

# nRF21540

## Revision 2

### Errata

v1.2

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# 1 nRF21540 Revision 2 Errata

This Errata document contains anomalies and configurations for the nRF21540 chip, revision Revision 2 (QDAA-G00).

The document indicates which anomalies are fixed, inherited, or new compared to revision [Engineering C](#).

## 2 Revision history

See the following list for an overview of changes from previous versions of this document.

Version	Date	Change
nRF21540 Revision 2 v1.2	15.06.2022	<ul style="list-style-type: none"><li>• Added: No. 14. "Increased supply current in Power-down state"</li><li>• Edited: No. 10. "Increased current consumption in Power-down state with MODE pin high"</li></ul>
nRF21540 Revision 2 v1.1	09.06.2022	<ul style="list-style-type: none"><li>• Added: No. 12. "Spike on MISO pin "</li><li>• Added: No. 13. "Increased supply current in Power-down state with digital input pins at high level"</li></ul>
nRF21540 Revision 2 v1.0	21.01.2022	<ul style="list-style-type: none"><li>• Added: No. 7. "Current leakage via MODE pin affecting RF performance"</li><li>• Added: No. 10. "Increased current consumption in Power-down state"</li></ul>

# 3 New and inherited anomalies

The following anomalies are present in revision Revision 2 of the nRF21540 chip.

ID	Module	Description	New in Revision 2	Inherited from Engineering C
7	RF	Current leakage via MODE pin affecting RF performance		X
10	System	Increased current consumption in Power-down state with MODE pin high		X
12	SPI	Spike on MISO pin	X	
13	System	Increased supply current in Power-down state with digital input pins at high level	X	
14	System	Increased supply current in Power-down state	X	

Table 1: New and inherited anomalies

## 3.1 [7] RF: Current leakage via MODE pin affecting RF performance

This anomaly applies to IC Rev. Revision 2, build codes QDAA-G00.

It was inherited from the previous IC revision [Engineering C](#).

### Symptoms

Current leakage via MODE pin. Both TX and RX gain, as well as LNA noise figure (NF), are affected.

### Conditions

Using pin control with MODE pin pulled to VDD.

### Consequences

Increased current leakage into MODE pin when pulled to VDD. TX and RX gain will be affected, as well as the device current consumption. Higher noise figure will impact the RX sensitivity.

### Workaround

Use one of the following:

1. 33 kΩ resistor in series on MODE pin.
2. SPI control and keep MODE pin pulled to GND.

## 3.2 [10] System: Increased current consumption in Power-down state with MODE pin high

This anomaly applies to IC Rev. Revision 2, build codes QDAA-G00.

It was inherited from the previous IC revision [Engineering C](#).

### Symptoms

Increased current consumption in Power-down state.

### Conditions

MODE pin is set high while PDN pin is set low.

### Consequences

Current flows to MODE pin.

### Workaround

MODE signal should be pulled low in Power-down state.

## 3.3 [12] SPI: Spike on MISO pin

This anomaly applies to IC Rev. Revision 2, build codes QDAA-G00.

### Symptoms

The MISO pin may have spikes at the rising or falling edge of the PDN pin.

### Conditions

The PDN pin toggles.

### Consequences

The MISO pin may have a positive or negative spike that interferes with communication with peripheral devices sharing the MISO line on the SPI bus.

### Workaround

Do not share the MISO line with other peripheral devices.

## 3.4 [13] System: Increased supply current in Power-down state with digital input pins at high level

This anomaly applies to IC Rev. Revision 2, build codes QDAA-G00.

## Symptoms

Supply current is increased in Power-down state.

## Conditions

The device is in Power-down state, and the CSN, RX\_EN, TX\_EN, MODE, SCK, MOSI, or ANT\_SEL pin is set high.

## Consequences

The supply current may increase up to 500  $\mu$ A per pin set high.

## Workaround

Pull the CSN, RX\_EN, TX\_EN, MODE, SCK, MOSI, and ANT\_SEL pins low in Power-down state. Pull the CSN pin high together with the PDN pin when changing to Program state.

## 3.5 [14] System: Increased supply current in Power-down state

This anomaly applies to IC Rev. Revision 2, build codes QDAA-G00.

## Symptoms

Supply current is increased in Power-down state.

## Conditions

Device is in Power-down state.

## Consequences

- For trace codes earlier than 2223xx (year 22, week 23), the supply current may be up to several hundred  $\mu$ A in typical conditions. The mean value is expected to be less than 1  $\mu$ A.
- For trace codes earlier than 2223xx (year 22, week 23) with a green sticker on the reel, vacuum bag, and inner box label, the supply current may be up to 1  $\mu$ A in typical conditions. The mean value is expected to be less than 100 nA.
- For trace codes later than 2223xx (year 22, week 23), the supply current may be up to 1  $\mu$ A in typical conditions. The mean value is expected to be less than 100 nA.

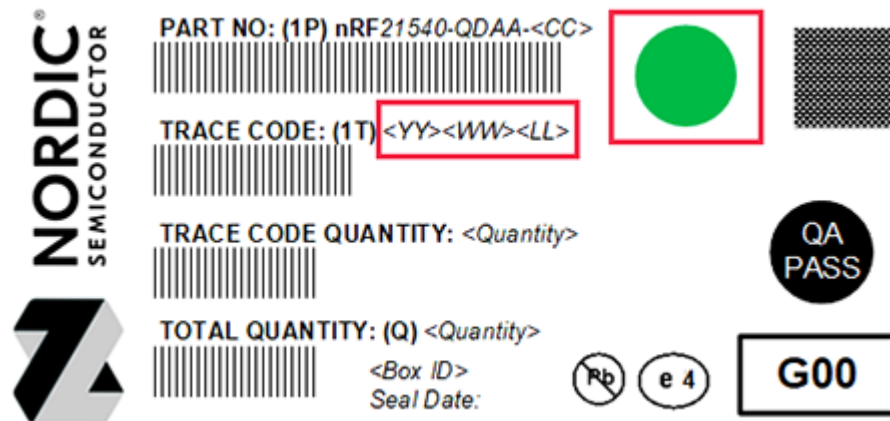


Figure 1: Trace code and green sticker on nRF21540 label

## Workaround

Use samples with trace code 2223xx (year 22, week 23) or later or retested samples marked with a green round sticker on the reel, vacuum bag, and inner box label to keep maximum supply current at less than 1  $\mu$ A in typical conditions.