

Software Test and Qualification Specification

OpenGL ES1.1

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Filename : Software Test and Qualification Specification.OpenGLES1.1.doc
Version : 1.0.121 External Issue
Issue Date : 14 Oct 2010
Author : PowerVR

Contents

1.	Introduction	3
1.1.	Related Documentation	3
2.	Test Configuration Options	4
2.1.	Test Catalogue	4
2.1.1.	Functional Tests	4
2.1.2.	Stress Tests	5
2.1.3.	Stability Tests	6
2.1.4.	Conformance Tests	6
2.1.5.	Performance Tests	6
2.1.6.	Content Tests	7
2.1.7.	BizDev Content Tests	8

1. Introduction

This document describes the Software Test and Qualification Specification used to test OpenGL ES API implementation on Imagination Technologies IP as deployed in reference hardware.

Note:

This document is a catalogue of tests for the OpenGL ES 1.1 API across platforms and Operating systems. Some of the tests listed in this document may be available only for specific platform and operating system combinations. Hence the selected tests will be listed in the Test and Qualification specs for each driver.

1.1. Related Documentation

Title	Description
OpenGL-ES Specification, Khronos Group, Version 1.0	The specification of the OpenGL-ES 1.0 API
EGL Specification, Khronos Group, Version 1.0	Platform independent OpenGL-ES/Windowing system interface API specification.
OpenGL-ES Specification, Khronos Group, Version 1.1	The specification of the OpenGL-ES API
EGL Specification, Khronos Group, Version 1.1	Platform independent OpenGL-ES/Windowing system interface API specification

2. Test Configuration Options

2.1. Test Catalogue

Note: in the Source column, IMG stands for Imagination Technologies and KHR stands for the Khronos Group.

2.1.1. Functional Tests

ID	Application	Description	Verif.	Source
OES_FN01	Triangles	EGL TDK test, opens, draws two triangles, swaps and closes.	M	IMG

OES_FN04	Rendertotexture	renders geometry to a pbuffer and uses the pbuffer as a texture	M	IMG
OES_FN05	Oglresources	Allocate and de-allocate OpenGL ES resources	A	IMG
OES_FN06	Glextensions	Query and test OGL-ES extensions	A	IMG
OES_FN07	Matrixpalette	Matrixpalette extensions covers: glWeightPointerOES, glMatrixIndexPointerOES, glCurrentPaletteMatrixOES, glLoadPaletteFromModelViewMatrixOES.	M	IMG
OES_FN08	Colormask	Test OpenGL ES colormask abilities	A	IMG
OES_FN09	Oglestextures	Tests all OGLES texture related functions with different parameters.	M	IMG
OES_FN10	Gles1test1	OpenGL-ES unit test that draws 2 spinning triangles on a green background, one textured and the other not textured. Commandline: gles1test1 <no of frames>	M	IMG
OES_FN11	Gles1_texture_stream	OpenGL ES 1.1 unit test for texture streaming	M	IMG

OES_FN15	oglestestkit_ext	OGL-ES TDK test, tests all OpenGL-ES functionalities	A	IMG
OES_FN16	Maxstrided	Additional test that is testing drawing a texture with the maximum size possible.	M	IMG

OES_FN17	State_change_ogles1^	Check time taken by driver to change states. (This feature includes in branch 13 or greater.). This test counts state change time for alpha-test ,alpha blending, fog, vertex pointers.	M	IMG
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Note: Tests marked with (*) are currently available only for MBX platforms.

Tests marked with (^) are currently available for SGX platforms.

