



Release 295 Graphics Drivers for Windows - Version 295.73

RN-W29573-01v01 | February 21, 2012
Windows Vista / Windows 7

Release Notes



TABLE OF CONTENTS

| | | |
|----------|--|----------|
| 1 | Introduction to Release Notes | 1 |
| | Structure of the Document | 1 |
| | Changes in this Edition | 1 |
| 2 | Release 295 Driver Changes | 2 |
| | Version 295.73 Highlights | 3 |
| | What's New in Release 295 | 3 |
| | What's New in Version 295.73 | 3 |
| | Limitations in This Release | 6 |
| | Advanced Driver Information | 7 |
| | Changes and Fixed Issues in Version 295.73..... | 9 |
| | Changes and Fixed Issues in Version 295.51..... | 10 |
| | Open Issues in Version 295.73 | 11 |
| | Windows Vista/Windows 7 32-bit Issues..... | 11 |
| | Windows Vista/Windows 7 64-bit Issues..... | 12 |
| | Not NVIDIA Issues..... | 16 |
| | Windows Vista Considerations | 16 |
| | Windows 7 Considerations..... | 16 |
| | Unsupported Features..... | 17 |
| | OpenGL Application Issues | 18 |
| | Application Issues..... | 19 |
| | Operating System Issues | 24 |
| | Known Product Limitations | 25 |
| | 3D Vision USB Driver Does Not Get Installed..... | 26 |
| | No PhysX Acceleration Using the GPU | 26 |
| | NVIDIA PhysX System Software Cannot be Installed or Uninstalled in Windows Safe Mode | 27 |
| | 3DMark 11 Does not Run in Stereoscopic 3D Mode..... | 27 |
| | Previous Driver Files Remain After Overinstalling with Release 256 or Earlier Drivers | 27 |
| | Do not Use Windows Rollback for Graphics Drivers..... | 28 |
| | Uninstalling Drivers Using Device Manager is not Supported..... | 28 |
| | Changing the Primary Display Across SLI GPUs Takes Longer than Expected | 28 |

TABLE OF CONTENTS

| | |
|--|-----------|
| Understanding the DirectX Version Shown in the NVIDIA System Information Window | 29 |
| Using HDMI Audio with Displays that have a High Native Resolution ... | 29 |
| Using HDMI Displays that do not Support Audio | 30 |
| Using HDMI/DisplayPort Audio in Dualview or Clone Mode Configurations | 31 |
| Flat Panel Scaling Controls are Non-functional for Some TV Modes for Some Displays..... | 31 |
| GPU Runs at a High Performance Level (full clock speeds) in Multi-display Modes | 32 |
| GeForce GTX 295 Fan Control Does not Function With NVIDIA Control Panel Performance Group version 6.03.06.00 | 32 |
| 1280x1024 @ 60 Hz not Available on BenQ FP241W Monitors | 32 |
| Image Sharpening Control not Available with GeForce 8 Series and later GPUs | 32 |
| Gigabyte GA-6BX Motherboard | 33 |
| 3 The Release 295 Driver | 34 |
| About the Release 295 Driver | 34 |
| Hardware and Software Support..... | 35 |
| Supported Operating Systems..... | 35 |
| Supported NVIDIA Desktop Products | 35 |
| Supported NVIDIA Notebook Products | 40 |
| Supported Languages..... | 44 |
| Driver Installation..... | 44 |
| Minimum Hard Disk Space | 44 |
| Before You Begin | 45 |
| Installation Instructions..... | 45 |
| Appendix A: Mode Support for Windows | 47 |
| General Mode Support Information..... | 48 |
| Understanding the Mode Format | 49 |
| GeForce 500 and 400 , 300, 200, 100, 9 Series, 8 Series, 7 Series, 6 Series, and nForce 7xx/6xx GPUs | 50 |
| GeForce 9M, 8M, 100M, 200M, 300M, 400M, 500M Series, and Quadro NVS and Quadro FX Notebook GPUs | 52 |
| Modes Supported by TV Encoders | 54 |

LIST OF TABLES

| | | |
|-----------|--|----|
| Table 3.1 | Supported NVIDIA Desktop GPUs | 35 |
| Table 3.2 | Supported NVIDIA Notebook GPUs | 40 |
| Table 3.3 | Supported NVIDIA NVS and Quadro NVS M GPUs | 42 |
| Table 3.4 | Supported NVIDIA Quadro M and Quadro FX M GPUs | 43 |
| Table A.1 | Modes Supported for High Resolution Displays | 48 |
| Table A.2 | Non-standard Modes Supported | 48 |
| Table A.3 | Mode Support for S-Video and Composite Out | 54 |
| Table A.4 | Mode Support for Component YPrPb Out and DVI Out | 54 |

01 INTRODUCTION TO RELEASE NOTES

This edition of *Release Notes* describes the Release 295 family of graphics drivers (versions 295.xx to 299.xx) for Microsoft® Windows® Vista/Windows 7 . NVIDIA provides these notes to describe performance improvements and bug fixes in each documented version of the driver.

Structure of the Document

This document is organized in the following sections:

- ▶ [“Release 295 Driver Changes” on page 2](#) gives a summary of changes, and fixed and open issues in this version.
- ▶ [“The Release 295 Driver” on page 34](#) describes the NVIDIA products and languages supported by this driver, the system requirements, and how to install the driver.
- ▶ [“Mode Support for Windows” on page 47](#) lists the default resolutions supported by the driver.

Changes in this Edition

This edition of the *Release Notes* for Windows Vista/Windows 7 includes information about NVIDIA graphics driver version 295.73, and lists changes made to the driver since the Release 290 driver version 290.53. These changes are discussed beginning with the chapter [“Release 295 Driver Changes” on page 2](#).

02 RELEASE 295 DRIVER CHANGES

This chapter describes open issues for version 295.73, and resolved issues and driver enhancements for versions of the Release 295 driver up to version 295.73. The chapter contains these sections:

- ▶ “Version 295.73 Highlights” on page 3
- ▶ “Changes and Fixed Issues in Version 295.73” on page 9
- ▶ “Changes and Fixed Issues in Version 295.51” on page 10
- ▶ “Open Issues in Version 295.73” on page 11
- ▶ “Not NVIDIA Issues” on page 16
- ▶ “Known Product Limitations” on page 25

Version 295.73 Highlights

This section provides highlights of version 295.73 of the NVIDIA Release 295 Driver for Windows Vista/Windows 7.

- ▶ [What's New in Release 295](#)
- ▶ [What's New in Version 295.73](#)
- ▶ [Limitations in This Release](#)
- ▶ [Advanced Driver Information](#)

What's New in Release 295

The section summarizes the following driver changes in Release 295:

GeForce

- ▶ Improved stability and performance for several games and applications

3D Stereo

- ▶ Improved windowed stereo support.
- ▶ Improved wired stereo glasses support.

Quadro

- ▶ **256 GB Virtual Space**

OpenGL and CUDA users can now take full advantage of applications that utilize 256 GB of system memory.

- ▶ **nView on Optimus**

nView is now available for Quadro Optimus notebooks.

What's New in Version 295.73

NVIDIA PhysX System Software

- ▶ This driver package installs NVIDIA PhysX System Software v9.12.0209.

NVIDIA GPU PhysX acceleration is available only on systems with GeForce 8-series and later GPUs with a minimum of 256MB dedicated graphics memory.

NVIDIA GPU PhysX acceleration is not available if there is a non-NVIDIA graphics processor in the system, even if it is not used for rendering.

HD Audio Driver

- ▶ This driver package installs the HD audio driver, version 1.3.12.0.

Ambient Occlusion

- ▶ Added and updated ambient occlusion support for:
 - Diablo III
 - The Elder Scrolls V: Skyrim
 - Call of Duty: Modern Warfare 3

SLI Profiles

- ▶ Updated SLI profiles for
 - Mass Effect 3
 - Kingdoms of Amalur: Reckoning
 - The Darkness II
 - F1 2011
 - Oil Rush
 - Red Faction: Armageddon
 - 7554
 - Trine 2
 - WRC 2: FIA World Rally Championship 2011
 - Afterfall: InSanity.
 - ArcheAge
 - Core Blaze

3D Vision

- ▶ Adds support for 3D Vision windowed mode on DLP HDTVs and on *Optimized for GeForce* passive 3D monitors
- ▶ Adds or updates 3D Vision profiles for:
 - The Adventures of Tintin – rated Good
 - Afterfall: Insanity – rated Fair
 - ANNO 2070 - rated Not Recommended
 - Apache: Air Assault – rated Fair
 - Black Prophecy – rated Not Recommended
 - Chaos Online – rated Fair

- Choplifter HD - rated Good
- Cities XL 2012 - rated Good
- Da Vinci Online – rated Fair
- Dino D-Day - rated Good
- DotA 2 – rating upgraded to Fair
- Dungeon and Dragons: Daggerdale – rated Fair
- Edge - rated Excellent
- Ferrari Project – rated Not Recommended
- The First Templar – rated Fair
- Fractal – rated Excellent
- FreeStyle 2 – rated Good
- The Haunted Halls Reach – rated Excellent
- Insane 2 - rated Excellent
- King Arthur II – rated Not Recommended
- Kingdoms of Amalur: Reckoning – rated Fair
- Kong Fu Ying Xiong – rated Fair
- Love Beat – rated Good
- Marvel Super Hero Squad Online – rated Good
- Microsoft Flight – rated Fair
- Perpetuum – rated Fair
- Post Apocalyptic Mayhem – rated Fair
- Prototype 2 – rated Fair
- Q.U.B.E. – rated Excellent
- Quan Qiu Shi Ming – rated Excellent
- Red Bull X-Fighters - rated Excellent
- rFactor 2 (mod mode) – rated Good and updated convergence
- Risen 2: Dark Waters - rated Fair
- Saints Row: The Third – Rated Not Recommended
- Shadow Company: Left for Dead – rated Not Recommended
- Special Force – Rated Good
- Tera – rated Good
- Top Gun: Hard Lock – rated Not Recommended

- Tropico 4 – rated Good
- Worms Blast – rated Good

Fixed Issues

- See [“Changes and Fixed Issues in Version 295.73” on page 9](#) for a list of other changes and resolved issues in this driver version.

Limitations in This Release

The following are features that are not currently supported or have limited support in this driver release:

- **Surround Gaming with 3-way SLI**

Surround gaming is not supported on a 3-way SLI system using GeForce GTX 200 series GPUs.

- **NVIDIA Control Panel Display Category**

The Graph tab on the Adjust Desktop Color Settings page is not available.

- **Hybrid Power**

Support for Hybrid Power, a Hybrid SLI technology, is discontinued and not available with this driver.

