

RN 4 03 00 02

Release Notes for release 4.03.00.02

Introduction

This release includes the Linux graphics drivers for the 387x/389x/OMAP35x/AM35x/37xx family of chipsets. The Graphics SDK contains documentation, demo programs and tools.

Requirements, Pre-requisites and demo instructions

For software setup and pre-requisites and other instructions, refer to the main pages at, [OMAP35x_Graphics_SDK_Getting_Started_Guide](#)

Features in this release

- [NEW] Workqueue support implementation integrated from IMG DDK 1.6.16.3977.
 - [NEW] Active power management supported on OMAP35x/37x devices.
 - [NEW] make help command updated to show mapping between OMAPES command line option and TI chipset.
 - [NEW] Included pvr2d.h and wsegl.h in the release package under include folder of Graphics SDK root installtion(public versions – with public headers: (MIT-x license)). Qt users should use the included wsegl.h and pvr2d.h
 - [NEW] Included bc_cat.h(with BSD license)in the release package for applications which require to use buffer class streaming extension.
 - [NEW] Unit test report for 387x and 389x is now available in the release package(can be found under unittest folder present at Graphics installation root directory with file name : [Graphics_SDK_4_03_00_02_38xx_Test_report.xls](#))
 - Bug fixes
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Pre-requisites

Kernel(Linux PSP) versions used for validation

- Tested with 2.6.37 kernel release on 389x platfom
 - TI816x(389x) Linux-PSP release 04.00.00.10 (2.6.37)
 - Tested with 2.6.37-rc3 kernel on 387x platfom. Sanity tested with 2.6.37 kernel on 387x platform.
 - TI814x(387x) Linux-PSP Release 04.01.00.02.
 - TI814x(387x) Linux-PSP Release 04.01.00.03 - Sanity tests only.
 - Tested with 2.6.32 kernel on OMAP platforms
 - AM35x Linux PSP Release 03_00_01_06.
 - Display drivers with DSS2 support ie, CONFIG_OMAP2_DSS=y
-

Toolchain

- CodeSourcery 2009q1 toolchain

Filesystem

- Filesystem from SDK package

On 387x and 389x, fbdev module is dependent on the VPSS and Syslink modules. The required versions are listed below. Please refer to Linux-PSP User Guide for details on how to build and install the fbdev module.

HDVPSS Release

- HDVPSS_01_00_01_26

Syslink Release

- 02_00_00_67_alpha2
- 02_00_00_68_Beta1 - Only sanity tested.

```
Need to rebuild proc manager app - procmgrapp_release, not the one
present under the HDVPSS_01_00_01_26 release (procmgrapp)
```

IPC Release

- 1_22_03_23
 - 1_22_04_25 (for syslink version of 02_00_00_68_Beta1)
-

What is supported**Khronos API support**

- OpenGL ES 1.1
- OpenGL ES 2.0
- OpenVG 1.1 (Using CPU for majority of the tasks)
- EGL
- Limited 2D acceleration via PVR2D API

Window Systems

The following Window Systems are supported, on Linux:

- Null Window System (with Pixmap support)

Buffer Swap modes

The following modes of buffer swapping are supported,

- Front (1 buffer), Flip (chained buffers)

Selection of these modes is done via entries in /etc/powervr.ini. Please refer to Online GSG (Main page).

Extensions

- BufferClass extension support is enabled. All other entries can be queried using standard EGL APIs.
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What is not supported

- Power Management features are not fully validated. Active power management support available on OMAP35x/37x platforms only.
 - Kernel (for OMAP35x/AM35x/37xx) configured without DSS2 framework support will not work with the current display class driver.
 - PIXMAP - Fbdev dependancy removal is not supported in FLIP buffer swapping mode.
 - X11 window system has not been validated.
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Additional Packages

Demonstration packages for Texture streaming extension are available at the below link,

- [OpenGL_Texture_Streaming_-_bc-cat_User_Guide](#)

Benchmarking packages for SGX functionalities and APIs are available at,

- <https://gforge.ti.com/gf/project/gleslayer/>

Fixed in this Release

- [SDOCM00079460] : Set the correct sgx clock frequency required for PVRTune
- [SDOCM00079461] : Remove PVRSRV_ERROR_GENERIC from Graphics SDK source
- [SDOCM00079462] : Enable APM for OMAP35xx/37xx devices
- [SDOCM00079463] : SGX Debug driver issue on Netra against 2.6.37 kernel
- [SDOCM00079464] : Crash observed when get_clk() returns error by passing an invalid SGX clock name in IMG code
- [SDOCM00079465] : Add SGX 1.0.3 core specific fixes.
- [SDOCM00079466] : bc_cat driver -Destroy the allocated buffers during close/release
- [SDOCM00079467] : bc_cat driver-Check for kernel version and declare/define bc_ioctl() accordingly

Limitations/ Known Issues

- [SDOCM00061522] FrontEGL mode of swapping buffers may show artifacts (ex, lines at the top), when operating with DVI output.
 - [SDOCM00061276] Texturing via glTexImage2D will result in CPU utilisation depending on size of texture.
 - Using OpenVG will result in CPU utilisation depending on complexity of Vector Graphics operations.
 - [SDOCM00063852] bc_example.ko is not installed as it is not supported, but default rc.pvr from IMG will refer to this. Please use updated bufferclass_ti driver.
 - [SDOCM00063807] All SDK demos should be exited by pressing 'q'. Ctrl-C can result in unknown behaviour after the closure.
 - [SDOCM00063803] OGLESShadowTechniques demo will hang and reboot is required.
 - [SDOCM00068272],[SDOCM00068322] Blue line on top of DVI display for PolyBump demo, thin line on top for sgx_render_flip_test demo
 - [SDOCM00079480] Kernel lockup observed with OGLES2SkyBox2 demo in flip mode on OMAP35x (with SGX 530 core 1.0.3 only). Works fine on OMAP35x(with SGX 530 core 1.2.1) and all other platforms.
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Installation and Usage

Please look for detailed installation and usage instructions in the Getting Started Guide (Main page).

Contents

The folders in the installed package contain binaries for several family of devices containing the SGX530 core. Brief description of these folders is below.

Graphics SDK folder contents

	Folder Name	Description	Used by
1	gfx_dbg_es2.x / gfx_rel_es2.x	Debug/Release binaries for platforms having SGX core revision 1.0.3	(OMAP35x ES version 2.0) How to check?
2	gfx_dbg_es3.x / gfx_rel_es3.x	Debug/Release binaries for platforms having SGX core revision 1.2.1	(OMAP35x ES version 3.1) How to check?
3	gfx_dbg_es5.x / gfx_rel_es5.x	Debug/Release binaries for platforms having SGX core revision 1.2.5	(AM37xx/DM37xx) How to check?
4	gfx_dbg_es6.x / gfx_rel_es6.x	Debug/Release binaries for 38xx(387x,389x) devices (SGX core revision 1.2.5)	38xxHow to check?
5	GFX_Linux_KM	Source for Graphics Kernel Modules	Contains kernel dependent code, changes depending on Linux kernel used
6	GFX_Linux_SDK	Demos, Training courses, PVR Tools, classes and header files	Used for building new applications (Available only in the SDK package, not in the BIN package)
7	include	Contains updated header file for GL extensions, specifically the buffer class streaming extension	Useful for video texturing applications involving bufferclass driver
8	tools	Contains devmem2, and other packages	Useful for running/debugging/benchmarking of Graphics SDK

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