2.1.2. Stress Tests

Note: These tests are currently available only for MBX platforms

ID	Application	Description	Verif.	Source
OES_SR01	Systemstress + OGLESVillageMark	Run OGLESVillageMark while under heavy CPU load from systemstress [--sort]	A	IMG
OES_SR02	Systemstress + OGLESVillageMark	Run OGLESVillageMark while a lot of memory is allocated by systemstress [--static]	A	IMG
OES_SR03	Systemstress + OGLESVillageMark	Run OGLESVillageMark while memory is constantly allocated and deallocated by systemstress [--dynamic]	A	IMG
OES_SR07	Multi Context	Two applications (OGLESEvilSkull and OGLESPolybump) are started at the same time and runs for 30 minutes. They both are set up with the default number of pages.	A	IMG
OES_SR08	Multi Context - Parameter Buffer Resize - test 1	Two applications (OGLESEvilSkull and OGLESPolybump) are started at the same time and runs for 30 minutes. EvilSkull is running with 20 pages and Polybump with the default number of pages.	A	IMG
OES_SR09	Multi Context - Parameter Buffer Resize - test 2	One application (OGLESEvilSkull with 20 pages) is running in the background and a second application (OGLESPolybump with default number of pages) is started, stopped and restarted 10 times.	A	IMG
OES_SR10	Multi Context - Parameter Buffer Resize - test 3	One application (OGLESEvilSkull with 20 pages) is running in the background and multiple others (OGLESPolybump default number of pages, OGLESParticles 30 pages, and OGLESMouse 25 pages) are started after each other for 1 minute each. This is done 10 times.	A	IMG

2.1.3. Stability Tests

ID	Application	Description	Verif.	Source
OES_SB01	OGLES SDK Demos	Run all the SDK demos and training courses from the content tests consecutively using a script.	A	IMG
OES_SB02	OGLES SDK Demo	Running one of the content tests for 8 hours	A	IMG

2.1.4. Conformance Tests

ID	Application	Description	Verif.	Source
OES_CC01	Conform	Main conformance test in Khronos suite includes 'mustpass' test. Tests for correct implementation of OpenGL-ES features	A	KHR
OES_CC02	Covgl	Khronos API coverage test. Calls every function in the OpenGL-ES library	A	KHR
OES_CC03	Covegl	Khronos API coverage test. Calls every functions in the EGL library	A	KHR
OES_CC04	Primtest	Khronos Primitive mode coverage test. Test rendering of points, lines, triangles, with modes: anti-aliasing, alpha blending, colour blending, depth testing, dither, fog, hints, lighting, and texture. Checks for internal errors, crashes, etc.	A	KHR

2.1.5. Performance Tests

ID	Application	Description	Verif.	Source
OES_PF02	OGLESVillageMark	PowerVR developed Benchmark - Measures fill-rate.	A	IMG
OES_PF03	OGLESTMark	PowerVR developed Benchmark – Measures the number of frames per seconds while displaying a game scene.	SA	IMG
OES_PF04	3DMarkMobileES1.1 – Samurai	FutureMark Benchmark for 3D graphics performance	SA	Ext
OES_PF05	3DMarkMobileES1.1 – Proxycon	FutureMark Benchmark for 3D graphics performance	SA	Ext
OES_PF10	OGLESGridMark3	Bench0 : Game Scene	A	IMG
OES_PF11	OGLESGridMark3	Bench1 : Polygon Throughput	A	IMG
OES_PF12	OGLESGridMark3	Bench2 : Visible Pixel Fillrate	A	IMG
OES_PF13	OGLESGridMark3	Bench3 : Depth Test Fillrate	A	IMG

ID	Application	Description	Verif.	Source
OES_PF14	OGLESGridMark3	Deprecated	A	IMG
OES_PF15	OGLESGridMark3	Bench5: Effective Pixel Fillrate	A	IMG
OES_PF16	OGLESGridMark3	Bench6 : lighting	A	IMG
OES_PF17	OGLESGridMark3	Bench7 : Peak Hardware Polygon Throughput	A	IMG

