

CC2340R2 SimpleLink™ Wireless MCU Device Revision B



ABSTRACT

This document describes the known exceptions to functional specifications (advisories) to the CC2340R2 SimpleLink™ device.

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1 Advisories Matrix

Table 1-1 lists all advisories, modules affected, and the applicable silicon revisions.

Table 1-1. Advisories Matrix

MODULE	DESCRIPTION	SILICON REVISIONS AFFECTED
		A
SPI	Advisory SPI_04 — Hang scenario with SPI waiting for CPU intervention forever	Yes
ADC	Advisory ADC_08 — ADC BUSY bit not cleared in repeat single, sequence and repeat sequence conversion modes.	Yes
BATMON	Advisory BATMON_01 — Incorrect temperature measurement	Yes
CKM	Advisory CLK_01 — Bluetooth Low Energy link may not be maintained when using LFOSC only	Yes

2 Nomenclature, Package Symbolization, and Revision Identification

2.1 Device and Development Support-Tool Nomenclature

To designate the stages in the product development cycle, Texas Instruments™ assigns prefixes to the part numbers of all devices and support tools. Each device has one of three prefixes: X, P, or null (for example, XCC2340R2). Texas Instruments recommends two of three possible prefix designators for its support tools: TMDX and TMDS. These prefixes represent evolutionary stages of product development from engineering prototypes (X/TMDX) through fully qualified production devices/tools (null/TMDS).

Device development evolutionary flow:

- X** Experimental device that is not necessarily representative of the final device's electrical specifications and may not use production assembly flow.
- P** Prototype device that is not necessarily the final silicon die and may not necessarily meet final electrical specifications.
- null** Production version of the silicon die that is fully qualified.

Support tool development evolutionary flow:

- TMDX** Development-support product that has not yet completed Texas Instruments internal qualification testing.
- TMDS** Fully-qualified development-support product.

X and P devices and TMDX development-support tools are shipped against the following disclaimer:

"Developmental product is intended for internal evaluation purposes."

Production devices and TMDS development-support tools have been characterized fully, and the quality and reliability of the device have been demonstrated fully. TI's standard warranty applies.

Predictions show that prototype devices (X or P) have a greater failure rate than the standard production devices. Texas Instruments recommends that these devices not be used in any production system because their expected end-use failure rate still is undefined. Only qualified production devices are to be used.

2.2 Devices Supported

This document supports the following device:

- [CC2340R2](#)

2.3 Package Symbolization and Revision Identification

Figure 2-1 and Table 2-1 describe package symbolization and the device revision code.

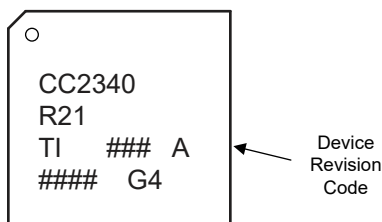


Figure 2-1. Package Symbolization

Table 2-1. Revision Identification

Device Revision Code	Silicon Revision
A	PG1.0

3 Advisories

SPI_04

Hang scenario with SPI waiting for CPU intervention forever.

Revisions Affected A

Details

When the CPU is reading or writing the SPI FIFO using FIFO level triggers to generate interrupts, the system can hang. After the first interrupt is serviced, the FIFO level can permanently be below or above the configured threshold and not generate a subsequent CPU interrupt. This can lead to a hang scenario with SPI waiting for CPU intervention forever.

Workaround

1. Use polling of FIFO status within SPI and don't rely on FIFO level configured interrupts, or
2. Use only empty/overflow interrupts and don't use FIFO level configured interrupts, or
3. Use FIFO level configured interrupts along with empty (for TXFIFO) and overflow (for RXFIFO) as a failsafe to avoid hang scenarios.

ADC_08

ADC BUSY bit not cleared in repeat single, sequence and repeat sequence conversion modes.

Revisions Affected A

Description

When ADC is configured in repeat single, sequence or repeat sequence conversion modes with trigger policy as trigger next in the MEMCTLx register, software attempting to stop the conversion sequence by clearing ENC bit does not clear BUSY bit in the STATUS register. In the case of sequence conversion mode with trigger next policy, the BUSY bit is cleared at the end of the conversion sequence.

Workaround

To stop the conversions and to clear the BUSY bit in the above mentioned ADC operating scenario, the following software sequence can be followed.

1. Write CTL0.ENC = 0
2. Change CTL1.TRIGSRC to SOFTWARE
3. Write CTL1.SC=1

BATMON_01 ***Incorrect temperature measurement.***

Revisions Affected A

Description BATMON can report incorrect temperatures when hysteresis is enabled. To prevent potential incorrect temperature reports, the user must always disable BATMON hysteresis.

Workaround Hysteresis is controlled by the PMUD.CLT[2] HYST_EN bit.

Hysteresis is enabled by default (reset value = 1) and, therefore, must actively be disabled during boot.

Hysteresis can be disabled by clearing the PMUD.CLT[2] HYST_EN bit using the following command:

```
HWREG( PMUD_BASE + PMUD_O_CTL ) = ( PMUD_CTL_CALC_EN |
PMUD_CTL_MEAS_EN )
```

This workaround is incorporated into SIMPLELINK-LOWPOWER-F3-SDK versions >= 7.40.xx

CLK_01 ***Bluetooth Low Energy link can not be maintained when using LFOSC only***

Revisions Affected A

Description A small percentage of devices do not maintain a Bluetooth Low Energy link if LFOSC is used as a sleep clock due to random timing error above 500 PPM.

Workaround A software workaround are available in the SimpleLink F3 SDK >= 8.10.xx to allow devices to operate in the broadcaster, observer and peripheral roles when using LFOSC only. When the software workaround is used, the device can see short periods of operation with reduced throughput and increased power consumption when the timing error occurs. This software workaround does not support the central role. To completely avoid the consequences of increased power consumption and connection throughput or support the Central role, TI recommends using an external 32.768kHz crystal.

4 Revision History

NOTE: Page numbers for previous revisions may differ from page numbers in the current version.

DATE	REVISION	NOTES
December 2023	*	Initial Release

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