Intel® Embedded Media and Graphics Driver, EFI Video Driver, and Video BIOS v1.14 for Windows* Embedded Compact 7

Specification Update

April 2012

Notice: The Intel® Embedded Media and Graphics Drivers may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request.

Contents

Tables

Revision History

Date	Revision	Description
April 2012	003	Errata updated for the Intel® Embedded Media and Graphics Driver, EFI Video Driver, and Video BIOS v1.14 for Windows* Embedded Compact 7.
November 2011	002	Errata updated for the Intel® Embedded Media and Graphics Driver, EFI Video Driver, and Video BIOS v1.10 for Windows* Embedded Compact 7.
July 2011	001	Errata updated for the Intel® Embedded Media and Graphics Driver, EFI Video Driver, and Video BIOS v1.10 Beta for Windows* Embedded Compact 7

Introduction

The Intel® Embedded Media and Graphics Driver, EFI Driver, and Video BIOS (Intel® EMGD) are designed to meet the requirements of embedded applications. Featuring Intel® Dynamic Display Configuration Technology (DDCT), the drivers run on the following Embedded Intel® Architecture (eIA) chipsets:

- Intel® Atom™ Processor E6xx

Intel® EMGD is designed to work with fixed-function systems, such as In-vehicle Infotainment (IVI) devices, Point-of-Sale (POS) devices, ATMs, gaming devices, etc. It can be configured to work with various hardware and software systems and supports Microsoft Windows* and Linux* operating systems, including embedded versions of these operating systems.

Please refer to the *Intel® Embedded Media and Graphics Drive, EFI Video Driver, and Video BIOS User's Guide* and RELNOTES.txt in the software package for a detailed description of the supported features and display devices.

Purpose/Scope/Audience

This document is a compilation of Errata. It is intended for those who need to work with the graphics subsystem. This includes, but is not limited to: platform designers, system BIOS developers, system integrators, original equipment manufacturers (OEMs), system control application developers, as well as end users.

This document may also contain information that was not previously published.

This document provides information on open errata in all supported Intel® EMGD packages for version 1.14 of the Intel® EMGD product. It includes information on the following packages:

- Microsoft Windows Embedded Compact 7

Table 1.   **Affected Documents, Related Documents, and Reference Information**

Title	Number
Intel® Atom™ Processor E6xx Series Specification Update	457843
Intel® Atom™ Processor E6xx Series External Design Specification	433303
Intel® Embedded Media and Graphics Driver, EFI Video Driver, and Video BIOS User Guide	442076
Intel® Embedded Media and Graphics Driver, EFI Video Driver, and Video BIOS Technical Product Specification (TPS)	460826
VESA BIOS Extensions/Display Data Channel Standard, available at the following website: http://www.vesa.org/public/VBE/VBEDDC11.PDF This document provides information on the 4F VBE functions, which are supported by the Intel embedded Video BIOS.	N/A
VESA BIOS Extension (VBE) Core Functions Standard Version 3.0, available at the following website: http://www.vesa.org/public/VBE/vbe3.pdf Contains information on the VESA BIOS Extension (VBE) specification for standard software access to graphics display controllers that support resolutions, color depths, and frame buffer organizations beyond the VGA hardware standard.	N/A

Conventions and Terminology

Table 2.   **Conventions and Terminology**

Term	Definition
Errata (plural) Erratum (singular)	Errata are design defects or errors. These may cause the Intel® Embedded Media and Graphics Driver, EFI Driver, and Video BIOS' behavior to deviate from published specifications. Hardware and software designed to be used with any given release must assume that all errata documented for that release are present on all devices.

Intel® Embedded Media and Graphics Driver, EFI Video Driver, and Video BIOS v1.14 for Windows* Embedded Compact 7
Specification Update
6

April 2012
Document Number: 480302-003US

Summary Tables of Current Product Issue Activity

Table 4 shows the Errata that apply to the Intel® EMGD product. Intel may fix some of the Errata in a future release of the software as noted in Table 3. Table 4 uses the codes listed in Table 3.

Table 3.   Summary Tables Legend

Status Indicator	Column	Definition
Plan Fix	Status	This erratum may be fixed in a future release.
Fixed	Status	This erratum has been previously fixed.
No Fix	Status	There are no plans to fix this erratum.
TBD	Status	This erratum still under investigation. Status to be determined.
A change bar to the left of a table row indicates an item that is either new or modified from the previous version of this Specification Update.		

