



S3C6410 OpenGL ES User's Guide

S3C6410

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S3C6410 RISC Microprocessor FIMG-3D User's Guide

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Preliminary product information describe products that are in development, for which full characterization data and associated errata are not yet available. Specifications and information herein are subject to change without notice.

Revision History

Revision No	Description of Change	Refer to	Author(s)	Date
1.0	Initial Draft		JeGeon Jung	2009-01-05
1.1.0	Driver structure is modified		JeGeon Jung	2009-02-06

Contents

1	INTRODUCTION	1
1.1	PURPOSE.....	1
1.2	SCOPE.....	1
1.3	INTENDED AUDIENCE	1
1.4	SUPPORTED HW & SW	1
1.5	DEFINITIONS, ACRONYMS, AND ABBREVIATIONS	1
1.6	REFERENCES.....	1
2	STRUCTURE.....	2
2.1	SOFTWARE LAYERS	2
3	BUILD GUIDE	3
3.1	LIBRARIES	3
3.2	HEADER FILES	3
3.3	USAGE.....	3
3.4	SHADER COMPILE.....	4
4	EXECUTION GUIDE.....	5
4.1	DLL LOCATION	5
5	SAMPLES	6
5.1	OPENGLES 1.1 DEMO APPLICATION.....	6
5.2	OPENGLES 2.0 DEMO APPLICATION.....	6

Figures

Figure 1 S3C6410 OpenGL ES Software layer	2
Figure 2 Setting Property for OpenGL ES2.0 in VS2005	3

Tables

오류! 그림 목차 항목을 찾을 수 없습니다.

1 Introduction

1.1 Purpose

This document is prepared for the purpose of describing the 6410 OpenGL ES usage guide.

1.2 Scope

The scope of this document is to describe

- How to use library.

1.3 Intended Audience

Intended Audience	Tick whenever Applicable
Project Manager	Yes
Project Leader	Yes
Project Team Member	Yes
Test Engineer	Yes

1.4 Supported HW & SW

Intended Audience	Tick whenever Applicable
HW	Samsung S3C6410 FIMG-3D
OS	Microsoft Windows CE 6.0

1.5 Definitions, Acronyms, and Abbreviations

Abbreviations	Description

1.6 References

Number	Reference	Description
1	S3C6410 Datasheet	S3C6410 Datasheet

2 Structure

2.1 Software layers

OpenGL ES driver has two layers. One is for mapping H/W and allocating memory. Another one is for OpenGL ES Libraries.

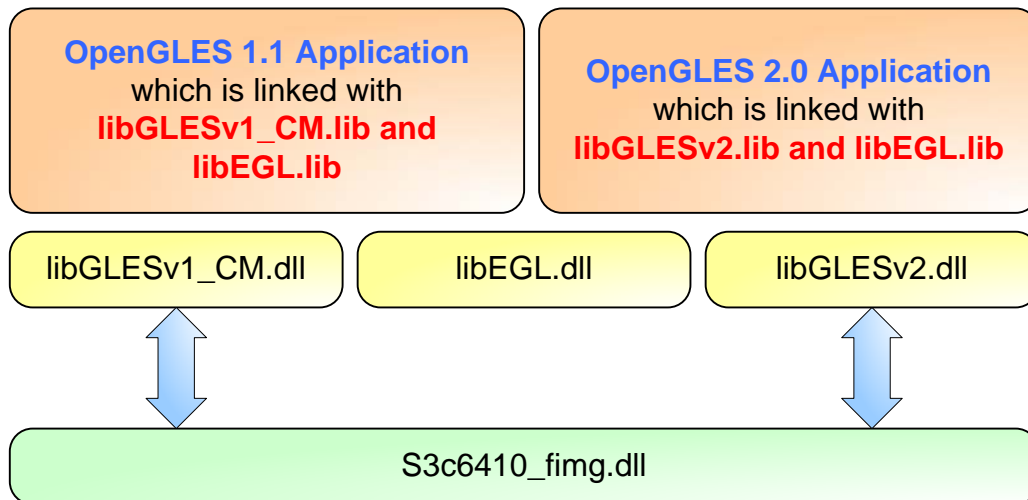


Figure 1 S3C6410 OpenGL ES Software layer

The Figure 1 shows this driver structure. S3c6410_fimg.dll is mapping and allocating layer. This driver maps H/W address for library. The library uses this mapped address. And it also allocates physically continuous memory for library and FIMG H/W. If the library request some texture memory and depth buffer, then this driver dynamically allocates some memory and return the address.