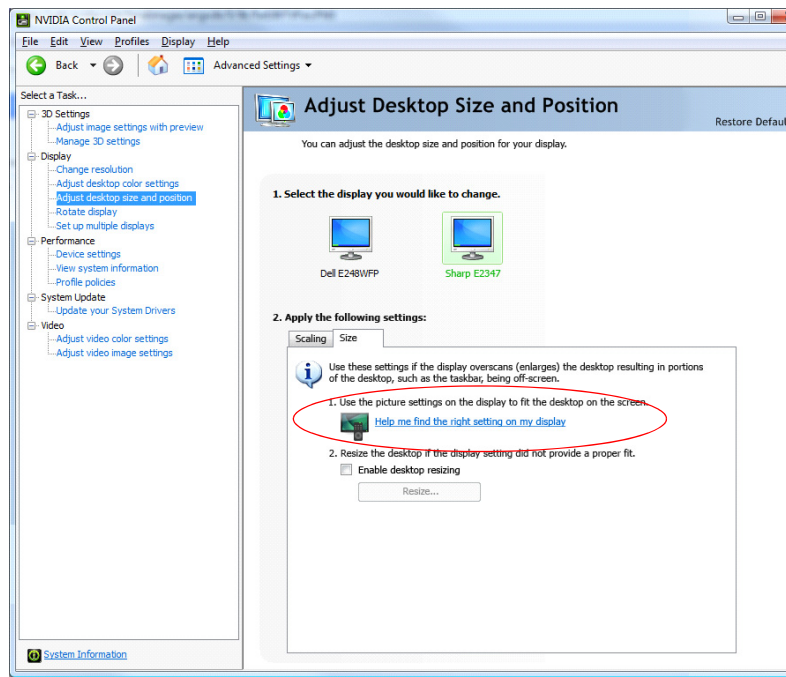
Advanced Driver Information

This section contains the following additional information about the driver:

- [Help for Resizing Your HDTV Desktop](#)
- [Understanding Dynamic GPU Performance Mode](#)

Help for Resizing Your HDTV Desktop

The best way to resize the screen in order to view the entire content is to use the controls provided by the display hardware. Click the link on the Size tab to view a guide to changing the settings on your display hardware.

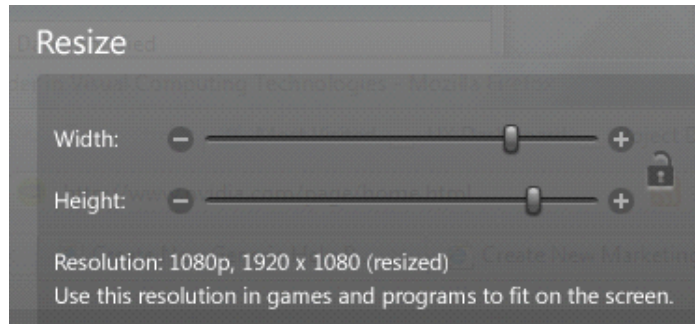


The resize controls on the NVIDIA Control Panel are provided in case satisfactory results cannot be achieved using the controls on the display.

After resizing the HDTV desktop using the NVIDIA Control Panel Resize controls, the new custom resolution created is now added to the list of available resolutions for that display, and also added to the resolution list within the game or application.

In Release 190 and later drivers, the method for resizing the HDTV desktop has changed to provide better image quality when applying underscan. This method results in a new custom resolution being created which needs to be selected from games or applications to apply the resizing. In the example displayed in the following screen shot, the underscan has created a new resolution (1216x682). Although this resolution looks

different, it is still in HD format. Remember to select this resolution in your game or other application in order to take advantage of it.



Note: Some games or applications may not support the new resolution.

Understanding Dynamic GPU Performance Mode

With the Release 280 drivers, NVIDIA GPU clock speeds will increase more quickly in response to increased graphics demands. Conversely, with lower graphics use the GPU clock speed slows down more quickly, conserving as much power as possible.

In the Release 280 drivers, some users reported a noticeable fluctuation in clock speeds while engaging in various tasks on the PC. With the Release 285 and later drivers, adjustments have been made to reduce the sensitivity to levels similar to the R275 driver.

Changes and Fixed Issues in Version 295.73

The following sections list the important changes and the most common issues resolved since version 295.51. This list is only a subset of the total number of changes made in this driver version. The NVIDIA bug number is provided for reference.

- ▶ [NVIDIA Control Panel]: On the *Manage 3D Settings* page, if an executable name is added when the same file name is used for another game, only one game appears in the list of custom profiles and the correct settings are not applied. [917643]
- ▶ [NVIDIA Control Panel][Unigine]: From the NVIDIA Control Panel->Manage 3D Settings page->Program Settings tab, when selecting any Unigine application that includes “unigine.exe” in the title, the selection switches to “Unigine Engine. [930685]
- ▶ [Notebook] [Optimus] [Elder Scrolls V: Skyrim]: The game does not load on an Optimus notebook. [929353]
- ▶ [Notebook] [Cyberlink MediaShow Espresso]: After using the NVIDIA Control Panel to set the preferred graphics processor for Cyberlink MediaShow Espresso, the application’s hardware encoding state overrides the preference. [895999]
- ▶ GeForce 500 Series: Homefront (DirectX 11)–the application crashes after switching from Windows mode to Full-screen mode. [842180]
- ▶ [GeForce 200M series (notebook)] After deselecting “CUDA-GPUs” from the NVIDIA Control Panel->*Manage 3D Settings* page->*Global Settings*, the *Set PhysX Configuration* page still lists GPUs. [898084]
- ▶ ION: The HDMI display turns blank after rotating the desktop. [667944]

Changes and Fixed Issues in Version 295.51

The following sections list the important changes and the most common issues resolved since version 290.53. This list is only a subset of the total number of changes made in this driver version. The NVIDIA bug number is provided for reference.

- ▶ [GeForce 500/400 series]: Fixed the occurrence of some “Display driver stopped responding” error messages that appeared when playing multiple videos. [915993]
- ▶ [GeForce GTX 590]: The GPU fan randomly spikes to 100% and then takes a few seconds to return to normal. [895797]
- ▶ [NVIDIA Control Panel]: With extended mode enabled, there is no edit and delete option on the NVIDIA Control Panel-> Change Resolution->Customize window after creating a custom resolution.[851254]
- ▶ [NVIDIA Control Panel]: On the *Manage 3D Settings* page, if an executable name is added when the same file name is used for another game, only one game appears in the list of custom profiles and the correct settings are not applied. [917643]
- ▶ [NVIDIA Control Panel] [Windows Vista only]: When attempting to set a 480p or 720p HD resolution at 59Hz using the NVIDIA Control Panel, the PC resolution may get applied instead. [908974]
- ▶ [Sony VAIO notebook]: When playing 3D Blu-ray content using PowerDVD in windowed mode, the video is not in stereoscopic 3D. [872745]
- ▶ [GeForce 8400M (notebook)]: Full-screen video playback of Flash content at 1080p is choppy. [885833]
- ▶ [SLI], [Test Drive Unlimited 2]: With SLI enabled and in-game V-Sync turned on, there is geometric corruption in the game. [892229]
- ▶ [SLI] [GeForce GTX 400/500 series][Formula 1]: After installing the 1.02 update for the game, SLI performance drops when there are other cars on the track. [919612]
- ▶ [SLI][GeForce GTX 500 series] [3DTV Play]: “3D Vision Wizard Setup Error” occurs while running the 3DTV Play Wizard in Dualview mode. [921557]

Open Issues in Version 295.73

As with every released driver, version 295.73 of the Release 295 driver has open issues and enhancement requests associated with it. This section includes lists of issues that are either not fixed or not implemented in this version. Some problems listed may not have been thoroughly investigated and, in fact, may not be NVIDIA issues. Others may have workaround solutions.

For notebook computers, issues can be system-specific and may not be seen on your particular notebook.

► “Windows Vista/Windows 7 32-bit Issues” on page 11

► “Windows Vista/Windows 7 64-bit Issues” on page 12

Windows Vista/Windows 7 32-bit Issues

Single GPU Issues

- [Apple Macbook]: With an external display connected, the connector type indicated in the NVIDIA Control Panel->Change Resolution page is incorrect. [913185]
- [NVIDIA Control Panel]: After over-installing the driver, the Manage 3D Settings page shows the list of global presets, which should appear only with NVIDIA Quadro cards. [918068]
- [NVIDIA Control Panel]: After changing the scaling using the NVIDIA Control Panel->Adjust Desktop Size and Position page, the settings do not revert back when clicking **Cancel**. [860129]

GeForce 500 Series

- [GeForce 500 series] [Need for Speed: The Run]: During the race the sun flickers and there are bright blips and black patches. [909577]
- GeForce 500 Series: Metro 2033—light bloom increases and decreases throughout the game at light sources such as bulbs, lanterns, or fire. [846214]
- [GeForce 500M series (Notebook)][3D Stereo]: After installing the 3D Vision software, stereoscopic 3D is not enabled. [887875]

GeForce 400 Series

- [GeForce GTX 400 series]: The NVIDIA Control Panel does not detect a display hotplugged to the VGA connector. [923778]

To detect the display, perform a device scan from the Windows Device Manager.

GeForce 200 Series GPUs

- ▶ GeForce 200/200M series (notebook and desktop): DVD playback flickers and is not in stereoscopic 3D when using the NVIDIA 3D Vision player. [862445]

GeForce 8/7 Series GPUs

- ▶ GeForce 8600: HD resolutions higher than 720p are not available.[308627]
- ▶ GeForce 7900 GS: With an analog display connected in Composite mode, the signal format cannot be set to PAL. [848419]

Multi-GPU Issues

- ▶ [QuadSLI] [GeForce GTX 295]: "SLI connector is missing" balloon pops up even if the SLI bridge connector is attached.[919269]
- ▶ [SLI], GeForce GTX 200M series: When one of the GPUs is dedicated to PhysX, the NVIDIA Control Panel still indicates that SLI is enabled. [890342]
- ▶ [SLI], GeForce 400 series: After installing the driver over a previously installed driver, the resolution switches to 800x600. [768919]

Windows Vista/Windows 7 64-bit Issues

Single GPU Issues

- ▶ [Notebook]: The [Fn+F10] hot keys for switching between multi-display configurations do not work. [925467]
- ▶ [NVIDIA Control Panel]: After changing the scaling using the NVIDIA Control Panel->Adjust Desktop Size and Position page, the settings do not revert back when clicking **Cancel**. [860129]
- ▶ When setting a custom resolution on the secondary Dualview (extended mode) display, the display goes blank. [915624]

GeForce 500 Series

- ▶ [GeForce 500 series] [Stereoscopic 3D][Two World 2]: The application crashes when switching to windowed mode with stereoscopic 3D enabled. [909749]
- ▶ [GeForce 500 series] [Need for Speed: The Run]: During the race the sun flickers and there are bright blips and black patches. [909577]
- ▶ GeForce 500M series (Notebook), 3D Vision: Battlefield-Bad Company 2—when played with stereoscopic 3D enabled, there is a drop in performance going from full-screen to windowed mode. [880762]
- ▶ [GeForce 500M series (Notebook)][3D Vision]: After installing the 3D Vision software, stereoscopic 3D is not enabled. [887875]
- ▶ GeForce 500 series: Deus Ex: Human Revolution—some objects have a grainy texture when in-game antialiasing is set to MLAA. [861713]

- ▶ GeForce 500 series: Deus Ex—there is corruption on the ground in later levels of the game. [871486]
- ▶ GeForce 500 Series: Metro 2033—light bloom increases and decreases throughout the game at light sources such as bulbs, lanterns, or fire. [846214]
- ▶ GeForce 500/400 series, 3D Vision: Windows Aero cannot be turned ON if windowed stereoscopic 3D is ON. [812662]
- ▶ GeForce 500/400 series, 3DVision: Homefront Heaven (DirectX 11) benchmark—stereoscopic 3D cannot be enabled in windowed mode. [812600]
- ▶ GeForce GTX 580: HAWX—during the game, an outline of an air plane appears in the upper left corner of the screen after pressing Alt+Tab. [746186]