Table 4.   Errata

ID	Impacted Platform	Package	Errata	Status
203738	Atom E6xx	Windows Embedded Compact 7	Device performance is slow and the system intermittently hangs when rotation (90/270 degrees) and flip is enabled.	No Fix (Hardware limitation)
203917	Atom E6xx	Windows Embedded Compact 7	Microsoft CTK GDI & DDRAW Test Suite Failures.	No Fix (Hardware limitation)
204502	Atom E6xx	Windows Embedded Compact 7	XAML application performance is not smooth and movement updates are jerky.	TBD
204608	Atom E6xx	Windows Embedded Compact 7	QT application fails when using `eglChooseConfig()` to create OGL context.	TBD

Errata

1. Device performance is slow and the system intermittently hangs when rotation (90/270 degrees) and flip is enabled.

Reference #: 203738

Driver: Graphics

Platform: Atom E6xx

Package: Windows Embedded Compact 7

Resolution: On a single display device with rotation (90/270 degrees) and flip enabled, the device performance is slow in accessing folders, etc. in the Windows Embedded Compact 7 image. When SDVO is the primary port of choice, due to low performance, playing video and dragging and dropping objects around the desktop, the system intermittently hangs. This is a hardware limitation and it will not be fixed.

Status: No Fix (Hardware limitation)

2. Microsoft CTK GDI & DDRAW Test Suite Failures.

Reference #: 203917

Driver: Graphics

Platform: Atom E6xx

Package: Windows Embedded Compact 7

Resolution: Hardware has limitation that it does not support creation of YV12 and I420 type off-screen surfaces in video memory. YUV planar render surface allocation is not supported while YUV planar overlay surface allocation is supported.

Status: No Fix (Hardware limitation)

3. XAML application performance is not smooth and movement updates are jerky.

Reference #: 204502

Driver: Graphics

Platform: Atom E6xx

Package: Windows Embedded Compact 7

Resolution: XAML based application visuals are affected. Movement updates and drawing of text by applications on the OGL surface results in jumpy/jerky performance. This issue is under investigation and no workaround has been planned at this time.

Status: TBD

4. QT application fails when using `eglChooseConfig()` to create OGL context.

Reference #: 204608

Driver: Graphics

Platform: Atom E6xx

Package: Windows Embedded Compact 7

Resolution: Qt uses the `eglChooseConfig()` function to create the OpenGL context, but this failed when running under Windows Embedded Compact 7 for all OpenGL apps. This issue is still under investigation and there is no planned workaround at this time.

Status: TBD

Issues Closed in Version 1.14

Issues that have been either resolved or for some other reason are no longer considered open in the current software version are included here.

Table 5. Resolved and Closed Issues (Sheet 1 of 3)

ID	Impacted Platform	Package	Errata	Status
204092	Atom E6xx	Windows Embedded Compact 7	H.264 video format playback failed with SMP enabled.	Fixed
58581	Atom E6xx	Windows Embedded Compact 7	Start button and taskbar corruption appears on any resolution with a depth of 32 bits per pixel.	Closed
58601	Atom E6xx	Windows Embedded Compact 7	Error message appears when trying to generate a texture scheme for cube map textures.	Closed
58602	Atom E6xx	Windows Embedded Compact 7	`GlDrawArrays()` function returns an error.	Closed
58604	Atom E6xx	Windows Embedded Compact 7	`glGetFixedvOES` and `_mesa_GetFloatv` functions are not implemented in the driver.	Closed
58605	Atom E6xx	Windows Embedded Compact 7	The `_mesa_TexGenfv` function does not support the `GL_TEXTURE_GEN_STR_OES` value as the first parameter.	Closed
58606	Atom E6xx	Windows Embedded Compact 7	The `glCheckFramebufferStatusOES()` function does not return the proper error code when the render buffer has been deleted.	Closed
58613	Atom E6xx	Windows Embedded Compact 7	Parameters are not implemented in the driver when controlling the generation of texture coordinates or when enabling or disabling GL capability.	Closed
58615	Atom E6xx	Windows Embedded Compact 7	OpenGL 2.0 polygon(s) are not visible on the display.	Closed

