Product Change Notification

PCN #: 4B-2019 *DATE:23rd April 2019*

1 Products Affected

Laird Part Number	Description
451-00001	Module, BL654 Series, Integrated Antenna
451-00002	Module, BL654 Series, External Antenna
451-00003	Kit, BL654 Series, USB Adapter
455-00001	Development Kit, BL654 Series, Integrated Antenna
455-00002	Development Kit, BL654 Series, External Antenna

2 Description of Changes

The BL654 Series of modules and associated development kits utilise the Nordic Semiconductor nRF52840-QIAA silicon. Starting from hardware revision code R2.0 listed on each Laird module's product label, Laird will be utilising the new D00 revision of the Nordic nRF52840-QIAA silicon inside the module.

There is no Form, Fit, Function, Quality or Reliability change in this PCN.

3 Reason for Change

The BL654 Series of modules and associated development kits utilise the Nordic Semiconductor nRF52840-QIAA silicon. Nordic have recently announced via their 'Information Notice' programme (Notice no: IN-111, rev 1.0) that they are updating their Device version / Build Code from C00 to D00.

The referenced Nordic Information Notice states the following:

Description of change:

New silicon fixing the following Errata:

- Errata-192 LFRC frequency offset after calibration
- Errata-197 DCDC of REG0 not functional
- Errata-201 EVENTS_HFCLKSTARTED might be generated twice
- Errata-202 Device does not start up in high voltage mode

In addition, there are improvements related to yield and manufacturing throughput.
This is a running change aiming to replace previous build code (*C00*).

Impact: Does the change affect **product**:

1.	Form	☒ No	☐ Yes – describe:
2.	Fit	☒ No	☐ Yes – describe:
3.	Function	☐ No	☒ Yes – describe: See "Description of change" and referenced Errata.
4.	Quality or Reliability	☒ No	☐ Yes – describe:
Classification of change		☐ Minor	☒ Major

Reason for change:

Fixing Errata and yield and manufacturing throughput optimization

Consequences of change:

Hardware

The new device version is drop-in compatible with the current version and does not require changes to PCB design, schematics or layout.

Software:

The new device version is software compatible with the current version if using SDK15.0/15.1 and SoftDevice S140v6.0.0/6.1.0 but note that these versions have implemented workarounds for Errata-192 and Errata-201 which will be executed without impact on function on this device version.

Teleregulatory and Bluetooth certification

- *The new revision has no impact on RF performance*
- *The new revision inherits all Bluetooth QDIDs and requires no re-qualification for existing products*

4 Anticipated Impact of the Change

- None

5 Method of Identifying the Changed Product

The change can be identified by reviewing the *Hardware Revision Code* number that is present on the individual module, reel label and carton label. The images below identify where this 'Hardware Revision Code is located on each of those labels.

A Hardware Revision Code that shows as R2.0 indicates that the nRF52840-QIAA-D00 silicon is utilised.

A Hardware Revision Code that shows as R1.0 indicates that the nRF52840-QIAA-C00 silicon was utilised.

5.1 Module Label

Figure 1: Module label

5.2 Reel Label

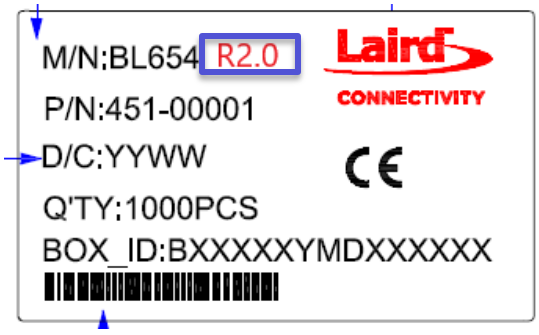

Figure 2: Reel label

5.3 Carton Label

Figure 3: Master carton package label

6 Factory Effectivity Date

This change has been affected as a running change into Laird manufacturing of all the BL654 Series products and production utilizing the new silicon revision can be clearly identified from the hardware control code “R2.0” on products labels. It is envisaged it will take some months for these products to proliferate out into the global distribution channels.

7 Contact Information:

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Product Change Notices (PCNs) will be distributed at the discretion of Laird. Occasionally, Laird may adjust product revision levels for internal tracking purposes only, and customers may not receive formal notifications associated with those revision changes.