GeForce 400 Series

- ▶ [GeForce GTX 400 series]: The NVIDIA Control Panel does not detect a display hotplugged to the VGA connector. [923778]
To detect the display, perform a device scan from the Windows Device Manager.
- ▶ GeForce 400 series: After installing the VGA driver and then choosing the ‘restart later’ option, the display goes blank when subsequently installing the NVIDIA driver. [890299]
- ▶ GeForce 400 series: Total War: Shogun 2 –the sun and surrounding area within the game flickers. [807036]

GeForce 200 Series

- ▶ [GeForce 200 series][Windows Media Center]: With the resolution set to 1080p, a “Display driver stopped responding” message appears when playing a video using Windows Media Center. [930814]
- ▶ GeForce 200/200M series (notebook and desktop): DVD playback flickers and is not in stereoscopic 3D when using the NVIDIA 3DVision player. [862445]

GeForce 7/8/9 Series

- ▶ [GeForce 9800 GTX] [Battlefield 3]: With ambient occlusion set to SSAO and Deferred AA set to 2x or 4x AA in the in-game settings, there is grayish-black textured shadow corruption in the game. [919427]
- ▶ GeForce 7900 GS: With an analog display connected in Composite mode, the signal format cannot be set to PAL. [848419]

NVS Series

- ▶ NVS 4200M, Optimus: F1 2011—the game hangs while selecting "Quit To Main Menu" during gameplay. [879537]

Multi-GPU Issues

- ▶ [SLI], [Company of Heroes: Tales of Valor]: With SLI enabled, there is heavy flickering in the game after switching from windowed mode to full-screen mode. [892264]

- [3D Surround] With four displays connected, the displays used for Surround may not match what the Wizard depicts. [816579]
- [3D Surround, 4-way SLI]: The NVIDIA Control Panel->*Configure Displays for Surround* user-assistance screen does not show the correct GPUs to connect the displays on a 4-way SLI system. [865376]

GeForce 500 Series

- [3D Surround, SLI][GeForce GTX 500 series][Batman:Arkham City]: There is heavy flickering in the cutscenes with 3D Surround enabled. [916431]
- [SLI] [GeForce 500 series]: With SLI enabled, the secondary Dualview display may go blank after hot-plugging the DisplayPort monitor and then rebooting the system. [906810]
- [3D Surround, SLI], GeForce 500 Series: With Surround enabled, all displays may not be activated when selecting **Activate All Displays** from the NVIDIA Control Panel->*Set SLI Configuration* page. [905544]

To work around, activate the desired displays using the NVIDIA Control Panel->Set Up Multiple Displays page.

- [3D Surround, SLI], GeForce 500 series: With Surround and SLI enabled, after resuming from suspend mode and then playing video on 5 Internet Explorer tabs, the display driver unloads when disabling SLI. [878245]
- [3D Surround, SLI], GeForce 500 series: Only one display remains active after switching from Surround to Maximize 3D performance. [805322]
- [3D Surround], GeForce 500 series: With 3D Surround enabled, the resolution list in the NVIDIA Control Panel changes when using bezel correction. [801586]
- [3D Surround], 3xGeForce 500/400 Series: When hotplugging a fourth display outside of the GPU Surround group, the Surround resolution (3-wide) switches to a non-Surround resolution (single display). [736859]
- [SLI], GeForce 500 Series: Dirt 3—the game stutters within the menu and occasionally during a race. [834048]
- [SLI], GeForce 500 Series: Dragon Age II (DirectX 11)—shadows flicker in the cutscene when SLI is enabled. [849235]
- [SLI], GeForce GTX 580: Call of Duty: Black Ops—with SLI and AA enabled, high frequency flickering occurs when viewing the in-game sun. [760596]

GeForce 400 Series

- [3D Surround], GeForce 400 series: With three displays connected and enabled, the established display ordering changes after enabling Surround. [762387]
- [SLI], GeForce 400 series: After enabling SLI, the desktop wallpaper re-sizes and some parts of the screen are not accessible. [861194]
- [SLI], GeForce 400 series, Surround gaming: Dragon Age Origins—the game does not render single monitor resolutions correctly when Surround gaming is enabled. [663802]

- ▶ [SLI], GeForce 400 Series, 3D Vision Surround gaming: Switching from *Span display with Surround* mode to *Maximum 3D Performance* sets displays to Clone mode instead of Extend (Dualview) mode. [700863]

GeForce 200 Series

- ▶ [QuadSLI] [GeForce GTX 295]: "SLI connector is missing" balloon pops up even if the SLI bridge connector is attached.[919269]
- ▶ [SLI], [GeForce GTX 200 series]: The display may go blank for close to 30 seconds while disabling SLI. [922557]
- ▶ [SLI], GeForce 200 Series, Surround gaming: Medusa—the game doesn't span completely across the monitors if any resolution other than the native resolution is set. [670390]
- ▶ [SLI], GeForce GTX 285M: After enabling SLI mode, the NVIDIA Control Panel - >Adjust Desktop Size and Position page does not show the connected display images to select. [724229]

Not NVIDIA Issues

This section lists issues that are not due to the NVIDIA driver as well as features that are not meant to be supported by the NVIDIA driver for Windows Vista/Windows 7.

- ▶ “Windows Vista Considerations” on page 16
- ▶ “Windows 7 Considerations” on page 16
- ▶ “Unsupported Features” on page 17
- ▶ “OpenGL Application Issues” on page 18
- ▶ “Application Issues” on page 19
- ▶ “Operating System Issues” on page 24

Windows Vista Considerations

These are behaviors that may be different from Windows XP and are related directly to the Windows Vista operating system.

▶ NVIDIA TurboCache

Windows Vista now controls the allocation of system memory to the GPU for TurboCache functions. The Windows Vista Display Properties pages show the shared system memory (SSM), or how much memory is allocated for NVIDIA GPUs to use for TurboCache.

For more information on graphics memory reporting under Windows Vista, visit <http://www.microsoft.com/whdc/device/display/graphicsmemory.mspx>.

Windows 7 Considerations

Hotplug Action

Unlike the hotplug activity under Windows Vista, the default settings are not applied when a new display is hotplugged, and there is no message balloon alert stating that a new display was detected. Under Windows 7, all display connection and detection events are handled through the Windows 7 Connecting and Configuring Displays (CCD) mechanism.

NVIDIA Control Panel Rotate Display Page

The rotation radio button labels are changed slightly under Windows 7 to be consistent with the Microsoft panel

Table 2.1 NVIDIA Control Panel Rotation Page Radio Buttons

| Clockwise Rotation | Windows 7 Label | Windows Vista Label |
|--------------------|---------------------|---|
| 0 degrees | Landscape | No rotation (Landscape) |
| 90 degrees | Portrait | 90 degrees to the right (Inverted Portrait) |
| 180 degrees | Landscape (flipped) | 180 degree rotation (Inverted landscape) |
| 270 degrees | Portrait (flipped) | 90 degrees to the left (Portrait) |

Limitation

- ▶ When switching the refresh rate from 59 Hz to 60Hz, the refresh rate remains at 59 Hz.
See the Microsoft KB article KB2006076 at <http://support.microsoft.com/kb/2006076>.

Unsupported Features

The following are features and functionality that were available in driver releases supporting Windows XP, but are not—and will not be—available in driver releases for Windows Vista/Windows 7:

- ▶ **High resolution scaling desktop (HRSD)**
- ▶ **MultiView Display Mode** (for NVIDIA Quadro NVS graphics cards)
- ▶ **NVKeystone**
- ▶ **Unified back buffer (UBB) controls**
- ▶ **OpenGL Video Overlays**

This is an operating system limitation.

Vista window manager features will provide new ways of accomplishing overlays, but will require application porting.

- ▶ **Overclocking**

GPU overclocking is no longer supported in the default GPU driver control panel. This feature is available in the NVIDIA System Tools software, which you can download from NVIDIA.com.

- ▶ **GPU Temperature Monitoring**

Temperature monitoring is no longer supported in the default GPU driver control panel. This feature is available in the NVIDIA System Tools software, which you can download from NVIDIA.com.

► **AGP Settings Adjustment**

► **Video Zoom**

- **Pan & Scan** - the process of panning across the desktop in order to display a desktop on a monitor with lower resolution

► **Per-display Desktop Color Setting Adjustments**

For Clone mode, the desktop color setting adjustments through the NVIDIA Control Panel can only be made across all displays in a system, and not on a per-display basis.

► **Per-display Video Color Setting Adjustments**

For Dualview mode, the video color setting adjustments through the NVIDIA Control Panel can only be made across all displays in a system, and not on a per-display basis.

► **Edge Blending**

► **Run display optimization wizard**

► **Run multiple display wizard**

► **Run television setup wizard**

► **nView Horizontal and Vertical Span Modes**

Due to architectural changes in the new Windows Vista Window Display Driver Model (WDDM), span mode cannot be supported in NVIDIA graphics drivers. NVIDIA recommends using the built-in Windows Vista multi-display modes.

► **Display/Connection Wizard** (such as was provided with Windows Media Center Edition)

► **DVD/MPEG Extensions** (such as was provided with Windows Media Center Edition)

► **Audio Extensions** (such as was provided with Windows Media Center Edition)

► **NVIDIA nView Desktop Manager**

The nView Desktop Manager will not be included in drivers for GeForce products.

OpenGL Application Issues

The following are known compatibility issues for OpenGL applications developed under Windows XP:

► **Mixed GDI and OpenGL rendering does not work.**

A number of applications use GDI to render UI components and object highlighting. This is not supported in the Windows Vista driver model.

NVIDIA recommends converting GDI rendering to OpenGL.

The following are some applications that are known to have this issue:

- Maya 7.01

► **Applications, Tools, and Benchmarks not Supported Under Windows Vista**

- GLperf

- 3ds max 8 (later releases may be supported)
 - CATIA V5R15 (V5R16 is supported)
 - PTC's CDRS 2001
- Front buffered rendering may be slow, especially when DWM is enabled.
- Flushing the rendering queue while rendering to the front buffer may cause the window manager to recomposite. Applications should therefore minimize the frequency with which they flush the rendering queue.

Application Issues

- Adobe Flash 10.x/11.x–1080p video content stutters during browser playback in full-screen mode.

The issue is resolved with Flash 11.0.1.83 and later.

