

LTC3884 ERRATA

The errata below describes conditions that cause an **LTC®3884** device to operate differently than expected or described in the data sheet.

ERRATA #1: WRITING VOUT_MAX CHANGES PWM MODE

If the user writes the VOUT_MAX command while device is active, the device may change from discontinuous mode to continuous mode, or from continuous mode to discontinuous mode.

Conditions:

The following conditions will expose this problem:

- 1) Place either channel into discontinuous conduction mode by clearing bit #0 of the MFR_PWM_MODE (0xD4).
- 2) Turn the channel on either through the RUN pin or the OPERATION command depending upon the value in the ON_OFF_CONFIG PMBus command.
- 3) Perform a PMBus read word of the VOUT_MAX (0x24) command.
- 4) Write PMBus write word of the VOUT_MAX (0x24) using the value obtained from step 3.

Impact:

The output switching mode will change from user requested conduction mode.

Root Cause:

Writing the VOUT_MAX command refreshes all of the trim values to the analog registers. One of these registers not only contains analog trim information, but also the instruction to the channel PWM regarding continuous conduction mode. This operation does not take into account the user instruction in MFR_PWM_MODE regarding continuous conduction modes.

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Workarounds:

The user should avoid writing the VOUT_MAX command while either channel of the part is active. If the user must write the VOUT_MAX command value, rewrite the value of the MFR_PWM_MODE command.

ERRATA #2: STATUS_WORD VS. STATUS_BYTE

There is a small probability that bits in the STATUS_BYTE may be asserted when the STATUS_WORD LSB reports all zero.

Conditions:

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

- 1) When polling STATUS_WORD, if a fault occurs at the right time, the read value can have a bit set in the lower byte with no corresponding bits set in the upper byte.

Impact:

A minor inconsistency can occur when customer firmware is polling the STATUS_WORD register of the part.

Root Cause:

The two bytes making up STATUS_WORD are transferred separately to the PMBus controller of the LTC3884. If STATUS_WORD LSB and MSB values are being transferred to the user when a status event occurs, an incoherent read can be reported to the user.

Workarounds:

Several workarounds are possible, depending on the system configuration and requirements. Contact LTC Factory Applications for additional assistance.

- 1) Poll STATUS_BYTE instead of STATUS_WORD. STATUS_BYTE indicates the part status sufficiently.
- 2) Poll STATUS_WORD twice if a discrepancy is detected. STATUS_WORD will poll correctly immediately after the first incorrect reading.

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