STEVAL-SMARTAG2 board errata

Applicability

This document applies to the STEVAL$SMARTAG2A board and corresponding firmware version FP-SNS-SMARTAG2 1.0.1

Summary of device errata

The following table gives a quick reference to the STEVAL-SMARTAG2 board limitations and their status:

- A = limitation present, workaround available
- N = limitation present, no workaround available
- P = limitation present, partial workaround available
- – = limitation absent

The applicability of a workaround may depend on specific conditions of target application. The adoption of a workaround may cause restrictions to the target application. The workaround for a limitation is deemed partial if it only reduces the rate of occurrence and/or consequences of the limitation, or if it is fully effective for only a subset of instances on the device or in only a subset of operating modes, of the function concerned.

Table 1. Summary of board limitations

Function	Section	Limitation	Status
Firmware	2	Wrong CC file information	A
Hardware	3.1	Low NFC performance	A
	3.2	Energy harvesting	A

1 Firmware

1.1 Firmware weakness

Wrong CC file information.

1.1.1 Description

NFC EEPROM contains 4 Kb CC file instead of 64 Kb.

A non-valid NDEF does not make it possible to communicate with iOS mobile phones.

1.1.2 Workaround

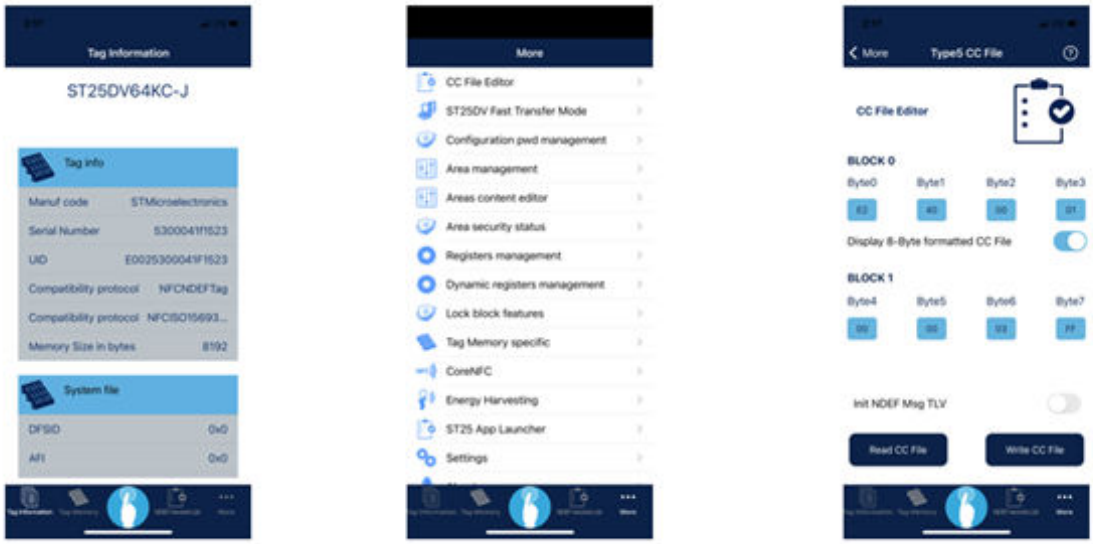
As the CC file information is set by the first firmware during industrialization, if CC File starts with E1, it is recommended to reprogram the eval board with the new firmware version FP-SNS-SMARTAG 1.0.2 available on st.com to fix the CC file issue.

The “E2 40 00 01 00 00 03 FF” array will be overwritten to the first 8 bytes in the memory.

You can also write the CC file using the NFC Tap app for iOS or ST25Tap for Android. Please follow the screenshots in the following figure for reference.

After you tap the tag, click on [**More**] at the bottom right to access the [**Menu**]. If E1 is written, make sure that you select 8-byte CC file format.

Figure 1. ST25Tap screenshots



2 Hardware

2.1 NFC scan distance

Improving NFC performance.