- GeForce 500 Series: Crysis 2 (DirectX 11 mode)–with 16x Anisotropic filtering set using the NVIDIA Control Panel, there is LOD distortion and other issues with AF. [848406]
- GeForce 400 Series: Dirt 2–the game does not show any 3D-rendered objects when multisample antialiasing is increased to 16xCSSAA or higher. [644651]
- GeForce 400 Series: Aliens vs Predator (DirectX 11)–there is ghosting in the sky textures.[660817]
- GeForce 400 Series: S.T.A.L.K.E.R Clear Sky–there is flickering in the background when Sun Shadow is enabled. [667627]
- Dirt2–distant terrain is clipped. [644821]
- Dark Void–if you experience issues playing Dark Void, NVIDIA recommends the following steps:
- a Install all game patches.
Retail box owners can get the patch here:http://download.nvidia.com/downloads/nZone/patches/DarkVoid_PhysX_Update_Patch.exe
 - b From the Windows Control Panel->Add/Remove programs, uninstall **NVIDIA Game System Software 2.8.1**.
 - c From the Windows Control Panel->Add/Remove programs, right-click **NVIDIA PhysX** and then click **Repair**.
- If you still experience problems after performing these steps, then either enable V-Sync or skip the cut-scenes by pressing [**Enter**] twice at the cut-scene.
- Operation Flashpoint: Dragon Rising–the game crashes to the desktop when it starts to load.
- This is an issue in the application–the problem does not occur if you disconnect your internet cable.*
- World of Warcraft–if you have run the 3D Vision setup wizard, then the game automatically enables 3D stereo even after you disable it.

To work around this issue, you must uninstall the 3D Vision driver.

- ▶ Counter Strike—the application crashes to the desktop if the resolution or bit-depth is changed from the in-game video options menu. [416582]

This is an application issue, but the problem does not occur if you change the resolution or bit-depth from the game's main menu and not while in a game.

- ▶ Star Wars: Knights Of The Old Republic 2—the game fails to launch, and an “application has stopped working” error message appears. [420115]

This occurs because the application is not able to interpret the driver version correctly.

- ▶ Tiger Woods PGA Tour 2007—Fly-by shot before each hole blacks-out textures. [274697]

NVIDIA is working with the developer to resolve this issue.

- ▶ City of Heroes—The mouse cursor does not display. [259256]

This is an application issue that can be worked around in full-screen mode by adding “compatible cursors 1” to the City of Heroes desktop shortcut.

NVIDIA is pursuing a fix with the application developer.

- ▶ Sims 2—“Smooth Edges (AA)” option is not available with Release 100 drivers. [272477]

This occurs because of an incorrect driver version check in the application.

NVIDIA has worked around this issue in the operating system by changing the way the driver version is reported to this application.

- ▶ Warhammer 40k Dawn of War (all versions) does not run with Release 100 drivers. [273154]

This occurs because of an incorrect driver version check in the application.

NVIDIA has worked around this issue in the operating system by changing the way the driver version is reported to this application.

- ▶ Need for Speed Carbon—After upgrading with patch 1.3, the game crashes when launched. [290506]

This is an issue with the application patch under Windows Vista.

- ▶ Nascar Simracing—the game crashes when launched. [270792]

This is an issue with the application under Windows Vista.

- ▶ Call of Duty 2—Only solid colors render during game play when 4xAA is enabled. [257454]

The application is not applying antialiasing properly. Please try selecting 2x AA, disabling antialiasing, or using NVIDIA Enhanced application or Override antialiasing modes.

NVIDIA is pursuing a fix with the application developer

- ▶ Age of Empires III—the game has rendering artifacts, such as textured squares for smoke. [258036]

- ▶ Flight Simulator X—pressing Alt+Tab to switch to the desktop does not work. [293729]

- ▶ Everquest 2– with NVIDIA driver versions 100.xx, the following error message appears: [273346]
 "You currently have a (7.15.11.120) video card installed. We recommend that you download version 7772 drivers before playing Everquest."
This occurs because the application is not checking the driver version correctly, but this does not affect game play. Please select "Continue Anyway" to launch the game. The problem does not occur with a previous Release 95 driver (xx.xx format).
NVIDIA is pursuing a fix with the application developer.
- ▶ Windows Vista 64-bit, [PhysX]: TheGameCreators PhysX Screen Saver doesn't get installed properly. [491613]
This is not an NVIDIA issue, but a bug in Vista 64-bit OS that affects the installation of many screen savers. To work around, locate the corresponding.scr file for the screen saver, then right-click and select Install.
Note: *PhysXscreensaver.scr is located in <system root>\windows\SysWOW64.*
- ▶ GeForce 9800 GTX: Flight Simulator Acceleration (DirectX 10) - the sky box does not render correctly when zoomed all the way out. [436158]
This is not an NVIDIA bug, but rather an application issue.
- ▶ GeForce 9800 GTX: Flight Simulator Acceleration (DirectX 10) - there is no antialiasing preview window. [436156]
- ▶ GeForce 9800 GX2: Fury (DirectX 10)–the character names flicker. [384917]
This is not an NVIDIA bug, but rather an application issue.
- ▶ GeForce 9600 GT, GeForce 9800 GX2, GeForce 8800 GTX/Ultra/GTS/GT: Assassin's Creed: Directors Cut - the shadow flickers. [400541]
This is not an NVIDIA bug, but rather an application issue.
- ▶ GeForce 9600 GT: Crysis (DirectX 9) - there is corruption in the game. [399261]
This is not an NVIDIA bug, but rather an issue with the application issue. To avoid this issue, use the DirectX 10 option of the game.
- ▶ GeForce 8800 GTX: Tabula Rasa–there is ghosting on the game character while standing below the drop ship after enabling refraction from the game control panel. [357271]
This is not an NVIDIA bug, but rather an application issue.
- ▶ GeForce 8800 GT: Company of Heroes DirectX10 - the application crashes when MSAA is enabled. [346495]
This is a Fraps 2.9.2 issue.
- ▶ GeForce 8 Series: Quake 4–there are white flashing artifacts. [273476]
- ▶ GeForce 8800: City of Heroes–there are corrupted textures in certain missions.[290659]
This has been fixed with the latest patch for the game.
- ▶ GeForce 8800: Ghost Recon - Advanced Warfighter–the gadget side bar bleeds through on the right side of the screen during game play. [281304]

- ▶ GeForce 8800 GTX: Star Wars Battle front 2–screen corruption occurs at 2560x1600 resolution. [325457]
- ▶ GeForce 8800 GTX, GeForce 7900 GTX: Neverwinter Nights 2–the mini map loses its background when the resolution is changed. [273788]
- ▶ GeForce 8800 GTX: Civilization 4–setting in-game 16x antialiasing AA disables all antialiasing.[303283]
- ▶ GeForce 8800 GTX: Flight Simulator–the terrain changes to low resolution when switching from Air Traffic-controlled to player-controlled airplane.[304840]
- ▶ GeForce 8800 GTX: Scarface–corruption during the game.[290007]
- ▶ GeForce 8800 GTX: Neverwinter Nights 2–only overlays render when switching to 2560x1600 using 8xAA. [302061, 314148]
- ▶ GeForce 8800 GTX: Command & Conquer:Tiberium Wars–the game crashes at 2560x1600 resolution, with 8x antialiasing enabled, and when in-game settings are set to the highest levels. [308248/316633]
- ▶ GeForce 8800 GT/GTX: Crysis (DirectX 10) - game performance drops after switching to a higher resolution and then switching back to the lower resolution. [368740]
- ▶ GeForce 7900: Flight Simulator X – rendering becomes corrupted after pressing the Windows key. [293727 296232]
- ▶ GeForce 7600: Rainbow Six Vegas – antialiasing is not applied when setting antialiasing override mode in the NVIDIA Control Panel. [294215]

Antialiasing is supported in this application only on GeForce 8 series and higher GPUs.

- ▶ GeForce 8500/8400/8300: Corruption occurs while running MicroSoft SDK Basic HLSL sample application. [302209]
- ▶ GeForce 8500/8400/8300: Dark Messiah of Might and Magic–an application error occurs when quitting the game. [300980]

This is an issue with the application.

- ▶ GeForce 8500/8400/8300: Elder Scrolls IV: Oblivion–the game crashes after restoring from minimization. [296725]
- ▶ GeForce 7900 GTX: CPU usage is extremely high during H.264 playback of Blu-ray disc, resulting in dropped frames. [304480]
- ▶ GeForce 7300GS: Rainbow Six Vegas–the display turns black at 1600x1200 resolution.[302319]
- ▶ GeForce 7300 GT: Far Cry–geometry is corrupted during rendering of blood.[304348]
- ▶ GeForce 7300 GT: Company Of Heroes–the shadows are corrupt at the default game settings with SLI mode enabled. [346746]

This is an issue with the application.

- ▶ GeForce 8600 GT: Battlefield 2–the game crashes to desktop when set to 1900x1440 resolution 8x antialiasing. [322008]

This problem occurs only when you have FRAPS 2.6.4 installed. It does not occur with FRAPS 2.8.2

- ▶ 316403 GeForce 8 Series, GeForce 7 Series: NV SDK 9.5 *Mandelbrot* set fails to render fractal.
This is an issue with the NV SDK and will be fixed in a newer build.
- ▶ GeForce 8 Series: Prince of Persia—half the screen turns black and the other half turns white during resolution changes. [299484]
This is an issue with the application.
- ▶ GeForce 8800 GTX: Company of Heroes (DirectX 10)—the game crashes when the maximum settings are applied at 2560x1600 with 8xAA enabled. [321631]
This is an issue with the application.
- ▶ GeForce 7 Series: Risen [GM]—there is fog corruption. [606532]
This is an issue with the application.
- ▶ GeForce 7950 GX2: Flight SimX – water has artifacts. [292168]
- ▶ GeForce 6600: Stars Wars Battlefront2—blue-screen crash occurs when High settings are used.[302213]
- ▶ GeForce 6200: Call of Juarez—there is corruption at all resolutions. [356711]
- ▶ GeForce 6100/6150: Gothic—there is flickering with a white screen when using the default settings.[303552]
- ▶ GeForce 6200: Star Wars Empire at War—the game menu buttons are corrupt. [357713]
- ▶ GeForce 8600M GT: Warmonger 2.1—the game intermittently stops responding after changing in-game resolution. [482889]
- ▶ GeForce 8600M GT: Dead Space - a “your graphics card does not meet Dead Space minimum requirement” error message appears after launching the game. [491410]
This is a limitation of the application, and only occurs if your monitor does not support 60 Hz refresh rate.
- ▶ GeForce 8600M GT: MPEG1 and MPEG2 playback using iTunes is choppy. [537550]
The application does not use hardware acceleration.

Application Issues Under SLI Mode

- ▶ [SLI], GeForce 200 series, Surround gaming: Pacific Fighters—the game fails to switch to Surround gaming resolutions even though they are listed in the game menu. [670389]
- ▶ [SLI], GeForce 200 Series: BioShock 2—artifacts appear in the game when SLI mode is enabled. [653303]
This is an application multi-GPU compatibility issue.
- ▶ [SLI]: NVIDIA SLI scaling on some applications under Windows Vista may not be as much as under Windows XP. Some applications include "S.T.A.L.K.E.R., Half-Life 2: Lost Coast, Company of Heroes, Battlefield 2142, Call of Duty 2, Hitman: Blood Money, and Far Cry. [302534 290803]
This is an application issue which has been resolved with the latest Steam patch.

