

EFM[®]32

... the world's most energy friendly microcontrollers

EFM32LG880 Errata, Chip Rev. E

F256/F128/F64



This document describes errata for the latest revision of EFM32LG880 devices.



1 Errata

This document contains information on the errata of the latest revision of this device. For errata on older revisions, please refer to the errata history for the device. The device data sheet explains how to identify chip revisions, either from package markings or electronically.

In addition to the errata noted below, the errata for the ARM Cortex-M3 r2p1 (www.arm.com) also applies to this device.

1.1 Chip revision E

Table 1.1. Erratas

ID	Title/Problem	Effect	Fix/Workaround
BU_E105	LFXO missing cycles during IOVDD ramping LFXO missing cycles during IOVDD ramping when used in combination with Backup mode.	When IOVDD is ramped, the dc-level of the XTAL signal changes, resulting in missed LFXO cycles and possible glitches on the LFXO clock.	Set PRESC in BURTC_CTRL to greater than 0 when ramping IOVDD in combination with Backup mode to avoid glitches on the LFXO clock.
CMU_E114	Device not waking up from EM2 when using prescaled non-HFRCO oscillator as HFCLK	If the device is running from any prescaled oscillator other than HFRCO as HFCLK and HFRCO is disabled, the device will not wake up from EM2.	Before entering EM2, clear CMU_CTRL_HFCLKDIV. Alternatively, enable HFRCO by setting CMU_OSCENCMD_HFRCOEN and wait until CMU_STATUS_HFRCORDY is set.
DAC_E109	DAC output drift over lifetime The voltage output of the DAC might drift over time.	When the device is powered and the DAC is disabled, stress on an internal circuit node can cause the output voltage of the DAC to drift over time, and in some cases may violate the $V_{DACOFFSET}$ specification. If the DAC is always enabled while the device is powered, this condition cannot occur.	Both in the startup initialization code and prior to disabling the DAC in application code, set the OPAnSHORT bit in DACn_OPACTRL to a '1' for the corresponding DAC(s) used by the application. This will prevent the output voltage drift over time effect.
EMU_E107	Interrupts during EM2 entry An interrupt from a peripheral running from the high frequency clock that is received during EM2 entry will cause the EMU to ignore the SLEEP-DEEP-flag.	During EM2 entry, the high frequency clocks that are disabled during EM2 will run for some clock cycles after WFI is issued to allow safe shutdown of the peripherals. If an enabled interrupt is requested from one of these non-EM2 peripherals during this shutdown period, the attempt to enter EM2 will fail, and the device will enter EM1 instead. As a result the pending interrupt will immediately wake the device to EM0.	Before entering EM2, disable all high frequency peripheral interrupts in the core.
PCNT_E102	PCNT Pulse Width Filtering does not work	The PCNT Pulse Width Filter does not work as intended.	Do not use the pulse width filter, i.e. ensure $FILT = 0$ in PCNTn_CTRL.

ID	Title/Problem	Effect	Fix/Workaround
TIMER_E103	<p>Capture/compare output is unreliable with RSSCOIST enabled</p> <p>The TIMER capture/compare output is unreliable when RSSCOIST is enabled and the clock is prescaled.</p>	<p>When RSSCOIST is set and PRESC > 0 in TIMERN_CTRL, the capture/compare output value is not reliable.</p>	<p>Do not use a prescaled clock, i.e. ensure PRESC = 0 in TIMERN_CTRL when RSSCOIST is enabled.</p>
RMU_E101	<p>POR calibration initialization issue</p> <p>Upon initial power-on, some devices may not be able to access flash memory above the 4 kB boundary, or some calibration registers on some devices may not be set to their factory calibration values.</p>	<p>The list of affected devices can be found in the Knowledge Base (KB) article listed under Fix/Workaround.</p> <p>Some devices are sensitive to the power supply ramp during initial power-on. Specific ramp profiles on these devices can cause an intermittent issue resulting in one of two failure modes (A) or (B):</p> <p>A. Flash memory above the 4 kB boundary is inaccessible. Reads of the flash will return zeros. Write attempts will return an “invalid address” error code in the MSC_STATUS register. Code execution will behave as though the memory above 4 kB was filled with zeros until the device resets itself.</p> <p>B. Some parts of the calibration initialization process do not complete successfully. On USB devices, the USB voltage regulator does not get calibrated. Specific peripheral registers that may not be calibrated are as follows (not all registers apply to all devices): ADC0_CAL, IDAC_CAL, DAC0_CAL, DAC0_BIASPROG, DAC0_OPACTRL, and DAC0_OPAOFFSET.</p> <p>A SYSRESETREQ reset will clear either failure mode, and the device will behave normally until the next power-on event.</p>	<p>Additional information including a software workaround is available from the following KB article URL:</p> <p>http://community.silabs.com/t5/32-bit-MCU-Knowledge-Base/POR-calibration-initialization-issue/ta-p/154716</p>

1.2 Older Revisions

Erratas for older revisions can be found at the Silicon Laboratories homepage:

www.silabs.com/32bit-errata

2 Revision History

2.1 Revision 1.10

October 5th, 2015

Added TIMER_E103.