2.1.6. Content Tests

ID	Application	Description	Verif.	Source
OES_CT01	OGLESchameleonMan	OGL-ES SDK Demo, shows per-pixel DOT3 lighting and skinning animation with the VGP	SA / A	IMG
OES_CT02	OGLESEvilSkull	OGL-ES SDK Demo, shows geometry morphing	SA / A	IMG
OES_CT03	OGLESFive Spheres	OGL-ES SDK Demo, shows various modes of OpenGL-ES	SA / A	IMG
OES_CT04	OGLESLighting	OGL-ES SDK Demo, Demonstration of lighting with OpenGL-ES	SA / A	IMG
OES_CT05	OGLESMouse	OGL-ES SDK Demo, shows toon shading and animation	SA / A	IMG
OES_CT06	OGLESParticles	OGL-ES SDK Demo, shows physics-based particles with alpha transparency	SA / A	IMG
OES_CT07	OGLESPhantom Mask	OGL-ES SDK Demo, shows spherical harmonics lighting with the VGP	SA / A	IMG
OES_CT08	OGLESPolyBumpls	OGL-ES SDK Demo, demonstrates the use of per-pixel DOT3 lighting	SA / A	IMG
OES_CT09	OGLESShadow Techniques	OGL-ES SDK Demo, demonstrates different methods of rendering shadows	SA / A	IMG
OES_CT11	OGLESSkybox	OGL-ES SDK Demo, shows a balloon in the air inside a skybox	SA / A	IMG
OES_CT12	OGLESTrilinear	OGL-ES SDK Demo, shows the difference between texture filtering modes, including trilinear texturing	SA / A	IMG
OES_CT13	OGLESUserClipPlanes	OGL-ES SDK Demo, shows how to use clip planes.	SA / A	IMG
OES_CT14	OGLESVase	OGL-ES SDK Demo, shows texturing with transparency and environment mapping	SA / A	IMG

ID	Application	Description	Verif.	Source
OES_CT16	OGLESOptimiseMesh	OGL-ES SDK Demo, shows textured model displayed using a non optimized triangle list and an optimized triangle list	SA / A	IMG
OES_CT17	OGLESInitialization	SDK Training course	SA / A	IMG
OES_CT18	OGLESHelloTriangle	SDK Training course	SA / A	IMG
OES_CT19	OGLESIntroducingPVRShell	SDK Training course	S A / A	IMG
OES_CT20	OGLESTexturing	SDK Training course	SA / A	IMG
OES_CT21	OGLESBasicTnL	SDK Training course	SA / A	IMG
OES_CT22	OGLESIntroducingPVRTools	SDK Training course	SA / A	IMG
OES_CT23	OGLESIntroducingPOD	SDK Training course	SA / A	IMG
OES_CT24	OGLESMultitexture	SDK Training course	SA / A	IMG
OES_CT25	OGLESRenderToTexture	SDK Training course	SA / A	IMG
OES_CT26	OGLESAlphaBlend	SDK Training course	SA / A	IMG
OES_CT27	OGLESMatrixPalette	SDK Training course	SA / A	IMG
OES_CT28	OGLESAlphaTest	SDK Training course	SA / A	IMGC
OES_CT29	OGLESAntialiasedLines	SDK Training course	SA / A	IMG
OES_CT30	OGLESSkinning	SDK Training course	SA / A	IMG
OES_CT31	OGLESFur	SDK Training course	SA / A	IMG
OES_CT32	OGLESCoverFlow	SDK Training course	SA / A	IMG

2.1.7. BizDev Content Tests

ID	Application	Description	Verif.	Source
OES_BZ01	OGLESDownTown		SA / A	IMG
OES_BZ02	OGLESMarsBase		SA / A	IMG
OES_BZ03	PVRButterflies		SA / A	IMG
OES_BZ04	PVRHenge		SA / A	IMG
OES_BZ05	PVRHurricane		SA / A	IMG
OES_BZ06	PVRRaceTrack		SA / A	IMG
OES_BZ07	PVRRefMap		SA / A	IMG

ID	Application	Description	Verif.	Source
OES_BZ08	PVRRobots		SA / A	IMG