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NORDIC
SEMICONDUCTOR

Product Anomaly Notification (PAN)

Device affected (product name):	Device version(s) affected:
nRF8001	BX, CX, C and D
Date (YYYY-MM-DD):	**PAN no.:**
2012-03-23	PAN_025
Nordic Semiconductor reference:	**Document version:**
Thomas Embla Bonnerud	1.4

Summary

Anomalies:

1. Current consumption I_{idle} is 500 nA higher than listed in the nRF8001 Preliminary Product Specification (nRF8001 PPS 0.9.3).
2. Current consumption I_{sleep} is 700 nA higher than listed in the nRF8001 PPS 0.9.3.
3. TX and RX ($I_{TX\,DC}/I_{RX\,DC}$) peak current consumption with DC/DC converter enabled is 20% higher than listed in nRF8001 PPS 0.9.3.
4. The nRF8001 response to Read by Type or Read by Group Type requests contains invalid data when acting as a GATT server.
5. ReadDynamicData (0x07) and WriteDynamicData (0x08) cannot be used.

Marking / tracing:

n	R	F		B	X
8	0	0	1		
1	0	-	-	-	-

n	R	F		C	X
8	0	0	1		
1	0	-	-	-	-
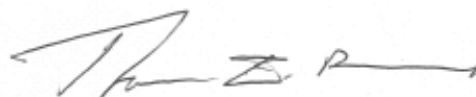
n	R	F		C	
8	0	0	1		
1	0	-	-	-	-

n	R	F		D	
8	0	0	1		
1	0	-	-	-	-

Authorization for Nordic Semiconductor

Product Manager   Date: 23/03/2012   Sign:

Thomas Embla Bonnerud

Detailed Description

1. Anomaly #1

Symptoms:

Current consumption (I_{idle}) is 500 nA higher than listed in the nRF8001 PPS 0.9.3.

Conditions:

Between the connection/advertising events (NOC)

Consequences:

Current consumption (I_{Idle}) increases by 500 nA to 2.5 μA

Workaround:

No workarounds for build code BX, CX, and C. This anomaly is fixed in build code D.

2. Anomaly #2

Symptoms:

Current consumption (I_{sleep}) is 700nA higher than listed in the nRF8001 PPS 0.9.3.

Conditions:

Device in Sleep mode

Consequences:

Current consumption (I_{sleep}) increases by 700 nA, to 1.2 µA.

Workaround:

No workarounds for build code BX, CX, and C. This anomaly is fixed in build code D.

Template ID: 1159140_112, rev. W, date: 2006-01-09
Template approved by ERO

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3. Anomaly #3

Symptoms:

Limited current consumption reduction with the DC/DC converter enabled

Conditions:

When nRF8001 DC/DC converter is enabled and radio is actively transmitting or receiving (see time segments 2, 3, and 4, in Figure 14 c and Figure 16 in the nRF8001 PPS 0.9.3).

Consequences:

There is no impact on device function or RF performance. 20% higher current consumption when the radio is transmitting or receiving ($I_{TX\,DC}/I_{RX\,DC}$), results in same peak currents as without DC/DC converter enabled.

Workaround:

No workarounds for build code BX, CX, and C. This anomaly is fixed in build code D.

4. Anomaly #4

Symptoms:

The nRF8001 response to Read by Type or Read by Group Type requests contains invalid data when acting as a GATT server.

Conditions:

This anomaly affects the ATT server implementation of nRF8001 whenever one of the following database layouts is stored in the local ATT database:

1) 2 (or more) Service definitions using 16-bit UUIDs followed by a Service definition using a 128-bit UUID. This only affects build codes CX and C. It does not affect build code BX.
2) 2 (or more) Characteristic declarations using 16-bit UUIDs followed by a Characteristic declaration using a 128-bit UUID. This only affects build codes CX and C. It does not affect build code BX.
3) 6 contiguous Characteristic value declarations using the same 16 or 128-bit UUID of which the value is 1 byte in length, followed by a Characteristic value declaration using the same UUID of which the value is greater than 1 byte in length.
   Or, 2 contiguous Characteristic value declarations using the same 16 or 128-bit UUID of which the value is 5 bytes in length, followed by a Characteristic value declaration using the same UUID of which the value is greater than 5 bytes in length. This affects build codes BX, CX, and C.

Consequences:

Read by Type and Read by Group Type response from nRF8001 contains invalid data.

Workaround:

The workaround comprises the three following requirements:
1. All 16-bit Service declarations must be placed first within the database, followed by all 128-bit Service declarations.
2. All 128-bit Characteristic declarations must be placed first within a Service declaration.
3. The number of 16-bit Service declarations divided by three must not be equal to an integer number.

This anomaly is fixed in build code D.

5. Anomaly #5

Symptoms:

ReadDynamicData (0x07) and WriteDynamicData (0x08) cannot be used.

Conditions:

This anomaly only affects build code D.

Consequences:

Dynamic data cannot be stored in an application controller and written back into nRF8001.

Workaround:

None.

This anomaly is fixed in build code D with the date code 1209 or later.