Added PCNT_E102.

Added RMU_E101.

Added DAC_E109.

Added EMU_E107.

2.2 Revision 0.70

June 13th, 2014

Updated to product revision E.

Removed erratas that are not applicable to revision E.

2.3 Revision 0.60

August 21st, 2013

Added ADC_E117.

Added AES_E102.

Updated disclaimer, trademark and contact information.

2.4 Revision 0.50

July 30th, 2013

Added AES_E101.

Added BURTC_E102.

Added CMU_E114.

Added DMA_E101.

Updated errata naming convention.

2.5 Revision 0.40

June 5th, 2012

Added ADC1.

Added DI1.

2.6 Revision 0.30

April 24th, 2012

Added BU6.

Added CMU4.

Added CMU5.

Added LES3.

Added USART1.

Removed Erratas not valid for chip revision.

2.7 Revision 0.20

January 6th, 2012

Added CMU3.

Added CUR3.

Added CUR5.

Added MSC1.

Updated PRS1.

Removed Erratas not valid for chip revision.

2.8 Revision 0.10

November 4th, 2011

Initial preliminary release.

A Disclaimer and Trademarks

A.1 Disclaimer

Silicon Laboratories intends to provide customers with the latest, accurate, and in-depth documentation of all peripherals and modules available for system and software implementers using or intending to use the Silicon Laboratories products. Characterization data, available modules and peripherals, memory sizes and memory addresses refer to each specific device, and "Typical" parameters provided can and do vary in different applications. Application examples described herein are for illustrative purposes only. Silicon Laboratories reserves the right to make changes without further notice and limitation to product information, specifications, and descriptions herein, and does not give warranties as to the accuracy or completeness of the included information. Silicon Laboratories shall have no liability for the consequences of use of the information supplied herein. This document does not imply or express copyright licenses granted hereunder to design or fabricate any integrated circuits. The products must not be used within any Life Support System without the specific written consent of Silicon Laboratories. A "Life Support System" is any product or system intended to support or sustain life and/or health, which, if it fails, can be reasonably expected to result in significant personal injury or death. Silicon Laboratories products are generally not intended for military applications. Silicon Laboratories products shall under no circumstances be used in weapons of mass destruction including (but not limited to) nuclear, biological or chemical weapons, or missiles capable of delivering such weapons.

A.2 Trademark Information

Silicon Laboratories Inc., Silicon Laboratories, Silicon Labs, SiLabs and the Silicon Labs logo, CMEMS[®], EFM, EFM32, EFR, Energy Micro, Energy Micro logo and combinations thereof, "the world's most energy friendly microcontrollers", Ember[®], EZLink[®], EZMac[®], EZRadio[®], EZRadioPRO[®], DSPLL[®], ISO-modem[®], Precision32[®], ProSLIC[®], SiPHY[®], USBXpress[®] and others are trademarks or registered trademarks of Silicon Laboratories Inc. ARM, CORTEX, Cortex-M3 and THUMB are trademarks or registered trademarks of ARM Holdings. Keil is a registered trademark of ARM Limited. All other products or brand names mentioned herein are trademarks of their respective holders.

B Contact Information

Silicon Laboratories Inc.

400 West Cesar Chavez

Austin, TX 78701

Please visit the Silicon Labs Technical Support web page:

<http://www.silabs.com/support/pages/contacttechnicalsupport.aspx>

and register to submit a technical support request.

Table of Contents

- 1. Errata 2
 - 1.1. Chip revision E 2
 - 1.2. Older Revisions 3
- 2. Revision History 4
 - 2.1. Revision 1.10 4
 - 2.2. Revision 0.70 4
 - 2.3. Revision 0.60 4
 - 2.4. Revision 0.50 4
 - 2.5. Revision 0.40 5
 - 2.6. Revision 0.30 5
 - 2.7. Revision 0.20 5
 - 2.8. Revision 0.10 6
- A. Disclaimer and Trademarks 7
 - A.1. Disclaimer 7
 - A.2. Trademark Information 7
- B. Contact Information 8
 - B.1. 8

List of Tables

1.1. Erratas 2

silabos.com

