

LTC6811-1/LTC6811-2 ERRATA

The errata below describe conditions that cause an [LTC®6811-1/LTC6811-2](#) device to operate differently than expected or described in the data sheet.

ERRATA SUMMARY

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ERRATA #1: C12 BIAS CURRENT

When the LTC6811-1/LTC6811-2 is in the REFUP state, a portion (10µA) of the V⁺ supply current (550µA) will enter the C12 pin.

Conditions:

The following conditions, when present simultaneously, may expose this problem:

1. The LTC6811-1/LTC6811-2 core is in the REFUP state (see LTC6811-1/LTC6811-2 data sheet Figure 1).
2. The V⁺ pin is less than 1V more than the highest cell input.

Impact:

A portion (10µA) of the V⁺ supply current (550µA) will enter the C12 pin (and potentially any other C pin within 1V of V⁺). This appears as a violation of the input leakage when inputs are not being measured specification. The current into the top cell input returns through ground so there is no imbalance of cell load currents. The STANDBY and MEASURE states are not affected; measurements are not affected in most cases because any IR drop across the C12 filter resistor becomes negligible before the measurement of Cell 12 begins. Using large time constant filters can result in a Cell 12 measurement error.

Root Cause:

There is a leakage path into each C pin that forms when V⁺ is less than 1V more than the C pin.

Workarounds:

If using large time constant filters, power V⁺ to at least 1V more than the highest cell input.

ERRATA #2: REFERENCE WAKE-UP TIME

When the LTC6811-1/LTC6811-2 is in the STANDBY state, the reference wake-up time (t_{REFUP} in Electrical Characteristics table) may be shorter than 2.7ms.

Conditions:

The following condition:

1. The LTC6811-1/LTC6811-2 core is in the STANDBY state (see LTC6811-1/LTC6811-2 data sheet Figure 1).

Impact:

ADC conversions are delayed 2.7ms to 4.4ms when they are initiated during the STANDBY state. The delay is necessary for the voltage reference to turn on and reach its final value. The delay time is t_{REFUP} in the Electrical Characteristics table (see LTC6811-1/LTC6811-2 data sheet Figures 3–9). If a valid command is issued before this delay is complete, the ADC may begin measurements before the voltage reference has reached its final value. This causes errors in the ADC results.

Root Cause:

Noise on the internal supply may interrupt the timing of the t_{REFUP} delay, causing the ADC measurements to begin early.

Workarounds:

The simplest workaround is to always operate the LTC6811-1/LTC6811-2 with REFUP = 1. This leaves the LTC6811-1/LTC6811-2 core in the REFUP state. ADC conversions can be requested at any time.

Another workaround is to set REFUP = 1 in the configuration register at least 3ms before requesting an ADC conversion. When the ADC conversion is complete, then set REFUP = 0. This will place the LTC6811-1/LTC6811-2 core in the STANDBY state until the next time REFUP is set to 1.

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