

Colibri T30

Errata Document



Document Revision History

Date	Doc. Rev.	Notes
2022-06-07	Rev. 1.0	Initial Release

Overview

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Errata #1: HAR-9102 – STMPE811 ADC can get wrongly strapped if voltage is applied to ADC_AD1 input

Affected Version: **All versions of Colibri T30**
Fixed in: **Currently not planned**

Customer Impact

If voltage is applied to ADC_AD1 input, the ADC inputs and the touch interface may not work as the STMPE811 is not accessible on the I2C bus.

Description

The STMPE811 ADC and touch controller IC uses the IN0_GPIO1 pin for strapping between I2C and SPI mode. If the pin is high during the power-up of the controller, the chip gets misconfigured as an SPI device. In this case, the chip cannot be accessed over the I2C mode and is unavailable.

The IN0_GPIO1 is used as ADC_AD1 input of the module (edge connector pin 6). A voltage applied to the analog input ADC_AD1 during the module's power-up can cause the ADC and touch controller to be strapped wrongly and therefore not accessible.

The Colibri T30 features a circuit that pulls down the ADC_AD1 input during the reset state to prevent false strappings. However, this circuit may not work correctly if there is extensive backfeeding to the Colibri T30 module. The best prevention is not applying any voltage to the ADC_AD1 input while the module is not powered.

Workaround

Ensure that there is no voltage applied to the ADC_AD1 input until the module booted. Use any of the other ADC inputs instead.

Errata #2: HAR-1380 – RTC current too high

Affected Version: **Colibri T30 1GB V1.1E (and older)**
Fixed in: **Colibri T30 1GB V1.1F (and newer)**
Colibri T30 1GB IT (all versions)

Customer Impact

The module RTC battery consumption is higher than usual and can deplete a coin cell battery fast.

Description

The current consumption on the RTC battery rail (VCC_BATT) can reach up to 240 μA on earlier modules if the primary voltage rail (3V3) is not applied. The issue affects the Colibri T30 1GB V1.1E and older, but does not affect the Colibri T30 1GB IT. Even though the current consumption is reduced to 56 μA on newer versions of the module, it is recommended to use an external ultra-low power RTC device if the system time needs to be retained without the presence of the primary voltage rail.

Workaround

Use an external ultra-low power RTC device (see the Colibri Evaluation Board for reference).

Errata #3: HAR-8754 – Continuous Power Cycles if Module is Tried to Boot at 85°C

Affected Version: **All versions of Colibri T30**
Fixed in: **Currently not planned**

Customer Impact

If the module gets powered up at high ambient temperatures (around 85°C and above), the SoM can enter a continuous power cycle loop until the ambient temperature drops. The issue does not appear if the module is booted at lower temperatures.

Description

The module features a LM95245 temperature sensor that monitors the die temperature of the SoC and the local temperature of the temperature sensor itself (the latter used for representing the PCB temperature). By default, the over-temperature limit of the local temperature sensor is set to 85°C. This temperature threshold is set to a higher value during the boot process (to actually allow for booting at an ambient temperature of 85°C, assuming an even higher PCB temperature).

However, if the ambient temperature is already 85°C during the power-up of the module, the over-temperature output of the LM95245 (connected to the power disable input of the PMIC) may get triggered before the threshold gets updated. In this case, the SoM power supply is shut down immediately. This also removes power from the temperature sensor, which allows the PMIC to reenables the power rails. This cycle repeats until the local temperature falls below the default over-temperature threshold of 85°C.

Workaround

Make sure that the module gets powered up at an ambient temperature of 80°C or lower.

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