Linux OpenGL ES DDK package
Linux OpenGL ES DDK package (GX910)
EGL
Errata Notice

This document contains all errata known at the date of issue in releases up to and including revision r0p2 of Linux OpenGL ES DDK package

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- The documents number
- The page number(s) to which your comments refer
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General suggestion for additions and improvements are also welcome.

Contents

Introduction

Scope

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

- the current status of the defect
- where the implementation deviates from the specification and 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

Categorisation of Errata

Errata recorded in this document are split into three levels of severity:

Category 1	Behavior that is impossible to work around and that severely restricts the use of the product in all, or the majority of applications, rendering the device unusable.
Category 2	Behavior that contravenes the specified behavior and that might limit or severely impair the intended use of specified features, but does not render the product unusable in all or the majority of applications.
Category 3	Behavior that was not the originally intended behavior but should not cause any problems in applications.

Change Control

08 okt 2008: Changes in Document v1

Page	Status	ID	Cat	Summary
11	New	601466	Cat 2	pbuffer surface cleared when a different surface is made current
10	New	597866	Cat 2	eglCopyBuffers does not preserve the source surface
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13	New	602718	Cat 2	eglBindAPI does not properly disable the previous API
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20	New	602721	Cat 3	Zero-sized window surfaces not supported
19	New	602720	Cat 3	Non-default displays missing initialization of configs
18	New	602667	Cat 3	EGL_SAMPLES has wrong settings for non-multisampled EGL configs
17	New	602618	Cat 3	OpenVG 16xAA config has wrong conformance bit settings
16	New	601470	Cat 3	Incorrect mask filtering in eglChooseConfig
15	New	600917	Cat 3	eglCreatePbufferSurface fails if attrib_list does not specify EGL_WIDTH and EGL_HEIGHT

Errata Summary Table

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

A cell shown thus **X** indicates that the defect affects the revision shown at the top of that column.

ID	Cat	Summary of Erratum	r0p1	r0p2
589266	Cat 2	eglMakeCurrent ignores the read surface argument	X	
597866	Cat 2	eglCopyBuffers does not preserve the source surface	X	
601466	Cat 2	pbuffer surface cleared when a different surface is made current	X	
602716	Cat 2	eglCopyBuffers does not handle pitch correctly	X	
602718	Cat 2	eglBindAPI does not properly disable the previous API	X	
600917	Cat 3	eglCreatePbufferSurface fails if attrib_list does not specify EGL_WIDTH and EGL_HEIGHT	X	
601470	Cat 3	Incorrect mask filtering in eglChooseConfig	X	
602618	Cat 3	OpenVG 16xAA config has wrong conformance bit settings	X	
602667	Cat 3	EGL_SAMPLES has wrong settings for non-multisampled EGL configs	X	
602720	Cat 3	Non-default displays missing initialization of configs	X	
602721	Cat 3	Zero-sized window surfaces not supported	X	X
602722	Cat 3	EGLImage: Missing check for whether pbuffer is bound through eglBindTexImage		X

Errata - Category 1

There are no Errata in this Category

Errata - Category 2

589266: eglMakeCurrent ignores the read surface argument

Status

Affects: product Linux OpenGL ES DDK package.

Fault status: Cat 2, Present in: r0p1, Fixed in r0p2.

Description

eglMakeCurrent accepts two EGLSurface parameters, one read and one write surface. The read surface is ignored, causing the draw surface to be used both for reading and drawing.

Implications

Reads and writes will be done on the same EGLSurface.

Workaround

none

597866: eglCopyBuffers does not preserve the source surface

Status

Affects: product Linux OpenGL ES DDK package.

Fault status: Cat 2, Present in: r0p1, Fixed in r0p2.

Description

The color buffer of the source surface should be left unchanged after calling eglCopyBuffers. This driver does not honor this causing the color buffer to be cleared after a call to eglCopyBuffers.

Implications

Previous surface content will be lost.

Workaround

Use client API readback functions (glReadPixels, vgReadPixels) instead of calling eglCopyBuffers.

601466: pbuffer surface cleared when a different surface is made current

Status

Affects: product Linux OpenGL ES DDK package.

Fault status: Cat 2, Present in: r0p1, Fixed in r0p2.

Description

The currently bound surface should have its color buffer preserved when another surface is made current. For pbuffer surfaces, this is not the case. The pbuffer surface is cleared, leading to loss of the color buffer.

Implications

The contents of the currently bound pbuffer will be lost when a different surface is made current.

Workaround

Possible workarounds:

- Avoid making a different surface current until the rendering is finished
- Render the surface content to a texture before unbinding

602716: eglCopyBuffers does not handle pitch correctly

Status

Affects: product Linux OpenGL ES DDK package.

Fault status: Cat 2, Present in: r0p1, Fixed in r0p2.

Description

eglCopyBuffers copies the content of the framebuffer into a native pixmap. An incorrect surface pitch is used when the surface width is not a multiple of 16. This happens because the driver internally uses a surface pitch which is a multiple of 16 times the number of bytes per pixel.

Implications

If the source (framebuffer) pitch is not equal to the pixmap pitch, the output pixmap data will be distorted. The amount of distortion depends on the difference between the source pitch and pixmap pitch.

No read/write operations will be performed outside any of the buffers.

Workaround

Use EGL surfaces with a width multiple of 16.

602718: eglBindAPI does not properly disable the previous API

Status

Affects: product Linux OpenGL ES DDK package.

Fault status: Cat 2, Present in: r0p1, Fixed in r0p2.

Description

eglBindAPI does not fully disable the previously bound API if it has a current context and surface, which will lead to issues if both APIs are active, using the same surface.

