



Mali GPU Shader Development Studio Errata

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Abstract

This document describes the known errata in the EAC release of Mali GPU Shader Development Studio version 1.1.

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General suggestion for additions and improvements are also welcome.

CONTENTS

1	Preface	4
1.1	Change Control	4
1.2	Scope	4
1.3	Terms and Abbreviations	4
2	Categorisation of errata	5
2.1	Errata Summary	5
3	CATEGORY 1 Errata	7
4	CATEGORY 2 ERRATA	8
5	CATEGORY 3 ERRATA	9
5246:	Shader Configuration does not track moved files	9
5525:	New Shader Configuration wizard does not use currently selected project	9
5616:	White frames can be seen in the Shader Preview	9
5704:	Some toolbar buttons do not have default actions	10
5922:	Zoom factor in Orthographic Projection mode is incorrect	10
6080:	Renaming the project during build causes error	11
6165:	Unreferenced Samplers in a Sampler Array causes ShaderServer crash	11
6241:	Eclipse 3.4 incorrectly handles local update site	11
7756:	Uniform variables are set to default values on editing shaders	12
8099:	Error opening shader configuration file in new Eclipse project	12
8586:	Direction of cubemap textures in y direction is inverted	13
724001:	No activity when attempting to render a shader with no attributes or uniforms defined	13
724066:	Shortcuts to "New" wizards not shown in Mali GPU Shader Development Studio Perspective	13

1 PREFACE

1.1 Change Control

<i>Issue</i>	<i>Date</i>	<i>Change</i>
1.0	15 th September 2009	Initial release.

1.2 Scope

This document describes the errata discovered in the implementation of Mali Shader Development Studio, 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

1.3 Terms and Abbreviations

This document uses the following terms and abbreviations:

<i>Term</i>	<i>Meaning</i>
Cat	Category

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 Shader Development Studio (SDS) Errata Summary

ID	Cat	Summary of Erratum
724904	Cat 2	Sending multiple sampler textures fails on Linux
5246	Cat 3	Shader Configuration does not track moved files
5440	Cat 3	Keyboard shortcuts are not implemented
5525	Cat 3	New Shader Configuration wizard does not use currently selected project
5616	Cat 3	White frames can be seen in the Shader Preview
5704	Cat 3	Some toolbar buttons do not have default actions
5922	Cat 3	Zoom factor in Orthographic Projection mode is incorrect
6080	Cat 3	Renaming the project during build causes error
6165	Cat 3	Unreferenced Samplers in a Sampler Array causes ShaderServer crash
6241	Cat 3	Eclipse 3.4 incorrectly handles local update site
7756	Cat 3	Uniform variables are set to default values on editing shaders
8099	Cat 3	Error opening Shader Configuration file in new Eclipse project
8586	Cat 3	Direction of cubemap textures in y direction is inverted
724001	Cat 3	No activity when attempting to render a shader with no attributes or uniforms defined
724066	Cat 3	Shortcuts to "New" wizards not shown in Mali GPU Shader Development Studio Perspective

ID	Cat	Summary of Erratum
724071	Cat 3	New Shader Configuration Wizard dialog does not close

3 CATEGORY 1 ERRATA

No Category 1 errata

4 CATEGORY 2 ERRATA

724904: Sending multiple sampler textures fails on Linux

Status

Affects: Shader Development Studio
Fault status: Cat 2, Present in: 1.1
Platforms Affected: Linux

Description

When rendering a shader with multiple textures on Linux, only the final texture sent to OpenGL will appear.

Implications

Multiple textures will not behave correctly on Linux.

Workaround

Provide a single texture atlas and use texture co-ordinates to select the correct texture. This approach is also recommended best practice for performance.

5 CATEGORY 3 ERRATA

5246: Shader Configuration does not track moved files

Status

Affects: Shader Development Studio
Fault status: Cat 3, Present in: 1.1
Platforms Affected: Windows XP

Description

If a shader source file referenced in a Shader Configuration via a Shader Effect is moved on the file system, the Shader Configuration does not update to track the moved file.

Implications

Shader Effects can seem to break and no longer render if a source file belonging to that effect is moved on the file system.

Workaround

Users must update the Shader Configuration manually should they move the location of a shader source file.

5525: New Shader Configuration wizard does not use currently selected project

Status

Affects: Shader Development Studio
Fault status: Cat 3, Present in: 1.1
Platforms Affected: Windows XP

Description

The New Shader Configuration Wizard does not take notice of the currently selected project when asking for which project to create the Shader Configuration in.

Implications

A user must perform the extra step of selecting the correct project to create the new Shader Configuration file in.

Workaround

Select the project manually.

5616: White frames can be seen in the Shader Preview

Status

Affects: Shader Development Studio
Fault status: Cat 3, Present in: 1.1
Platforms Affected: Windows XP

Description

A race condition in the disk-streaming mechanism can cause white frames to appear in the Shader Preview.

Implications

A white frame may occasionally appear in the Shader Preview view.

Workaround

The appearance of the white frame is not consistent, and simply selecting a different frame and moving back to the original should work around the issue.

5704: Some toolbar buttons do not have default actions

Status

Affects: Shader Development Studio
Fault status: Cat 3, Present in: 1.1
Platforms Affected: Windows XP

Description

Some toolbar buttons that contain drop-down arrows do not have a default action if the button itself, rather than the arrow, is clicked.

Implications

A user pressing one of the affected toolbar buttons will observe no reaction by the software. This is default Eclipse behaviour.

Workaround

Users should click the drop-down arrow for access to the functionality of these buttons.