Table 5. **Resolved and Closed Issues (Sheet 2 of 3)**

58616	Atom E6xx	Windows Embedded Compact 7	`LockArraysEXT` and `UnlockArraysEXT` functions are not implemented in the driver.	Closed
58617	Atom E6xx	Windows Embedded Compact 7	ALPHA, GL_RGBA2, GL_RGBA4, and GL_RGBA5_A1 textures from the `glCopyTexImage` and `glTexImage` extensions are drawn incorrectly on the display.	Closed
58624	Atom E6xx	Windows Embedded Compact 7	`glColorPointerEXT` does not generate error.	Closed
58625	Atom E6xx	Windows Embedded Compact 7	`glVertexPointerEXT` function not returning expected value.	Closed
58766	Atom E6xx	Windows Embedded Compact 7	8-bit images do not load on Intel® Atom™ Processor E6xx system.	Closed
58768	Atom E6xx	Windows Embedded Compact 7	Blue corruption on video overlay surface.	Closed
58770	Atom E6xx	Windows Embedded Compact 7	OGL/OGLES applications always remain visible on top of other applications.	Closed
58771	Atom E6xx	Windows Embedded Compact 7	OGL/OGLES applications randomly crash and return "egInitialize() failed" error message.	Closed
58772	Atom E6xx	Windows Embedded Compact 7	OGL/OGLES applications render incorrectly when clipped off the screen.	Closed
58782	Atom E6xx	Windows Embedded Compact 7	MPEG-2 video cannot be switched to full screen mode.	Closed
58783	Atom E6xx	Windows Embedded Compact 7	Display and video lag when an image is rotated and/or flipped.	Closed
58791	Atom E6xx	Windows Embedded Compact 7	When playing an MPEG-2, MPEG-4, or H.264 video file with alpha blending enabled, the background screen does not darken as expected.	Closed
58833	Atom E6xx	Windows Embedded Compact 7	MPEG-2 and H.264 Video Player crashes with error message.	Closed
58843	Atom E6xx	Windows Embedded Compact 7	CTK GDI and DDRAW suite failures.	Closed
59058	Atom E6xx	Windows Embedded Compact 7	Paused video window becomes black when a second video is started.	Closed
59068	Atom E6xx	Windows Embedded Compact 7	Video player crashes when either MPEG-2, MPEG-4 or H.264 files are selected for play in 8-bit mode.	Closed
59074	Atom E6xx	Windows Embedded Compact 7	Overlay tests for YUV pixel formats fail.	Closed
59090	Atom E6xx	Windows Embedded Compact 7	Dragging a video causes scaling issues.	Closed
59192	Atom E6xx	Windows Embedded Compact 7	Specific MPEG-2 video files fail to play and PlayWnd video player exits.	Closed

Table 5.   **Resolved and Closed Issues (Sheet 3 of 3)**

59201	Atom E6xx	Windows Embedded Compact 7	Execution of 3D Mark Mobile "Unified Shader" application freezes the target system.	Closed
59204	Atom E6xx	Windows Embedded Compact 7	Corruptions appear during execution "Hoverjet" and "Post processing" 3D Mark Mobile applications.	Closed
59206	Atom E6xx	Windows Embedded Compact 7	Second video does not render on primary display while playing two videos in Vertical Extended mode.	Closed
59225	Atom E6xx	Windows Embedded Compact 7	Incorrect frame buffer scaling on LVDS screen.	Closed
59231	Atom E6xx	Windows Embedded Compact 7	Wrong image in the bottom portion of video screen when PlayWnd is overlapping on two screens in Vertical Extended mode.	Closed
59232	Atom E6xx	Windows Embedded Compact 7	A portion of the video on a secondary display is blacked out in Vertical Extended mode.	Closed
59236	Atom E6xx	Windows Embedded Compact 7	White frame corruption appears briefly when dragging, minimizing, or maximizing OGL/OGLES applications.	Closed
59243	Atom E6xx	Windows Embedded Compact 7	Planet9 application shows high CPU utilization.	Closed
59244	Atom E6xx	Windows Embedded Compact 7	Lagging during execution Second Overlay test case.	Closed
59249	Atom E6xx	Windows Embedded Compact 7	Gamma, brightness, and contrast settings do not appear to affect the display output for 16- and 32-bit display configurations.	Closed
59250	Atom E6xx	Windows Embedded Compact 7	Green corruption on MPEG-4 videos.	Closed
59251	Atom E6xx	Windows Embedded Compact 7	Brief green frame of corruption on the primary display's video overlay during simultaneous playback of two video streams (one in each display).	Closed
59274	Atom E6xx	Windows Embedded Compact 7	Video moving completely off the desktop towards the bottom causes system to crash.	Closed
59281	Atom E6xx	Windows Embedded Compact 7	Video overlay and audio stutter when switching to full screen and back to original size.	Closed
59297	Atom E6xx	Windows Embedded Compact 7	Display corruption when Rendered Scaling is enabled.	Closed
59303	Atom E6xx	Windows Embedded Compact 7	Video freezes when transitioning to full screen mode during rotation.	Closed

Intel® EMGD—Issues Closed in Version 1.14