- ▶ [SLI], GeForce 9800 GX2: The Witcher—a blooming light shines through objects with SLI mode enabled. [396736]
This is not an NVIDIA bug, but rather an application issue.
- ▶ [Quad SLI], GeForce 9800 GX2: Test Driver Unlimited—there is pausing/hitching during the cut scene transitions. [395207]
- ▶ [SLI], GeForce 8800 GTX, GeForce 8600, GeForce 6 Series: Company of Heroes—there is corruption in the ground textures. [294118]
This is an application issue, and has been fixed with the latest patch for the game.
- ▶ [SLI], GeForce 8800 GTX: Battlefield 2 and Battlefield 2142—the games crash when exiting back to the menu after being played at 2048x1536 using 8xAA or higher. [301985]
This is an issue with the application.
- ▶ [SLI], GeForce 7900 GTX: Chess Titans—with Aero-glass enabled, there is blanking when resizing the game window. [346775]
This is an issue with the application.
- ▶ [SLI], GeForce 8800: While uninstalling the driver, the error message "Windows host process (Rundll32) has stopped working" appears. [294219 280920]
- ▶ [SLI], GeForce 8800: Splinter Cell Double Agent – the game crashes when minimized and then invoked again. [294205]
- ▶ [SLI], GeForce 8800: Battlefield 2142 – 8xAA cannot be set from the game control panel. [294231]
- ▶ [SLI], GeForce 7900: Microsoft Flight simulator X – corruption and flickering occur while flying close to land objects. [293882]

Operating System Issues

- ▶ Direct-X diagnostics tool (DXDIAG) may report an unexpected value for the display adapter's memory. [673360]
See the Microsoft KB article <http://support.microsoft.com/kb/2026022>.
- ▶ [SLI], GeForce 8800 GTX: While installing the graphics driver, the message "Incompatible display adapter has been disabled" appears and the display turns blank. [318173]
This issue is resolved in Windows 7.
- ▶ When S-video and DVI displays are set up in Clone mode and rotated 90 degrees, the screen turns black. [304267, 283546]
This is an issue with DirectX.
- ▶ GeForce 8300 GS: With Aero-glass enabled, the screen flickers after rotating the display 90 degrees with S-Video as the primary display. [317347]
This issue is resolved in Windows 7.

Known Product Limitations

This section describes problems that will not be fixed. Usually, the source of the problem is beyond the control of NVIDIA. Following is the list of problems and where they are discussed in this document:

- ▶ “3D Vision USB Driver Does Not Get Installed” on page 26
- ▶ “No PhysX Acceleration Using the GPU” on page 26
- ▶ “NVIDIA PhysX System Software Cannot be Installed or Uninstalled in Windows Safe Mode” on page 27
- ▶ “3DMark 11 Does not Run in Stereoscopic 3D Mode” on page 27
- ▶ “Previous Driver Files Remain After Overinstalling with Release 256 or Earlier Drivers” on page 27
- ▶ “Do not Use Windows Rollback for Graphics Drivers” on page 28
- ▶ “Uninstalling Drivers Using Device Manager is not Supported” on page 28
- ▶ “Changing the Primary Display Across SLI GPUs Takes Longer than Expected” on page 28
- ▶ “Understanding the DirectX Version Shown in the NVIDIA System Information Window” on page 29
- ▶ “Using HDMI Audio with Displays that have a High Native Resolution” on page 29
- ▶ “Using HDMI Displays that do not Support Audio” on page 30
- ▶ “Using HDMI/DisplayPort Audio in Dualview or Clone Mode Configurations” on page 31
- ▶ “Flat Panel Scaling Controls are Non-functional for Some TV Modes for Some Displays” on page 31
- ▶ “GPU Runs at a High Performance Level (full clock speeds) in Multi-display Modes” on page 32
- ▶ “GeForce GTX 295 Fan Control Does not Function With NVIDIA Control Panel Performance Group version 6.03.06.00” on page 32
- ▶ “1280x1024 @ 60 Hz not Available on BenQ FP241W Monitors” on page 32
- ▶ “Image Sharpening Control not Available with GeForce 8 Series and later GPUs” on page 32
- ▶ “Gigabyte GA-6BX Motherboard” on page 33

3D Vision USB Driver Does Not Get Installed

Issue

After installing the NVIDIA graphics driver, if the 3D Vision USB emitter was not plugged in, the 3D Vision USB Controller driver does not get installed. If you plug in the emitter after installing the driver, the indicator light on the emitter will flash red and will not turn green.

Resolution

To fix this issue, NVIDIA recommends performing a driver re-install with the 3D Vision USB emitter connected. Please download the latest drivers and follow these steps:

- 1 Plug in the 3D Vision USB emitter.
- 2 Re-install the NVIDIA driver.
Select **Custom (Advanced)** and then select **Perform a clean Installation** during the driver installation.
- 3 Reboot.

No PhysX Acceleration Using the GPU

If after installing the PhysX System Software you find that there is no PhysX acceleration on supported applications, repeat the PhysX setup as follows:

- 1 Reboot the PC.
- 2 Open the NVIDIA Control Panel and then, under 3D Settings, click **Set PhysX configuration** to open that page.
- 3 Under **Select a PhysX processor**, verify that either **auto-select** or a specific NVIDIA GPU is selected.
- 4 Click **Apply**.

NVIDIA PhysX System Software Cannot be Installed or Uninstalled in Windows Safe Mode

Issue

Beginning with Release 280, the NVIDIA PhysX System Software is not included in the NVIDIA driver installation/uninstallation under safe mode.

Explanation

The NVIDIA PhysX System Software installer is not compatible with Microsoft's policy for Windows safe Mode. Consequently, installation or uninstallation of the PhysX System Software under safe mode would fail. To allow installation or uninstallation of the graphics driver under safe mode, the NVIDIA PhysX System Software is blocked from the process.

3DMark 11 Does not Run in Stereoscopic 3D Mode

Issue

When attempting to run 3DMark 11 with NVIDIA 3D Vision enabled, the benchmark may hang, present a black screen, or in other ways not appear correctly.

Explanation

3DMark 11 is not compatible with running in stereoscopic 3D. To facilitate running the benchmark, recent drivers will run it in monoscopic mode, even with 3D Vision enabled.

Previous Driver Files Remain After Overinstalling with Release 256 or Earlier Drivers

Issue

When installing a Release 256 or earlier driver over a Release 260 or later driver, some of the previous driver files remain on the hard disk, resulting in potential conflicts.

Workaround

After installing a Release 260 or later driver, you must uninstall the driver first before installing a Release 256 or earlier driver.

Do not Use Windows Rollback for Graphics Drivers

To reinstall a previous or older NVIDIA graphics driver, do not use the Windows rollback feature. This method will not reliably restore all the previous driver files.

Instead, use the Windows Add and Remove programs to remove the current driver, and then install the older driver using setup.exe.

Uninstalling Drivers Using Device Manager is not Supported

Issue

On all supported versions of Microsoft Windows, uninstalling the NVIDIA driver using the Windows Device Manager may not remove associated files or applications.

Explanation

Microsoft has confirmed that this behavior is by design. If you wish to uninstall the NVIDIA driver, it is recommended that you do so using Add and Remove programs.

See the [Microsoft KB article 2278714](#).

Changing the Primary Display Across SLI GPUs Takes Longer than Expected

Issue

On an SLI system, switching the primary (or SLI focus) display when each display in the SLI group is connected to a different GPU takes longer than expected.

Explanation

On an SLI system with each SLI GPU driving a display, the display connected to the slave GPU is the primary display (also the SLI focus display). In order to switch the primary display to the one connected to the other GPU, the master and slave GPU configuration must also switch. In order to reassign which GPU is the master and which is the slave, the driver must be reloaded. It is the process of reloading the driver that takes the additional time.

Understanding the DirectX Version Shown in the NVIDIA System Information Window

The System Information window—accessed by clicking **System Information** at the bottom left corner of the NVIDIA Control Panel—provides technical information about the NVIDIA graphics cards and driver installed in the system.

It also provides information about the Windows version as well as the DirectX version that is installed.

However, in order to use the version of DirectX reported in the System Information window, the NVIDIA GPU and graphics driver must also support that DirectX version.

For example, driver version 197.45 and Windows Vista (with available patch) support DirectX 11. But only NVIDIA graphics cards based on the Fermi architecture released in 2010 support DirectX 11. So your system must have one of these cards installed in order to take advantage of DirectX 11 performance.

Using HDMI Audio with Displays that have a High Native Resolution

To use HDMI audio with some displays that have a native resolution higher than 1920x1080, you must set the display to a lower HD resolution.

Some HDMI displays have a native resolution that exceeds the maximum supported HD mode. For example, displays with a native resolution of 1920x1200 exceed the maximum supported HD mode of 1920x1080.

Applying this native mode results in display overscan which cannot be resized using the NVIDIA Control Panel since the mode is not an HD mode.

To avoid this situation and provide a better user experience, the driver treats certain TVs—such as the Viewsonic VX2835wm and the Westinghouse LVM-37w3—as a DVI monitor when applying the native mode. Because the driver does not treat the TV as an HDMI in this case, the HDMI audio is not used.

Using HDMI Displays that do not Support Audio

Some HDMI displays do not support audio, or have issues with GeForce 9 series and earlier, and GeForce GTX 200-series NVIDIA graphics cards.

The NVIDIA driver attempts to identify such displays and automatically disables the audio. For example, the NVIDIA driver disables HDMI audio for all Philips HDMI TVs, as these have been identified as having issues with GeForce 9 series and earlier, and GeForce GTX 200-series NVIDIA graphics cards.

There may be cases where either the driver disables audio even though there is no problem, or does not disable the audio when in fact the audio does not work. The following sections describe these situations and provides guidance for handling them.

Corrupted video and no audio

The driver has not disabled audio and the display's audio signal is incompatible with the graphics card, causing video corruption.

With a different display connected in order to establish video, disable audio for the HDMI display using the NVIDIA Control Panel-> Set Up Digital Audio page. Click the arrow for the problem display and then click **Turn off audio**.

Video but no audio

- ▶ Check the display list for the problem connection on the NVIDIA Control Panel->Set Up Digital Audio page.
- ▶ If **Turn off audio** is selected and you want to test whether your HDMI audio does, in fact, work, then click the list arrow and select the name of the display.

The driver will prompt you with instructions for testing HDMI audio with that display.

- ▶ If the display name is selected, then the driver has not successfully detected that an incompatible display is connected.

Future driver versions will properly identify such displays and disable audio.

Using HDMI/DisplayPort Audio in Dualview or Clone Mode Configurations

Two Audio-enabled Ports

In a multi-display configuration where both HDMI/DisplayPort audio ports are enabled, only the primary display will provide the audio.

One Audio-enabled Port

In a multi-display configuration where only one audio port is enabled, such as when one display is a DVI display, then the HDMI/DisplayPort display can provide the audio whether is it the primary or secondary display.

Flat Panel Scaling Controls are Non-functional for Some TV Modes for Some Displays

The NVIDIA Control Panel flat panel scaling controls on the "Adjust Desktop Size & Position" page are not intended to be used for TV modes, and normally the controls are not available for TV or HDTV displays.

However, Microsoft requires that certain TV/HDTV modes be available for all digital displays, including DVI and HDMI, even if they are not HDTV.

While the NVIDIA flat panel scaling controls are available for those displays, they will not be functional for the TV modes that appear in compliance with the Microsoft requirements. The affected modes are as follows:

- ▶ 1920x1080i @50/59.94/60 Hz
- ▶ 1280x720p @50/59.94/60 Hz
- ▶ 720x480p @ 59.94/60 Hz
- ▶ 720x576p @ 50 Hz

GPU Runs at a High Performance Level (full clock speeds) in Multi-display Modes

This is a hardware limitation with desktop and older notebook GPUs, and not a software bug. When multiple displays are connected and active, the GPU will always operate with full clock speeds in order to efficiently drive multiple displays—even when no 3D programs are running.