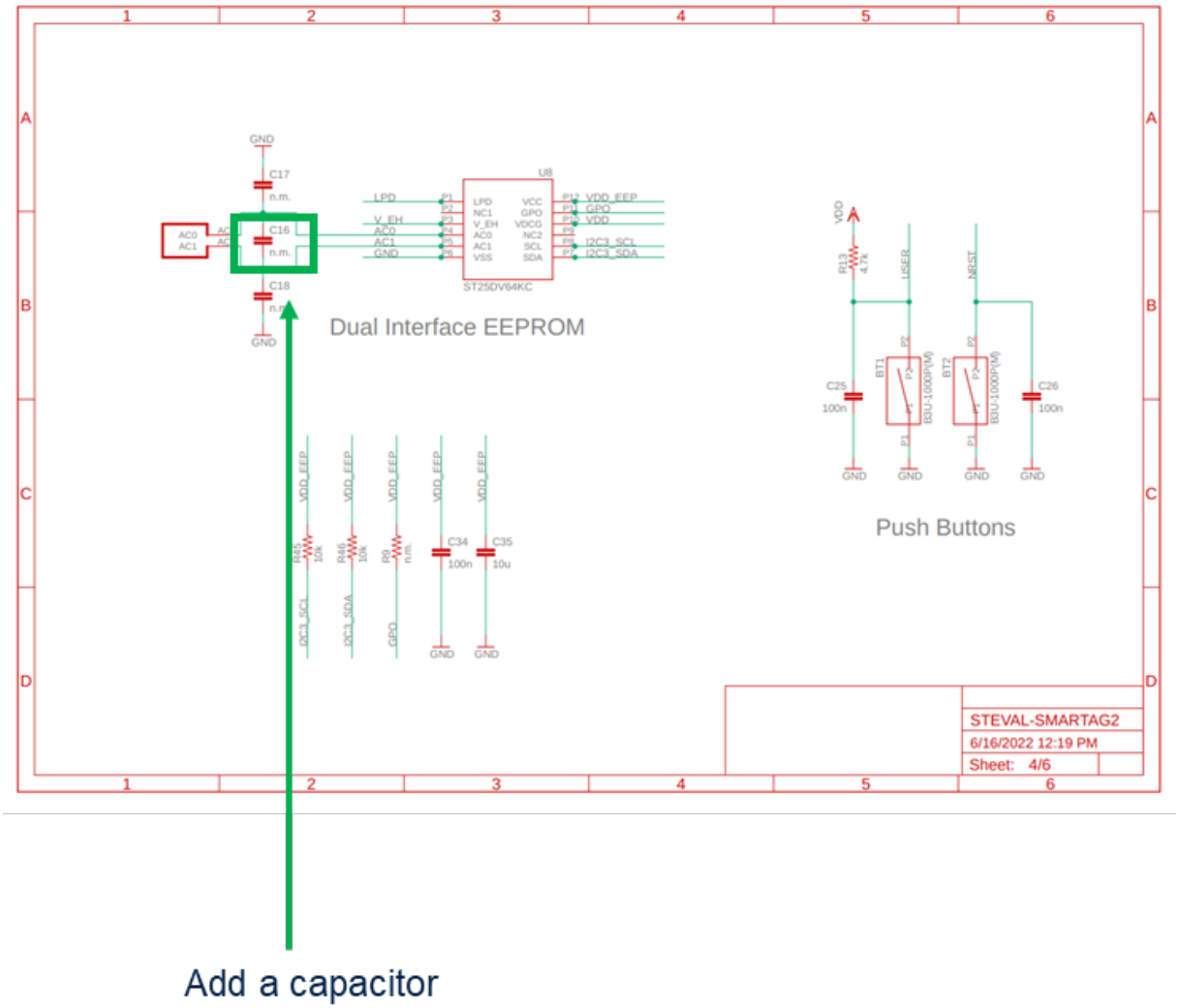
2.1.1 Description

The evaluation board STEVAL-SMARTAG2 can only be read if it is in close contact with a mobile phone.

2.1.2 Workaround

A hardware modification is required to improve NFC performance.
A 6.8 pF capacitor (i.e., C16 below) should be added on the board as shown on the schematic.
The new layout of the board will be named STEVAL$SMARTAG2B.

Figure 2. STEVAL-SMARTAG2 hardware modification for NFC performance



2.2 Energy harvesting

The eval board may be powered by using the RF field from the reader (transmitter) only, with no external battery needed.