5922: Zoom factor in Orthographic Projection mode is incorrect

Status

Affects: Shader Development Studio
Fault status: Cat 3, Present in: 1.1
Platforms Affected: Windows XP

Description

The camera zoom in orthographic project mode is scaled incorrectly.

Implications

Some geometries will require zooming out to the maximum value allowed (-100) to be able to visualize the whole geometry.

Workaround

Set the camera zoom level to the maximum negative value allowed, or use normal projection mode.

6080: Renaming the project during build causes error

Status

Affects: Shader Development Studio
Fault status: Cat 3, Present in: 1.1
Platforms Affected: Windows XP

Description

Renaming the Eclipse project in the middle of a build can cause resource errors. This is part of an underlying Eclipse behaviour.

Implications

Repeatedly renaming, or renaming during a build can cause Eclipse to report that resources cannot be found on the old path or that the attempt to rename the project has failed.

Workaround

Avoid renaming projects repeatedly or during builds, should the error occur shutting down and restarting Eclipse normally will clear the condition.

6165: Unreferenced Samplers in a Sampler Array causes ShaderServer crash

Status

Affects: Shader Development Studio
Fault status: Cat 3, Present in: 1.1
Platforms Affected: Windows XP

Description

If a user creates an array of samplers, but does not reference some of them, it is possible that the driver will optimise those samplers and remove them. In certain versions of some GL drivers, the introspection API will incorrectly report the status of those samplers, causing the Shader Development Studio to attempt to configure these removed samplers. This leads to the emulator performing an operation that causes Windows to terminate the process.

Implications

Shaders with unreferenced samplers may cause the local emulator to crash.

Workaround

This issue has been seen on the NVIDIA Forceware drivers, version 169.21. The later version drivers (175.19) do not exhibit this issue.

6241: Eclipse 3.4 incorrectly handles local update site

Status

Affects: Shader Development Studio
Fault status: Cat 3, Present in: 1.1
Platforms Affected: Windows XP

Description

A clean installation of Eclipse 3.4 (Ganymede) incorrectly extracts and adds the web URL from the feature plugin as a remote updates site, even when you are adding only a local update side (via Local...).

Implications

The errata results in incorrect behaviour if the user attempts to install via the bogus remote site.

Workaround

The user should ignore the "www.arm.com" update site URL and instead use the local file system URL to perform the update. If necessary, "Manage Sites..." can be used to permanently remove the spurious update site.

7756: Uniform variables are set to default values on editing shaders

Status

Affects: Shader Development Studio
Fault status: Cat 3, Present in: 1.1
Platforms Affected: Windows XP

Description

Shader variables present in *Shader Attributes* and *Shader Uniforms* view are set to default values on editing shader programs. This may completely change user specified values (present in *shaders.shaderconfig* file) to these variables.

Implications

The errata results in to incorrect output in *Shader Preview* view.

Workaround

Click "*Reload Data from Shader Configuration*" present in *Shader Control* view to restore the uniform and attribute values from *shaders.shaderconfig* file.

8099: Error opening shader configuration file in new Eclipse project

Status

Affects: Shader Development Studio
Fault status: Cat 3, Present in: 1.1
Platforms Affected: Windows XP

Description

An error (*java.lang.NullPointerException*) is thrown in *shaders.shaderconfig* file while creating a new Eclipse java project using existing shader sources and *shaders.shaderconfig* file. This error is seen with an option "*Create new project in workspace*" selected in *File->New->Project->Java Project* Window of Eclipse.

Implications

The errata results in an incomplete list of shader effects available under *Select Shader to Render* preview.

Workaround

Restart Eclipse.

OR

Choose an option *"Create project from existing source"* while creating new Eclipse java project for the shader sources.

8586: Direction of cubemap textures in y direction is inverted

Status

Affects: Shader Development Studio
Fault status: Cat 3, Present in: 1.1
Platforms Affected: Windows XP

Description

Direction of cubemap textures in y direction is inverted. Issue is under investigation.

Implications

Applied cubemap textures looks inverted in y direction.

Workaround

Supply already inverted textures in y direction.

724001: No activity when attempting to render a shader with no attributes or uniforms defined

Status

Affects: Shader Development Studio
Fault status: Cat 3, Present in: 1.1
Platforms Affected: Linux

Description

Rendering a shader with no attributes or uniforms defined will result in no activity from the Shader Development Studio.

Implications

No image will be rendered in the Shader Preview View, or the previously rendered shader will remain in the Shader Preview View (if an image was previously displayed).

Workaround

Add uniforms and attributes to the shader.

724066: Shortcuts to "New" wizards not shown in Mali GPU Shader Development Studio Perspective

Status

Affects: Shader Development Studio
Fault status: Cat 3, Present in: 1.1
Platforms Affected: Linux

Description

Under Linux, the "New -> Vertex Shader", "New -> Fragment Shader", "New -> ESSL File" and "New -> Shader configuration" shortcuts are missing.

Implications

The user will not be able to use the shortcuts to create new shader files or shader configurations, and must use the "Other" menu item to access the wizards.

Workaround

The wizards can still be activated by selecting "New -> Other..." and navigating to the appropriate wizard.

724071: New Shader Configuration Wizard dialog does not close

Status

Affects: Shader Development Studio
Fault status: Cat 3, Present in: 1.1
Platforms Affected: Linux

Description

It has been observed intermittently on Linux that the New Shader Configuration Wizard window does not close after creating the new Shader Configuration. The new Shader Configuration is created, and the window can be dismissed via the "Cancel" button.

Implications

The New Shader Configuration Wizard window does not close after creating the Shader Configuration. It must be dismissed via the "Cancel" button.

Workaround

Click "Cancel" to dismiss the window.