Note: NVIDIA notebook GeForce 5xxM series and later GPUs do not have this limitation. For those GPUs the driver can adjust the performance level, depending on demand, even when driving multiple displays.

GeForce GTX 295 Fan Control Does not Function With NVIDIA Control Panel Performance Group version 6.03.06.00

The GeForce GTX 295 fan control does not function properly when using the NVIDIA Control Panel Performance Group version 6.03.06.00. For proper fan control, use version 6.03.12.00 or later.

1280x1024 @ 60 Hz not Available on BenQ FP241W Monitors

Even though the monitor EDID lists 1280x1024 @ 60 Hz, the screen turns blank when using an HDMI connection. This is an issue with the monitor and not the NVIDIA driver.

Because of this issue with the monitor, the NVIDIA driver blocks the problem mode (1280x1024 @ 60 Hz) and makes it unavailable.

Image Sharpening Control not Available with GeForce 8 Series and later GPUs

With GeForce 8 Series and later graphics cards, the **Image sharpening** slider on the NVIDIA Control Panel-> Display->Adjust Desktop Color Settings page is grayed out.

This control is intentionally disabled because image sharpening is not supported on GeForce 8 series and later GPUs.

Gigabyte GA-6BX Motherboard

This motherboard uses a Linfinity regulator on the 3.3-V rail that is rated to only 5 A—less than the AGP specification, which requires 6 A. When diagnostics or applications are running, the temperature of the regulator rises, causing the voltage to the NVIDIA chip to drop as low as 2.2 V. Under these circumstances, the regulator cannot supply the current on the 3.3-V rail that the NVIDIA chip requires.

This problem does not occur when the graphics board has a switching regulator or when an external power supply is connected to the 3.3-V rail.

03 THE RELEASE 295 DRIVER

This chapter covers the following main topics:

- ▶ [“About the Release 295 Driver” on page 34](#)
- ▶ [“Hardware and Software Support” on page 35](#)
- ▶ [“Driver Installation” on page 44](#)

About the Release 295 Driver

This driver release is from the Release 295 family of drivers (versions 295.xx to 299.xx). This driver package supports GeForce 6, 7, 8, 9, 100, 200, 300, 400, and 500-series desktop GPUs as well as ION desktop GPUs. See [“Supported NVIDIA Desktop Products” on page 35](#) for the list of specific products supported in this release.

The notebook driver is part of the NVIDIA Verde Notebook Driver Program, and can be installed on supported NVIDIA notebook GPUs. However, please note that your notebook original equipment manufacturer (OEM) provides certified drivers for your specific notebook on their website. NVIDIA recommends that you check with your notebook OEM about recommended software updates for your notebook. OEMs may not provide technical support for issues that arise from the use of this driver.

Hardware and Software Support

- ▶ “Supported Operating Systems” on page 35
- ▶ “Supported NVIDIA Desktop Products” on page 35
- ▶ “Supported NVIDIA Notebook Products” on page 40
- ▶ “Supported Languages” on page 44

Supported Operating Systems

This Release 295 driver includes drivers designed for the following Microsoft® operating systems:

- ▶ Microsoft Windows® 7, and supports both 32-bit and 64-bit versions.
- ▶ Microsoft Windows® Vista, and supports both 32-bit and 64-bit versions.

Supported NVIDIA Desktop Products

The following table lists the NVIDIA products supported by the Release 295 driver, version 295.73:

Table 3.1 Supported NVIDIA Desktop GPUs

| Consumer Products |
|----------------------------------|
| ION |
| ION LE |
| GeForce GTX 590 |
| GeForce GTX 580 |
| GeForce GTX 570 |
| GeForce GTX 560 |
| GeForce GTX 560 Ti |
| GeForce GTX 550 Ti |
| GeForce GTX 480 |
| GeForce GTX 470 |
| GeForce GTX 465 |
| GeForce GTX 460 SE and 460 SE v2 |
| GeForce GTX 460 v2 |
| GeForce GTX 295 |
| GeForce GTX 285 |
| GeForce GTX 280 |
| GeForce GTX 275 |

Table 3.1 Supported NVIDIA Desktop GPUs

| Consumer Products |
|-------------------|
| GeForce GTX 260 |
| GeForce GTS 450 |
| GeForce GTS 250 |
| GeForce GTS 240 |
| GeForce GT 545 |
| GeForce GT 530 |
| GeForce GT 520 |
| GeForce GT 430 |
| GeForce GT 340 |
| GeForce GT 330 |
| GeForce GT 320 |
| GeForce GT 240 |
| GeForce GT 220 |
| GeForce G210 |
| GeForce 405 |
| GeForce 210 |
| GeForce 205 |
| GeForce GT 140 |
| GeForce GT 130 |
| GeForce GT 120 |
| GeForce G100 |
| GeForce 9800 GX2 |
| GeForce 9800 GTX+ |
| GeForce 9800 GTX |
| GeForce 9800 GT |
| GeForce 9600 GT |
| GeForce 9600 GS |
| GeForce 9600 GSO |
| GeForce 9500 GT |
| GeForce 9500 GS |
| GeForce 9400 GT |
| GeForce 9400 |
| GeForce 9300 GS |
| GeForce 9300 GE |
| GeForce 9300 |

Table 3.1 Supported NVIDIA Desktop GPUs

| Consumer Products |
|----------------------------|
| GeForce 9200 |
| GeForce 8800 Ultra |
| GeForce 8800 GTX |
| GeForce 8800 GTS 512 |
| GeForce 8800 GTS |
| GeForce 8800 GT |
| GeForce 8800 GS |
| GeForce 8600 GTS |
| GeForce 8600 GT |
| GeForce 8600 GS |
| GeForce 8500 GT |
| GeForce 8400 GS |
| GeForce 8400 SE |
| GeForce 8400 |
| GeForce 8300 GS |
| GeForce 8300 |
| GeForce 8200 |
| GeForce 8100 / nForce 720a |
| nForce 780a SLI |
| nForce 760i SLI |
| nForce 750a SLI |
| nForce 730a |
| GeForce 7950 GX2 |
| GeForce 7950 GT |
| GeForce 7900 GTX |
| GeForce 7900 GT/GTO |
| GeForce 7900 GS |
| GeForce 7800 SLI |
| GeForce 7800 GTX |
| GeForce 7800 GT |
| GeForce 7800 GS |
| GeForce 7650 GS |
| GeForce 7600 GT |
| GeForce 7600 GS |
| GeForce 7600 LE |

Table 3.1 Supported NVIDIA Desktop GPUs

| Consumer Products |
|--------------------------------------|
| GeForce 7500 LE |
| GeForce 7350 LE |
| GeForce 7300 SE |
| GeForce 7300 LE |
| GeForce 7300 GT |
| GeForce 7300 GS |
| GeForce 7200 GS |
| GeForce 7100 GS |
| GeForce 7150 / NVIDIA nForce 630i |
| GeForce 7100 / NVIDIA nForce 630i |
| GeForce 7050 / NVIDIA nForce 620i |
| GeForce 7050 / NVIDIA nForce 610i |
| GeForce 7100 / NVIDIA nForce 620i |
| GeForce 7050 PV / NVIDIA nForce 630a |
| GeForce 7050 PV / NVIDIA nForce 630a |
| GeForce 7025 / NVIDIA nForce 630a |
| GeForce 6800 XT |
| GeForce 6800 XE |
| GeForce 6800 Ultra |
| GeForce 6800 Series GPU |
| GeForce 6800 LE |
| GeForce 6800 GT |
| GeForce 6800 GS/XT |
| GeForce 6800 GS |
| GeForce 6800 |
| GeForce 6700 XL |
| GeForce 6610 XL |
| GeForce 6600 VE |
| GeForce 6600 LE |
| GeForce 6600 GT |
| GeForce 6600 |
| GeForce 6500 |
| GeForce 6250 |
| GeForce 6200SE TurboCache™ |
| GeForce 6200 TurboCache™ |

Table 3.1 Supported NVIDIA Desktop GPUs

| Consumer Products |
|---------------------------|
| GeForce 6200 LE |
| GeForce 6200 A-LE |
| GeForce 6200 |
| GeForce 6150SE nForce 430 |
| GeForce 6150 LE |
| GeForce 6150 |
| GeForce 6100 nForce 420 |
| GeForce 6100 nForce 405 |
| GeForce 6100 nForce 400 |
| GeForce 6100 |

Supported NVIDIA Notebook Products

The following tables list the NVIDIA notebook products supported by the Release 295 driver, version 295.73:



Note:

Hybrid Power technology with Intel chipsets is not supported by this release.

The following Sony VAIO notebooks are supported: Sony VAIO F Series with NVIDIA GeForce 310M, GeForce 315M (All-in-One system), GeForce GT 330M, GeForce GT 425M, GeForce GT 520M, or GeForce GT 540M (All-in-One system). Other Sony VAIO notebooks are not supported at this time (please contact Sony for driver support).

Fujitsu notebooks are not supported by this release (Fujitsu Siemens notebooks are supported).

Table 3.2 Supported NVIDIA Notebook GPUs

| Consumer Products |
|-------------------|
| ION |
| ION LE |
| GeForce GTX 580M |
| GeForce GTX 570M |
| GeForce GTX 560M |
| GeForce GT 555M |
| GeForce GT 550M |
| GeForce GT 540M |
| GeForce GT 525M |
| GeForce GT 520MX |
| GeForce GT 520M |

Table 3.2 Supported NVIDIA Notebook GPUs

| Consumer Products |
|-------------------|
| GeForce GTX 485M |
| GeForce GTX 480M |
| GeForce GTX 470M |
| GeForce GTX 460M |
| GeForce GT 445M |
| GeForce GT 435M |
| GeForce GT 425M |
| GeForce GT 420M |
| GeForce GT 415M |
| GeForce 410M |
| GeForce GTS 360M |
| GeForce GTS 350M |
| GeForce GTS 250M |
| GeForce GT 335M |
| GeForce GT 330M |
| GeForce GT 325M |
| GeForce GT 320M |
| GeForce 320M |
| GeForce 315M |
| GeForce 310M |
| GeForce 305M |
| GeForce GTX 285M |
| GeForce GTX 280M |
| GeForce GTX 260M |
| GeForce GT 240M |
| GeForce GT 230M |
| GeForce GT 220M |
| GeForce GTS 160M |
| GeForce GT 130M |
| GeForce GT 120M |
| GeForce G 210M |
| GeForce G 110M |
| GeForce G 105M |
| GeForce G 103M |
| GeForce G 102M |
| GeForce 9800M GTX |
| GeForce 9800M GTS |

Table 3.2 Supported NVIDIA Notebook GPUs

| Consumer Products |
|-------------------|
| GeForce 9800M GT |
| GeForce 9800M GS |
| GeForce 9700M GTS |
| GeForce 9700M GT |
| GeForce 9650M GT |
| GeForce 9650M GS |
| GeForce 9600M GT |
| GeForce 9600M GS |
| GeForce 9500M GS |
| GeForce 9500M G |
| GeForce 9400M G |
| GeForce 9400M |
| GeForce 9300M GS |
| GeForce 9300M G |
| GeForce 9200M GS |
| GeForce 9200M GE |
| GeForce 9100M G |
| GeForce 8800M GTX |
| GeForce 8800M GTS |
| GeForce 8800M GS |
| GeForce 8700M GT |
| GeForce 8600M GT |
| GeForce 8600M GS |
| GeForce 8400M GT |
| GeForce 8400M GS |
| GeForce 8400M G |
| GeForce 8200M G |
| GeForce 8200M |

