Shipping labels:**



**Change active from (date):**

Orders can be placed now.

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

Build code – Gx0

**Samples Available (date/build code):**

2021-09-08 / Gx0

**Attachments:**

No

Yes – describe:

**Technical contact at Nordic Semiconductor:**

[www.nordicsemi.com](http://www.nordicsemi.com), "Support"

**Commercial contact at Nordic Semiconductor:**

[www.nordicsemi.com](http://www.nordicsemi.com), "Contact Us"

**Authorization for Nordic Semiconductor**

Product Manager: Pär Håkansson

Date: 2021-09-08

Sign:



Quality Director: Ebbe Rømcke

Date: 2021-09-08

Sign:



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