CoreSight ETM-M55 TM981
Software Developer Errata Notice

This document contains all known errata since the r0p0 release of the product.

Non-Confidential Proprietary notice

LES-PRE-20349

Confidentiality Status

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Product Status

The information in this document is for a product in development and is not final.

Web address

http://www.arm.com/.

Feedback on this product

If you have any comments or suggestions about this product, contact your supplier and give:

- The product name.
- The product revision or version.
- An explanation with as much information as you can provide. Include symptoms and diagnostic procedures if appropriate.

Feedback on this document

If you have comments on content then send an e-mail to errata@arm.com giving:

- The document title.
- The document number: SDEN-1679657.
- If applicable, the page number(s) to which your comments refer.
- A concise explanation of your comments.

Arm also welcomes general suggestions for additions and improvements.

Contents

Introduction

Scope

This document describes errata categorized by level of severity. Each description includes:

- The current status of the erratum.
- Where the implementation deviates from the specification and the conditions required for erroneous behavior to occur.
- The implications of the erratum with respect to typical applications.
- The application and limitations of a workaround where possible.

Categorization of errata

Errata are split into three levels of severity and further qualified as common or rare:

Category A	A critical error. No workaround is available or workarounds are impactful. The error is likely to be common for many systems and applications.
Category A (Rare)	A critical error. No workaround is available or workarounds are impactful. The error is likely to be rare for most systems and applications. Rare is determined by analysis, verification and usage.
Category B	A significant error or a critical error with an acceptable workaround. The error is likely to be common for many systems and applications.
Category B (Rare)	A significant error or a critical error with an acceptable workaround. The error is likely to be rare for most systems and applications. Rare is determined by analysis, verification and usage.
Category C	A minor error.

Change control

Errata are listed in this section if they are new to the document, or marked as “updated” if there has been any change to the erratum text. Fixed errata are not shown as updated unless the erratum text has changed. The errata summary table on page 7 identifies errata that have been fixed in each product revision.

15-Sep-2021: Changes in document version 3.0				
ID	Status	Area	Cat	Summary of erratum
No new or updated errata in this document version.				

23-Apr-2021: Changes in document version 2.0				
ID	Status	Area	Cat	Summary of erratum
2080680	New	Programmer	CatC	The ETM single-shot control and the ETM ViewInst start/stop control may fail to operate correctly

20-Dec-2019: Changes in document version 1.0				
ID	Status	Area	Cat	Summary of erratum
No errata in this document version.				

Errata summary table

The errata associated with this product affect product versions as below.

ID	Cat	Summary	Found in versions	Fixed in version
2080680	CatC	The ETM single-shot control and the ETM ViewInst start/stop control may fail to operate correctly	r0p0, r0p1, r0p2	r1p0

Errata descriptions

Category A

There are no errata in this category.

Category A (rare)

There are no errata in this category.

Category B

There are no errata in this category.

Category B (rare)

There are no errata in this category.

Category C

2080680

The ETM single-shot control and the ETM ViewInst start/stop control may fail to operate correctly

Status

Affects: CoreSight ETM-M55
Fault Type: Programmer Category C
Fault Status: Present in r0p0, r0p1, r0p2. Fixed in r1p0.

Description

The CoreSight *Embedded Trace Macrocell* (CoreSight ETM-M55) supports the use of *Data Watchpoint and Trace Unit* (DWT) comparator inputs to drive trace filtering resources including single-shot and start/stop. This allows single-shot to fire when a particular instruction is executed or trace to start or stop on a particular instruction. This erratum can cause single-shot and start/stop to not occur.

Configurations affected

This erratum affects all configurations of the Cortex-M55 processor configured with the DWT and ETM.

Conditions

The erratum occurs if the following sequence of conditions are met:

1. The ETM is enabled and programmed to use a DWT comparator with a single-shot control or the ETM is enabled and programmed to use a DWT comparator for instruction based filtering using the ViewInst start/stop control.
2. The DWT comparator is configured to match on an instruction address and the instruction at that address is one of the following:
    - LDM
    - STM
    - Load instruction which loads the PC
    - BLXNS
    - An instruction that can trigger a function return such as BX LR

3. That instruction is executed by the processor

Implications

- ETM resources setup to use single-shot control will not operate as expected
- Instructions may not be traced
- More instructions may be traced than expected

Workaround

DWT comparators used by the ETM should be adjusted to avoid the instruction types listed in Conditions above.