Table 3.3 Supported NVIDIA NVS and Quadro NVS M GPUs

| Consumer Products |
|-------------------|
| NVS 5100M |
| NVS 4200M |
| NVS 3100M |
| NVS 2100M |

Table 3.3 Supported NVIDIA NVS and Quadro NVS M GPUs

| Consumer Products |
|-------------------|
| Quadro NVS 320M |
| Quadro NVS 160M |
| Quadro NVS 150M |
| Quadro NVS 140M |
| Quadro NVS 135M |
| Quadro NVS 130M |

Table 3.4 Supported NVIDIA Quadro M and Quadro FX M GPUs

| Consumer Products |
|-------------------|
| Quadro 5010M |
| Quadro 5000M |
| Quadro 4000M |
| Quadro 3000M |
| Quadro 2000M |
| Quadro 1000M |
| Quadro FX 3800M |
| Quadro FX 3700M |
| Quadro FX 3600M |
| Quadro FX 2800M |
| Quadro FX 2700M |
| Quadro FX 1800M |
| Quadro FX 1700M |
| Quadro FX 1600M |
| Quadro FX 880M |
| Quadro FX 770M |
| Quadro FX 570M |
| Quadro FX 380M |
| Quadro FX 370M |
| Quadro FX 360M |

Supported Languages

The Release 295 Graphics Drivers supports the following languages in the main driver Control Panel:

| | | |
|-----------------------|---------------------|-------------------------------|
| English (USA) | German | Portuguese (Euro/ Iberian) |
| English (UK) | Greek | Russian |
| Arabic | Hebrew | Slovak |
| Chinese (Simplified) | Hungarian | Slovenian |
| Chinese (Traditional) | Italian | Spanish |
| Czech | Japanese | Spanish (Latin America) |
| Danish | Korean | Swedish |
| Dutch | Norwegian | Thai |
| Finnish | Polish | Turkish |
| French | Portuguese (Brazil) | |

Driver Installation

Minimum Hard Disk Space

The hard disk space requirement for 32-bit is minimum 180 MB for English-only, and 270 MB for International.

The hard disk space requirement for 64-bit is minimum 250 MB for English-only, and 350 MB for International.

Before You Begin

nTune

If you have previously installed NVIDIA nTune, NVIDIA recommends that you uninstall nTune before installing this driver. After the driver install is complete, you can reinstall NVIDIA nTune.

Notebooks

- ▶ Check to make sure that your notebook has a supported GPU (see [“Supported NVIDIA Notebook Products”](#) on page 40).
- ▶ It is recommended that you back up your current system configuration.
- ▶ If you own a Dell Inspiron 1420, Dell XPS M1330, or Dell XPS M1530, or Dell LatitudeD630 or D630c, it is highly recommended that you first install this [Dell software update](#).

Installation Instructions

- 1 Follow the instructions on the NVIDIA .com Web site driver download page to locate the appropriate driver to download, based on your hardware and operating system.
- 2 From the driver download page, click the **Download** button.
The *Download Confirmation* page appears.
- 3 If you agree to the "License For Customer Use of NVIDIA Software", click the **Agree & Download** button to begin the download.
The *File Download* dialog appears.
- 4 Either click **Save** to save the file and then run it from your PC, or click **Run**.
An extraction path dialog appears prompting you to specify where on your PC you want the driver files to be installed.
- 5 Click **OK** to use the default location, or click the folder icon and specify an alternate location to install the driver files.
The files are extracted and then the NVIDIA Installer is launched automatically.
- 6 At the *License Agreement* page of the Installer, click **Agree and Continue**.

7 Follow the instructions in the NVIDIA Installer to complete the installation.



Note: The driver presents game screenshots while the driver is installing. If you are not connected to the internet during the installation, you may see a "Navigation to the webpage was cancelled" message instead. The message can be ignored and does not affect the installation. The message won't appear if the browser cache is cleared.



Note: The NVIDIA PhysX System Software will not be included in the installation if the same version or a later version is already installed.



Note: After the driver installation, Windows may default to 16-bpp color and disable the Desktop Window Manager (DWM). To work around this issue, set the color to 32-bpp and then reboot the PC.

See also the installation/uninstallation considerations explained in [“Known Product Limitations” on page 25](#).

APPENDIX A MODE SUPPORT FOR WINDOWS

This chapter details the Windows modes supported by the Release 295 driver for NVIDIA products. It contains these sections:

- ▶ “General Mode Support Information” on page 48
- ▶ “Default Modes Supported by GPU” on page 49
- ▶ “Modes Supported by TV Encoders” on page 54

General Mode Support Information

The NVIDIA graphics driver includes a standard list of display modes that are supported by default. These modes are listed in the section [“Default Modes Supported by GPU” on page 49](#).

The actual modes available depend on the capabilities of the display. In addition, the NVIDIA graphics driver has a “dynamic EDID detection” capability and will make available *additional* modes that are listed in the display EDID, provided the graphics hardware can support it.

The NVIDIA graphics driver also supports the high resolutions available with the displays listed in [Table A.1](#) as well as the non-standard modes listed in [Table A.2](#).

Table A.1 Modes Supported for High Resolution Displays

| Display | Maximum Resolution |
|---|--------------------|
| Apple 30” Cinema HD Display (Dual link DVI) | 2560x1600 @ 60 Hz |
| Dell WFP 3007 (Dual Link DVI) | 2560x1600 @ 60 Hz |
| HP LP3065 dual-link DVI flat panel | 2560x1600 @ 60Hz. |

Table A.2 Non-standard Modes Supported

| Resolution | | |
|-------------|--|--|
| 1680 x 1050 | | |
| 1366 x 768 | | |

Default Modes Supported by GPU

This section lists the modes that are included by default in the driver INF for the following product families:

- ▶ “GeForce 500 and 400 , 300, 200, 100, 9 Series, 8 Series, 7 Series, 6 Series, and nForce 7xx/6xx GPUs” on page 50
- ▶ “GeForce 9M, 8M, 100M, 200M, 300M, 400M, 500M Series, and Quadro NVS and Quadro FX Notebook GPUs” on page 52

Understanding the Mode Format

Figure A.1 gives an example of how to read the mode information presented in this section.

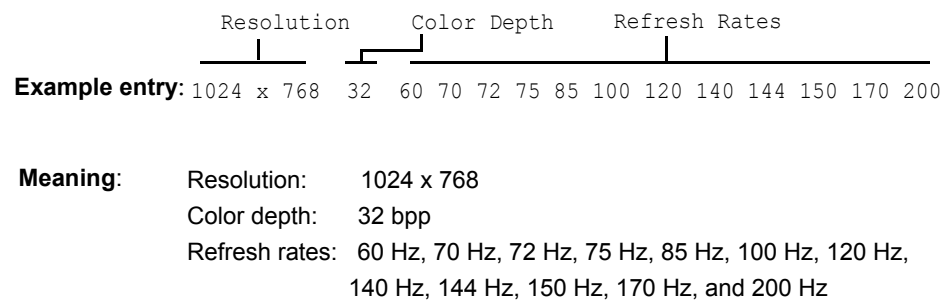


Figure A.1 Mode Format

Note:

- Horizontal spanning modes of 3840x1080 and above, and vertical spanning modes of 1920x2160 and above generally require at least 32 MB of video memory at 32 bpp.
- An “i” next to the refresh rate indicates an interlaced refresh rate.

GeForce 500 and 400 , 300, 200, 100, 9 Series, 8 Series, 7 Series, 6 Series, and nForce 7xx/6xx GPUs

This section lists the supported display resolutions, color depths, and refresh rates for the products listed in [“Supported NVIDIA Desktop Products” on page 35](#).

Standard Modes

| | | |
|-------------|----|--|
| 640 x 480 | 8 | 60 70 72 75 85 100 120 140 144 150 170 200 240 |
| 720 x 480 | 8 | 60 |
| 720 x 576 | 8 | 50 |
| 800 x 600 | 8 | 60 70 72 75 85 100 120 140 144 150 170 200 240 |
| 1024 x 768 | 8 | 60 70 72 75 85 100 120 140 144 150 170 200 240 |
| 1152 x 864 | 8 | 60 70 72 75 85 100 120 140 144 150 170 200 |
| 1280 x 720 | 8 | 60 |
| 1280 x 768 | 8 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1280 x 800 | 8 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1280 x 960 | 8 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1280 x 1024 | 8 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1360 x 768 | 8 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1600 x 900 | 8 | 60 70 72 75 85 100 120 140 144 150 |
| 1600 x 1024 | 8 | 60 70 72 75 85 100 120 |
| 1600 x 1200 | 8 | 60 70 72 75 85 100 120 |
| 1680 x 1050 | 8 | 60 |
| 1920 x 1080 | 8 | 60 |
| 1920 x 1200 | 8 | 60 70 72 75 85 100 |
| 1920 x 1440 | 8 | 60 70 72 75 85 |
| 2048 x 1536 | 8 | 60 |
| ----- | | |
| 640 x 480 | 16 | 60 70 72 75 85 100 120 140 144 150 170 200 240 |
| 720 x 480 | 16 | 60 |
| 720 x 576 | 16 | 50 |
| 800 x 600 | 16 | 60 70 72 75 85 100 120 140 144 150 170 200 240 |
| 1024 x 768 | 16 | 60 70 72 75 85 100 120 140 144 150 170 200 240 |
| 1152 x 864 | 16 | 60 70 72 75 85 100 120 140 144 150 170 200 |
| 1280 x 720 | 16 | 60 |
| 1280 x 768 | 16 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1280 x 800 | 16 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1280 x 960 | 16 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1280 x 1024 | 16 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1360 x 768 | 16 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1600 x 900 | 16 | 60 70 72 75 85 100 120 140 144 150 |
| 1600 x 1024 | 16 | 60 70 72 75 85 100 120 |
| 1600 x 1200 | 16 | 60 70 72 75 85 100 120 |
| 1680 x 1050 | 16 | 60 |
| 1920 x 1080 | 16 | 60 |

| | | |
|-------------|----|--|
| 1920 x 1200 | 16 | 60 70 72 75 85 100 |
| 1920 x 1440 | 16 | 60 70 72 75 85 |
| 2048 x 1536 | 16 | 60 |
| ----- | | |
| 640 x 480 | 32 | 60 70 72 75 85 100 120 140 144 150 170 200 240 |
| 720 x 480 | 32 | 60 |
| 720 x 576 | 32 | 50 |
| 800 x 600 | 32 | 60 70 72 75 85 100 120 140 144 150 170 200 240 |
| 1024 x 768 | 32 | 60 70 72 75 85 100 120 140 144 150 170 200 240 |
| 1152 x 864 | 32 | 60 70 72 75 85 100 120 140 144 150 170 200 |
| 1280 x 720 | 32 | 60 |
| 1280 x 768 | 32 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1280 x 800 | 32 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1280 x 960 | 32 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1280 x 1024 | 32 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1360 x 768 | 32 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1600 x 900 | 32 | 60 70 72 75 85 100 120 140 144 150 |
| 1600 x 1024 | 32 | 60 70 72 75 85 100 120 |
| 1600 x 1200 | 32 | 60 70 72 75 85 100 120 |
| 1680 x 1050 | 32 | 60 |
| 1920 x 1080 | 32 | 60 |
| 1920 x 1200 | 32 | 60 70 72 75 85 100 |
| 1920 x 1440 | 32 | 60 70 72 75 85 |
| 2048 x 1536 | 32 | 60 |

GeForce 9M, 8M, 100M, 200M, 300M, 400M, 500M Series, and Quadro NVS and Quadro FX Notebook GPUs

This section lists the supported display resolutions, color depths, and refresh rates for the products listed in [“Supported NVIDIA Notebook Products” on page 40](#).

