

**LTC4013 ERRATA**

This erratum describes conditions that may cause an LTC4013 to operate differently than expected or described in the datasheet.

**ERRATA SUMMARY**

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**ERRATA #1:**

**LOW BATTERY TERMINATION RETRIES**

The LTC4013 may retry charging after it has terminated due to a low battery timeout. This can only occur following the use case detailed below. All other operating states are immune to this issue.

**CONDITIONS:**

If a cell, or series stack of cells, fails to reach the low battery threshold voltage before the low battery termination timer has expired ( $t_{EOC}/8$ ), the LTC4013 will terminate charging as described in the datasheet.

After an additional low battery timeout period ( $t_{EOC}/8$ ), however, the LTC4013 will retry charging the battery with the low battery charging current (C/5).

Following another low battery timeout period, charging will once again terminate and the cycle will repeat indefinitely.

This condition only occurs if the timer pin is active (i.e. TMR pin has a capacitor rather than being tied to GND).

**IMPACT:**

When the timer is used ( $TMR \neq GND$ ), the LTC4013 will continually attempt to charge a defective or oversized battery with on/off cycles of the low battery charge current (C/5) at 50% duty cycle with a frequency set by the low battery timer period ( $t_{EOC}/8$ ).

Analog Devices is not aware of any problems caused by this behavior.

**ROOT CAUSE:**

An internal logic error fails to hold the battery charger in the off state.

**WORKAROUND:**

If the retry behavior is undesirable, the status pins STAT0 and STAT1 of the LTC4013 may be used to detect the low battery termination state and shut down the battery charger via the ENAB pin.

**DEVICE FIX PLANNED:**

The internal logic circuit is being corrected to ensure that only a power cycle, commanded restart from ENAB or battery replacement will trigger the restart of the battery charger after a low battery fault is declared by the low battery timer circuit.