Implications

The previously bound API will receive the callback for the current frame for the surface, not the currently bound API. After a call to eglSwapBuffers the correct API will start to receive the callbacks.

Workaround

Call `eglMakeCurrent( display, EGL_NO_SURFACE, EGL_NO_SURFACE, EGL_NO_CONTEXT );` before binding to a new API. This will ensure that the previous API is no longer active.

Errata - Category 3

600917: eglCreatePbufferSurface fails if attrib_list does not specify EGL_WIDTH and EGL_HEIGHT

Status

Affects: product Linux OpenGL ES DDK package.

Fault status: Cat 3, Present in: r0p1, Fixed in r0p2.

Description

According to the EGL specification, it should be allowed to create a pbuffer surface without specifying EGL_WIDTH and / or EGL_HEIGHT. This should lead to the width and / or height becoming zero as default.

A bug in the input validation causes this to be treated as an error. No pbuffer surface will be created and EGL_BAD_PARAMETER is reported as the error.

Implications

It is not possible to create a pbuffer surface which is zero sized in height and / or width.

Workaround

Use a pbuffer surface which is at least one pixel in width and height.

601470: Incorrect mask filtering in eglChooseConfig

Status

Affects: product Linux OpenGL ES DDK package.

Fault status: Cat 3, Present in: r0p1, Fixed in r0p2.

Description

In the attribute list given to eglChooseConfig the attributes `EGL_CONFORMANT`, `EGL_RENDERABLE_TYPE` and `EGL_SURFACE_TYPE` is defined by the EGL specification to use selection criteria 'Mask'.

The selection criteria 'Mask' is defined such that EGLConfigs are selected when the bits set in the attribute value include all the bits that are set in the specified value.

A bug causes EGLConfigs to be selected when one or more of the bits in the specified value matches the attribute value for the config, instead of matching all bits.

Implications

The call will return EGL configs that partially matches the mask bits, instead of matching all given the mask bits. Attributes affected by this is `EGL_CONFORMANT`, `EGL_RENDERABLE_TYPE` and `EGL_SURFACE_TYPE`.

Workaround

Iterate over the returned list of EGL configs and make sure to select a config that matches the query.

602618: OpenVG 16xAA config has wrong conformance bit settings

Status

Affects: product Linux OpenGL ES DDK package.

Fault status: Cat 3, Present in: r0p1, Fixed in r0p2.

Description

The OpenVG 16xAA 8888 config has conformance bits which includes EGL_OPENVG_BIT. This is wrong since 16xAA configs are not conformant.

The config does, however, still have the EGL_CONFIG_CAVEAT attribute set to EGL_NON_CONFORMANT_CONFIG.

Implications

eglGetConfigAttrib will return EGL_OPENVG_BIT instead of 0 when called with attribute EGL_CONFORMANT.

Workaround

Use EGL_CONFIG_CAVEAT when selecting configs, or when verifying configs with eglGetConfigAttrib. The affected config is marked as EGL_NON_CONFORMANT_CONFIG.

602667: EGL_SAMPLES has wrong settings for non-multisampled EGL configs

Status

Affects: product Linux OpenGL ES DDK package.

Fault status: Cat 3, Present in: r0p1, Fixed in r0p2.

Description

An EGLConfig has two attributes named EGL_SAMPLE_BUFFERS and EGL_SAMPLES. EGL_SAMPLE_BUFFERS is the number of sample buffers, while EGL_SAMPLES is the number of samples per pixel.

The EGL specification says that EGL_SAMPLES gives the number of samples per pixel - if EGL_SAMPLE_BUFFERS is zero, then EGL_SAMPLES will also be zero.

Two configs have EGL_SAMPLES_BUFFERS set to 0, while having EGL_SAMPLES set to 1, which is not in line with the EGL specification.

Implications

EGL configs with EGL_SAMPLE_BUFFERS set to 0 will have EGL_SAMPLES set to 1.

Workaround

If EGL_SAMPLE_BUFFERS indicates that a config is non-multisampled by having the value 0 then disregard the value of EGL_SAMPLES and assume it is 0.

602720: Non-default displays missing initialization of configs

Status

Affects: product Linux OpenGL ES DDK package.

Fault status: Cat 3, Present in: r0p1, Fixed in r0p2.

Description

The following sequence is used to initialize a display:

```
display = eglGetDisplay( EGL_DEFAULT_DISPLAY );
eglInitialize( display, NULL, NULL );
```

When initializing other native displays than EGL_DEFAULT_DISPLAY, configs will not be initialized for that display.

Implications

The display can not be used as no EGL configs are available.

Workaround

none

602721: Zero-sized window surfaces not supported

Status

Affects: product Linux OpenGL ES DDK package.

Fault status: Cat 3, Present in: r0p1,r0p2, Open.

Description

EGL does not support creating zero sized window surfaces or resizing existing window surfaces to zero size.

Implications

Failure to create or resize a window surface with either height or width equal to zero.

Workaround

Clamp window size to 1x1.

602722: EGLImage: Missing check for whether pbuffer is bound through eglBindTexImage

Status

Affects: product Linux OpenGL ES DDK package.

Fault status: Cat 3, Present in: r0p2, Open.

Description

eglCreateImageKHR is missing a check whether a pbuffer is bound through eglBindTexImage, and will therefore succeed even if the pbuffer is bound.

Implications

Creation of EGLImage will succeed, even if the supplied pbuffer is bound through eglBindTexImage. No other impact.

Workaround

Unbind the pbuffer using eglReleaseTexImage before creating an EGLImage.

Errata - Documentation

There are no Errata in this Category

Errata – Driver Software

There are no Errata in this Category