



Mali GPU User Interface Engine Errata

Media Processing Division

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Abstract

This document describes the known errata in the Mali GPU User Interface Engine version 2.3.1.

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1 ABOUT THIS DOCUMENT

1.1 Change Control

Issue	Date	Change
1.0	Sep-15, 2009	Errata for version 2.2 EAC
2.0	Jan 24, 2010	Errata for version 2.3 EAC
3.0	June 2, 2010	Errata for version 2.3.1 EAC.

1.2 References

This document refers to the following documents.

Ref.	Document No.	Author(s)	Title
	(none)		

1.3 Scope

This document describes the errata discovered in the implementation of Mali GPU User Interface Engine Tool, categorized by level of severity. Each description includes:

- the conditions under which erroneous behavior occurs
- the implications of the erratum with respect to typical applications
- the application and limitations of a 'work-around' where possible

1.4 Terms and Abbreviations

This document uses the following terms and abbreviations.

Term	Meaning
Cat	Acronym for Category
AEL	ARM Embedded Linux

2 CATEGORISATION OF ERRATA

Errata recorded in this document are split into three groups:

- Category 1** Features which are impossible to work around and severely restricts the use of the software in all or the majority of applications rendering the software unusable.
- Category 2** Features which contravene the specified behavior and may limit or severely impair the intended use of specified features but does not render the software unusable in all or the majority of applications.
- Category 3** Features that were not the originally intended behavior but should not cause any problems in applications.

2.1 Errata Summary

The following tables summarize all errata associated with this product.

Mali GPU User Interface Engine Errata Summary

ID	Cat	Summary of Erratum
6678	Cat 3	Example 11_dataset_optimization does not work
9777	Cat 3	Compressed texture assets must contain all mipmap levels
9800	Cat 3	Lotion lightshow walls wrong on ATI
9867	Cat 3	UI Engine unit tests for error handling fail in release builds
9873	Cat 3	Wireframes not displayed in lightshow applet of LotionUI demo

3 CATEGORY 1 ERRATA

No Category 1 errata exist.

4 CATEGORY 2 ERRATA

No Category 2 errata exist.

5 CATEGORY 3 ERRATA

6678: Example 11_dataset_optimization does not work

Status

Affects: Mali GPU User Interface Engine
Fault status: Cat 3, Present in: 2.3
Platforms Affected: All

Description

The example runs with out any apparent error messages but gives no visual output.

Implications

There will be no visual rendering on the display.

Workaround

No workaround exists currently

9777: Compressed texture assets must contain all mipmap levels

Status

Affects: Mali GPU User Interface Engine
Fault status: Cat 3, Present in: 2.3
Platforms Affected: AEL

Description

The User Interface Engine does not generate missing mipmap levels for compressed texture assets.

Implications

If a compressed texture asset is loaded that includes less mipmaps levels than are needed, and then used in an environment that requires mipmaps, the texture will be drawn incorrectly.

Workaround

Two workarounds exist:

1. Ensure that compressed textures are loaded with a compressed bitmap for each mipmap level. When building compressed textures using the ARM Mali Texture Compression Tool specify "generate mipmaps" in the compression dialog box.

OR

2. Avoid using mipmaps for compressed textures by, for example, setting the filter mode to GL_NEAREST.

9800: Lotion Lightshow Walls wrong on ATI

Status

Affects: Mali GPU User Interface Engine
Fault status: Cat 3, Present in: 2.3
Platforms Affected: Windows and Linux desktops with ATI graphics cards.

Description

When the lightshow applet of the Lotion UI is run on a desktop system with an ATI graphics card large diagonal arrows are drawn on some of the surfaces, in place of the expected textures. This has been seen on both an ATI Mobility FireGL V5700 with Windows XP driver version 8.633.0.0, and an ATI Radion HD 2600 Pro with Linux (Ubuntu 10.04) driver version 8.723-100406a-099494c-ATI.

Implications

When using this combination of software and hardware surfaces with complex shaders may not be drawn correctly.

Workaround

No software workarounds currently exist. Using different graphics cards may solve the problem.

9867: UI Engine unit tests for error handling fail in release builds.

Status

Affects: Mali GPU User Interface Engine
Fault status: Cat 3, Present in: 2.3
Platforms Affected: All

Description

When the UI Engine is build with CONFIG=release it does not check the error status resulting from OpenGL ES 2.0 functions calls, and hence does not report errors. This is done to improve performance (checking the error status introduces an extra OpenGL call after each call that could result in an error.). Two of the unit tests, however, test this error reporting, and hence fail under these circumstances.

Implications

When the UI Engine is built with the CONFIG=release option unit tests CONTEXT01 and BUFFER01 fail. Other software that depends on the Mali UI Engine checking for OpenGL ES 2.0 errors will also behave incorrectly.

Workaround

Build the UI Engine with CONFIG=debug, or define the CPPFLAGS environment variable to

```
-DMDE_DEBUG_BUILD
```

before building. Either of these options will, however, reduce the performance of the UI Engine.

9873: Wireframes not displayed in lightshow applet of LotionUI demo.

Status

Affects: Mali GPU User Interface Engine
Fault status: Cat 3, Present in: 2.3
Platforms Affected: AEL

Description

On embedded targets when the wireframe button is pressed on in the lightshow applet of the LotionUI demo everything except the light ball disappears from the drawn scene. This option should also display wireframes of the walls and columns in the scene.

Implications

The scene is drawn incorrectly.

Workaround

No workaround exists currently