Standard Modes

| | | |
|-------------|----|--|
| 640 x 480 | 8 | 60 70 72 75 85 100 120 140 144 150 170 200 240 |
| 720 x 480 | 8 | 60 |
| 720 x 576 | 8 | 50 |
| 800 x 600 | 8 | 60 70 72 75 85 100 120 140 144 150 170 200 240 |
| 1024 x 768 | 8 | 60 70 72 75 85 100 120 140 144 150 170 200 240 |
| 1152 x 864 | 8 | 60 70 72 75 85 100 120 140 144 150 170 200 |
| 1280 x 720 | 8 | 60 |
| 1280 x 768 | 8 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1280 x 800 | 8 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1280 x 960 | 8 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1280 x 1024 | 8 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1360 x 768 | 8 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1600 x 900 | 8 | 60 70 72 75 85 100 120 140 144 150 |
| 1600 x 1024 | 8 | 60 70 72 75 85 100 120 |
| 1600 x 1200 | 8 | 60 70 72 75 85 100 120 |
| 1680 x 1050 | 8 | 60 |
| 1920 x 1080 | 8 | 60 |
| 1920 x 1200 | 8 | 60 70 72 75 85 100 |
| 1920 x 1440 | 8 | 60 70 72 75 85 |
| 2048 x 1536 | 8 | 60 |
| ----- | | |
| 640 x 480 | 16 | 60 70 72 75 85 100 120 140 144 150 170 200 240 |
| 720 x 480 | 16 | 60 |
| 720 x 576 | 16 | 50 |
| 800 x 600 | 16 | 60 70 72 75 85 100 120 140 144 150 170 200 240 |
| 1024 x 768 | 16 | 60 70 72 75 85 100 120 140 144 150 170 200 240 |
| 1152 x 864 | 16 | 60 70 72 75 85 100 120 140 144 150 170 200 |
| 1280 x 720 | 16 | 60 |
| 1280 x 768 | 16 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1280 x 800 | 16 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1280 x 960 | 16 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1280 x 1024 | 16 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1360 x 768 | 16 | 60 70 72 75 85 100 120 140 144 150 170 |
| 1600 x 900 | 16 | 60 70 72 75 85 100 120 140 144 150 |
| 1600 x 1024 | 16 | 60 70 72 75 85 100 120 |
| 1600 x 1200 | 16 | 60 70 72 75 85 100 120 |
| 1680 x 1050 | 16 | 60 |
| 1920 x 1080 | 16 | 60 |

| | | | |
|-------------|----|----|--|
| 1920 x 1200 | 16 | | 60 70 72 75 85 100 |
| 1920 x 1440 | 16 | | 60 70 72 75 85 |
| 2048 x 1536 | 16 | | 60 |
| ----- | | | |
| 640 x 480 | 32 | | 60 70 72 75 85 100 120 140 144 150 170 200 240 |
| 720 x 480 | 32 | | 60 |
| 720 x 576 | 32 | 50 | |
| 800 x 600 | 32 | | 60 70 72 75 85 100 120 140 144 150 170 200 240 |
| 1024 x 768 | 32 | | 60 70 72 75 85 100 120 140 144 150 170 200 240 |
| 1152 x 864 | 32 | | 60 70 72 75 85 100 120 140 144 150 170 200 |
| 1280 x 720 | 32 | | 60 |
| 1280 x 768 | 32 | | 60 70 72 75 85 100 120 140 144 150 170 |
| 1280 x 800 | 32 | | 60 70 72 75 85 100 120 140 144 150 170 |
| 1280 x 960 | 32 | | 60 70 72 75 85 100 120 140 144 150 170 |
| 1280 x 1024 | 32 | | 60 70 72 75 85 100 120 140 144 150 170 |
| 1360 x 768 | 32 | | 60 70 72 75 85 100 120 140 144 150 170 |
| 1600 x 900 | 32 | | 60 70 72 75 85 100 120 140 144 150 |
| 1600 x 1024 | 32 | | 60 70 72 75 85 100 120 |
| 1600 x 1200 | 32 | | 60 70 72 75 85 100 120 |
| 1680 x 1050 | 32 | | 60 |
| 1920 x 1080 | 32 | | 60 |
| 1920 x 1200 | 32 | | 60 70 72 75 85 100 |
| 1920 x 1440 | 32 | | 60 70 72 75 85 |
| 2048 x 1536 | 32 | | 60 |
| ----- | | | |
| 640 x 480 | 64 | | 60 70 72 75 85 100 120 140 144 150 170 200 240 |
| 720 x 480 | 64 | | 60 |
| 720 x 576 | 64 | 50 | |
| 800 x 600 | 64 | | 60 70 72 75 85 100 120 140 144 150 170 200 240 |
| 1024 x 768 | 64 | | 60 70 72 75 85 100 120 140 144 150 170 200 240 |
| 1152 x 864 | 64 | | 60 70 72 75 85 100 120 140 144 150 170 200 |
| 1280 x 720 | 64 | | 60 |
| 1280 x 768 | 64 | | 60 70 72 75 85 100 120 140 144 150 170 |
| 1280 x 800 | 64 | | 60 70 72 75 85 100 120 140 144 150 170 |
| 1280 x 960 | 64 | | 60 70 72 75 85 100 120 140 144 150 170 |
| 1280 x 1024 | 64 | | 60 70 72 75 85 100 120 140 144 150 170 |
| 1360 x 768 | 64 | | 60 70 72 75 85 100 120 140 144 150 170 |
| 1600 x 900 | 64 | | 60 70 72 75 85 100 120 140 144 150 |
| 1600 x 1024 | 64 | | 60 70 72 75 85 100 120 |
| 1600 x 1200 | 64 | | 60 70 72 75 85 100 120 |
| 1680 x 1050 | 64 | | 60 |
| 1920 x 1080 | 64 | | 60 |
| 1920 x 1200 | 64 | | 60 70 72 75 85 100 |
| 1920 x 1440 | 64 | | 60 70 72 75 85 |
| 2048 x 1536 | 64 | | 60 |

Modes Supported by TV Encoders

Table A.3 and Table A.4 list the NTSC, PAL, and HDTV TV-Out modes supported by the NVIDIA driver.

Table A.3 Mode Support for S-Video and Composite Out

| Resolution | Bit depth | Comments |
|------------|-----------|--|
| 320x200 | 8, 16, 32 | DirectDraw mode; not selectable as a Windows desktop |
| 320x240 | 8, 16, 32 | DirectDraw mode; not selectable as a Windows desktop |
| 640x400 | 8, 16, 32 | DirectDraw mode; not selectable as a Windows desktop |
| 640x480 | 8, 16, 32 | |
| 720x480 | 8, 16, 32 | Overscans (for video) |
| 720x576 | 8, 16, 32 | Overscans (for video) |
| 800x600 | 8, 16, 32 | |
| 1024x768 | 8, 16, 32 | Conexant 25871 only |

Table A.4 Mode Support for Component YPrPb Out and DVI Out

| Resolution | Comments |
|--------------|---|
| 480i (SDTV) | Supported on graphics boards with Conexant 875 or Philips 7108 TV encoders and compatible connectors, and compatible GeForce 8 Series and later GPUs. |
| 480p (EDTV) | |
| 720p (HDTV) | |
| 1080i (HDTV) | |
| 576i (PAL) | |
| 576p (PAL) | |

The driver supports manual overscan correction for component and DVI outputs. See the online NVIDIA Control Panel Help for instructions on how to use the overscan correction features.

Notice

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS, AND OTHER DOCUMENTS (TOGETHER AND SEPARATELY, "MATERIALS") ARE BEING PROVIDED "AS IS." NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY, OR OTHERWISE WITH RESPECT TO THE MATERIALS, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES OF NONINFRINGEMENT, MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE.

Information furnished is believed to be accurate and reliable. However, NVIDIA Corporation assumes no responsibility for the consequences of use of such information or for any infringement of patents or other rights of third parties that may result from its use. No license is granted by implication of otherwise under any patent rights of NVIDIA Corporation. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all other information previously supplied. NVIDIA Corporation products are not authorized as critical components in life support devices or systems without express written approval of NVIDIA Corporation.

HDMI

HDMI, the HDMI logo, and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC.

Macrovision Compliance Statement

NVIDIA Products that are Macrovision enabled can only be sold or distributed to buyers with a valid and existing authorization from Macrovision to purchase and incorporate the device into buyer's products.

Macrovision copy protection technology is protected by U.S. patent numbers 5,583,936; 6,516,132; 6,836,549; and 7,050,698 and other intellectual property rights. The use of Macrovision's copy protection technology in the device must be authorized by Macrovision and is intended for home and other limited pay-per-view uses only, unless otherwise authorized in writing by Macrovision. Reverse engineering or disassembly is prohibited.

OpenCL Notice

Portions of the NVIDIA system software contain components licensed from third parties under the following terms:

Clang & LLVM:

Copyright (c) 2003-2008 University of Illinois at Urbana-Champaign.

All rights reserved.

Portions of LLVM's System library:

Copyright (C) 2004 eXtensible Systems, Inc.

Developed by:

LLVM Team

University of Illinois at Urbana-Champaign

<http://llvm.org>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal with the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimers.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimers in the documentation and/or other materials provided with the distribution.

Neither the names of the LLVM Team, University of Illinois at Urbana-Champaign, nor the names of its contributors may be used to endorse or promote products derived from this Software without specific prior written permission.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE CONTRIBUTORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS WITH THE SOFTWARE.

Trademarks

NVIDIA, the NVIDIA logo, NVIDIA nForce, GeForce, NVIDIA Quadro, NVDDVD, NVIDIA Personal Cinema, NVIDIA Soundstorm, Vanta, TNT2, TNT, RIVA, RIVA TNT, VODOO, VODOO GRAPHICS, WAVEBAY, Accuvision, Antialiasing, Detonator, Digital Vibrance Control, ForceWare, NVRotate, NVSensor, NVSync, PowerMizer, Quincunx Antialiasing, Sceneshare, See What You've Been Missing, StreamThru, SuperStability, T-BUFFER, The Way It's Meant to be Played Logo, TwinBank, TwinView and the Video & Nth Superscript Design Logo are registered trademarks or trademarks of NVIDIA Corporation in the United States and/or other countries. Other company and product names may be trademarks or registered trademarks of the respective owners with which they are associated.

Copyright

© 2009–2012 NVIDIA Corporation. All rights reserved.