The libEGL.lib implements EGL 1.3. This will work with OpenGL ES1.1 and OpenGL ES2.0

The libGLESv1_CM.dll implements OpenGL ES1.1. If you want to know more about OpenGL ES 1.1, please visit www.opengl.org website.

The libGLESv2.dll implements OpenGL ES2.0. If you want to know more about OpenGL ES 1.1, please visit www.opengl.org website.

3 Build guide

3.1 Libraries

There are libraries for building application.

Library File	Description
libGLSv1_CM.lib	OpenGL ES 1.1 library
libGLSv2.lib	OpenGL ES 2.0 library
libEGL.lib	EGL 1.3 library

3.2 Header files

There are include folder.

File Name	Description
EGL/egl.h	EGL Header file
GLES2/gl2.h	OpenGL ES 2.0 Header file
GLES/gl.h	OpenGL ES 1.1 Header file

You don't need to care about other files.

3.3 Usage

For using OpenGL ES, You need to link EGL and OpenGL ES libraries.

In Project property of Visual Studio 2005, set Additional Dependency like the following Figure 2.

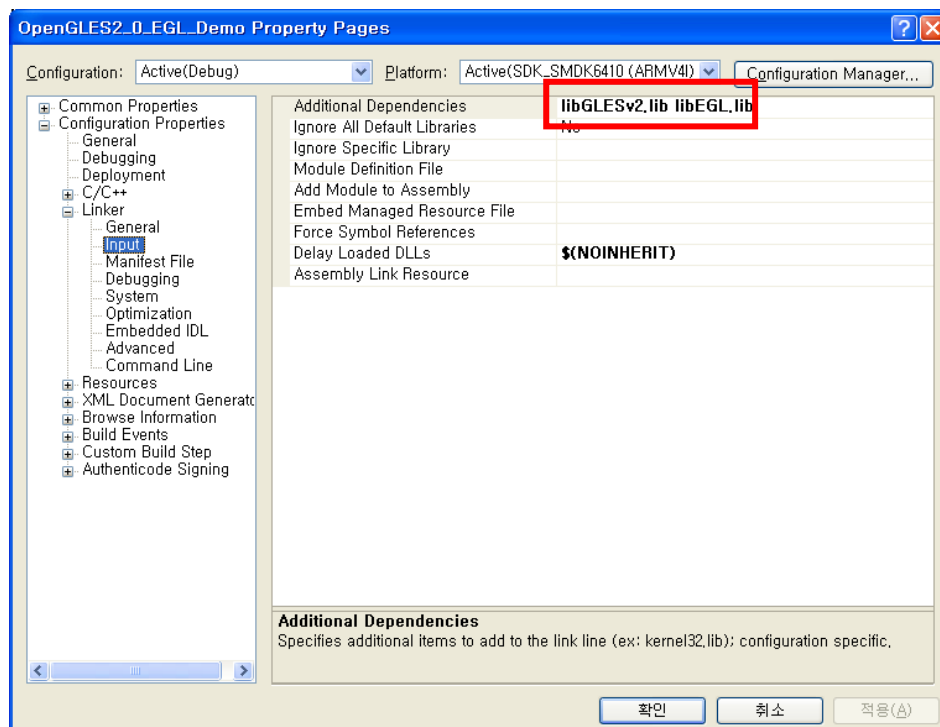


Figure 2 Setting Property for OpenGLS2.0 in VS2005

If you need to use OpenGL ES 1.1, then you need to input libGLSv1_CM.lib instead of libGLSv2.lib.

3.4 Shader Compile

You need to use orion compiler for compiling shader. You can execute attached compiler on MS Windows XP and VISTA.

Ex) orion -O -f <Fragment Shader File>
orion -O -v <Vertex Shader File>
orion -O -a -f <Fragment Shader ASM File>
orion -O -a -v <Fragment Shader ASM File>

If you type just "orion", you can see more detail information about this shader compiler.

4 Execution guide

4.1 Dll location

libEGL.dll, libGLESv1_CM.dll and libGLESv2.dll should be in \Windows directory or same directory with your application. Second has higher priority.

5 Samples

5.1 OpenGL ES 1.1 Demo Application

The location is (samples\OPENGL ES\OpenGL ES1_1_EGL_Demo)

Very simple opengles demo. You can get example about OpenGL ES application and compile environment from source code.

You can modify line 80 "int selectedDemo" from 0 to 7.

5.2 OpenGL ES 2.0 Demo Application

The location is (samples\OPENGL ES\OpenGL ES2_0_EGL_Demo)

Very simple opengles demo. You can get example about OpenGL ES application and compile environment from source code.

You can modify line 59 "int selectedDemo" from 0 to 2.