



ATxmega128/64/32/16A4U

ATxmega128/64/32/16A4U Silicon Errata and Data Sheet Clarification

Introduction

The ATxmega128/64/32/16A4U devices you have received conform functionally to the current device data sheet (<http://www.microchip.com/DS40002166>), except for the anomalies described in this document. The errata described in this document will likely be addressed in future revisions of the ATxmega128/64/32/16A4U devices.

Note:

- This document summarizes all the silicon errata issues from all revisions of silicon, previous as well as current.

Table of Contents

Introduction.....	1
1. Silicon Issue Summary.....	3
2. Silicon Errata Issues.....	4
2.1. Errata Details.....	4
2.2. ADC - Analog to Digital Converter.....	4
2.3. CRC - Cyclic Redundancy Check.....	4
2.4. AWeX - Advanced Waveform eXtension.....	5
2.5. Hi-Res - High-Resolution Extension.....	6
3. Data Sheet Clarifications.....	7
3.1. None.....	7
4. Document Revision History.....	8
4.1. Revision History.....	8
The Microchip Website.....	9
Product Change Notification Service.....	9
Customer Support.....	9
Microchip Devices Code Protection Feature.....	9
Legal Notice.....	9
Trademarks.....	10
Quality Management System.....	10
Worldwide Sales and Service.....	11

1. Silicon Issue Summary

Legend

- Erratum is not applicable.
- X Erratum is applicable.
- * This silicon revision was never released to production.

Peripheral	Short Description	Valid for Silicon Revision							
		ATxmega16A4U		ATxmega32A4U		ATxmega64A4U			ATxmega128A4U
		Rev. A-D	Rev. E	Rev. A-D	Rev. E	Rev. A-B	Rev. C	Rev. D	Rev. A
ADC	ADC May Have Missing Codes in Single Ended Unsigned Mode at Low Temp and Low V _{CC}	*	X	*	X	*	X	X	X
CRC	CRC Fails for Range CRC When End Address is the Last Word Address of a Flash Section	*	X	*	X	*	X	X	-
AWeX	AWeX Fault Protection Restore is Not Done Correctly in Pattern Generation Mode	*	X	*	X	*	X	-	-
Hi-Res	Hi-Res Extension Does Not Work for TC0/1 CCB and CCD	*	X	X	X	*	X	X	X

2. Silicon Errata Issues

2.1 Errata Details

- Erratum is not applicable.
- X** Erratum is applicable.
- * This silicon revision was never released to production.

2.2 ADC - Analog to Digital Converter

2.2.1 ADC May Have Missing Codes in Single Ended (SE) Unsigned Mode at Low Temp. and Low V_{CC}

The ADC may have missing codes in SE unsigned mode below 0°C when V_{CC} is below 1.8V.

Workaround

Use the ADC in SE signed mode.

Affected Silicon Revisions

ATxmega16A4U		
Rev. A - D	Rev. E	
*	X	

ATxmega32A4U	
Rev. A - D	Rev. E
*	X

ATxmega64A4U		
Rev. A-B	Rev. C	Rev. D
*	X	X

ATxmega128A4U	
Rev. A	
X	

2.3 CRC - Cyclic Redundancy Check

2.3.1 CRC Fails for Range CRC When End Address is the Last Word Address of a Flash Section

If the boot read lock is enabled, the range CRC cannot end on the last address of the application section. If the application table read lock is enabled, the range CRC cannot end on the last address before the application table.

Workaround

Ensure that the end address used in Range CRC does not end at the last address before a section with read lock is enabled. Instead, use the dedicated CRC commands for complete application sections.

Affected Silicon Revisions

ATxmega16A4U		
Rev. A - D	Rev. E	
*	X	

ATxmega32A4U	
Rev. A - D	Rev. E
*	X

ATxmega64A4U		
Rev. A-B	Rev. C	Rev. D
*	X	X

ATxmega128A4U	
Rev. A	
-	

2.4 AWeX - Advanced Waveform eXtension

2.4.1 AWeX Fault Protection Restore is Not Done Correctly in Pattern Generation Mode

When a fault is detected, the OUTOVEN register is cleared, and when the fault condition is cleared, OUTOVEN is restored according to the corresponding enabled DTI channels. For Common Waveform Channel Mode (CWCM), this has no effect as the OUTOVEN is correct after restoring from fault. For Pattern Generation Mode (PGM), OUTOVEN should instead have been restored according to the DTLSEBUF register.

Workaround

For CWCM, no workaround is required.

For PGM in latched mode, disable the DTI channels before returning from the fault condition. Then, set the correct OUTOVEN value and enable the DTI channels, before the direction (DIR) register is written to enable the correct outputs again.

Affected Silicon Revisions

ATxmega16A4U		
Rev. A - D	Rev. E	
*	X	

ATxmega32A4U	
Rev. A - D	Rev. E
*	X

ATxmega64A4U		
Rev. A-B	Rev. C	Rev. D
*	X	-

ATxmega128A4U	
Rev. A	
	-

2.5 Hi-Res - High-Resolution Extension

2.5.1 Hi-Res Extension Does Not Work for TC0/1 CCB and CCD

Enabling TC0/1 CCB or CCD with the Hi-res extension will cause incorrect values on belonging channel output in any of the waveform generation modes.

Workaround

None.

Affected Silicon Revisions

ATxmega16A4U	
Rev. A - D	Rev. E
*	X

ATxmega32A4U	
Rev. A - D	Rev. E
*	X

ATxmega64A4U		
Rev. A-B	Rev. C	Rev. D
*	X	X

ATxmega128A4U	
Rev. A	
	X

3. Data Sheet Clarifications

The following typographic corrections and clarifications are to be noted for the latest version of the device data sheet (<http://microchip.com/DS40002166>).

Note: Corrections are shown in **bold**. Where possible, the original bold text formatting has been removed for clarity.

3.1 None

There are no known data sheet clarifications as of this publication date.

4. Document Revision History

Note: The data sheet clarification document revision is independent of the die revision and the device variant (last letter of the ordering number).

4.1 Revision History

Doc. Rev.	Date	Comments
A	04/2020	Initial release of this document. • Content moved from the data sheet and restructured to the new document template • Updated the die revision list to reflect die revisions in production • Added silicon issue <i>Hi-Res Extension Does Not Work for TC0/1 CCB and CCD</i>

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