2.2.1 Description

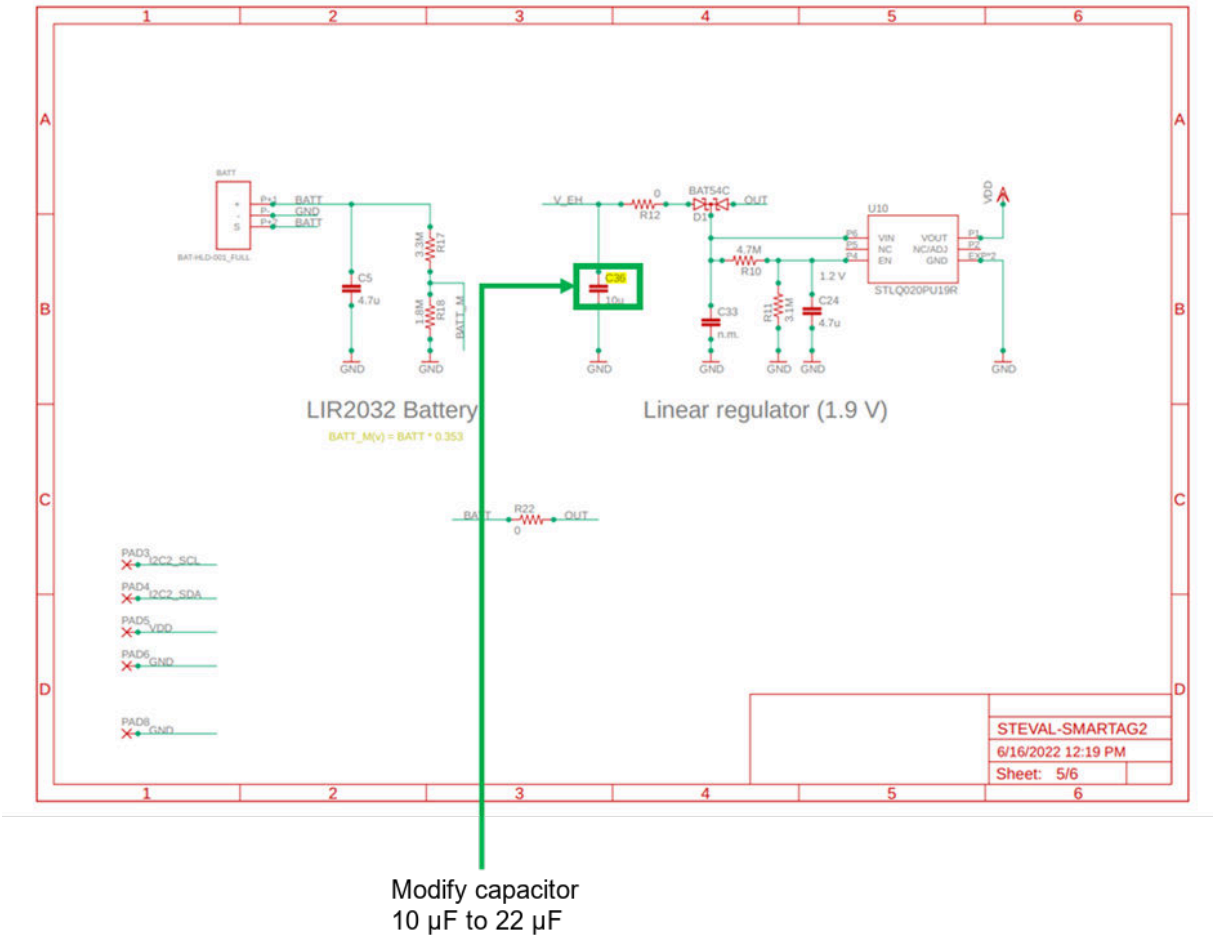
The 10 µF capacitor (i.e., C36 in the next figure) that is currently mounted on the board for harvesting mode is generally not enough to work with NFC mobile phones.

2.2.2 Workaround

A hardware modification is required to improve the energy harvesting feature on the STEVAL-SMARTAG2 board. Replace the 10 µF capacitor with a 22 µF capacitor on C36 (see the following schematic).

The new layout of the board will be named STEVAL$SMARTAG2B.

Figure 3. STEVAL-SMARTAG2 hardware modification for energy harvesting



Revision history

Table 2. **Document revision history**

Date	Version	Changes
20-Apr-2023	1	Initial release.

Contents

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