Release 177 Graphics Drivers
Release Notes

Version 177.92

**For Windows Vista 32-bit
and Windows Vista 64-bit**

NVIDIA Corporation
August 26, 2008

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 or otherwise under any patent or patent rights of NVIDIA Corporation. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. NVIDIA Corporation products are not authorized for use as critical components in life support devices or systems without express written approval of NVIDIA Corporation.

Trademarks

NVIDIA, the NVIDIA logo, 3DFX, 3DFX INTERACTIVE, the 3dfx Logo, STB, STB Systems and Design, the STB Logo, the StarBox Logo, NVIDIA nForce, GeForce, NVIDIA Quadro, NVDVD, NVIDIA Personal Cinema, NVIDIA Soundstorm, Vanta, TNT2, TNT, RIVA, RIVA TNT, VOODOO, VOODOO GRAPHICS, WAVEBAY, Accuview Antialiasing, the Audio & Nth Superscript Design Logo, CineFX, the Communications & Nth Superscript Design Logo, Detonator, Digital Vibrance Control, DualNet, FlowFX, ForceWare, GIGADUDE, Glide, GOFORCE, the Graphics & Nth Superscript Design Logo, Intellisample, M-BUFFER, nfiniteFX, NV, NVChess, nView, NVKeystone, NVOptimizer, NVPinball, NVRotate, NVSensor, NVSync, the Platform & Nth Superscript Design Logo, 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.

Intel, Indeo, and Pentium are registered trademarks of Intel Corporation. Microsoft, Windows, Windows NT, Windows Vista, Direct3D, DirectDraw, and DirectX are trademarks or registered trademarks of Microsoft Corporation. OpenGL is a registered trademark of Silicon Graphics Inc. PCI Express, PCI-SIG, and the PCI-SIG design marks are registered trademarks and/or service marks of PCI-SIG. DisplayPort is a trademark of the Video Electronics Standards Association (VESA).

Other company and product names may be trademarks or registered trademarks of the respective owners with which they are associated.

Copyright

◆ Table of Contents ◆

List of Tables

C H A P T E R

1

INTRODUCTION TO *RELEASE NOTES*

This edition of *Release Notes* describes the Release 177 Graphics Drivers for Microsoft®
Windows® Vista. 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 177 Driver Changes" on page 3 gives a summary of changes, and fixed and
  open issues in this version.

- "The Release 177 Driver" on page 25 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 31 lists the default resolutions supported by
  the driver.

Changes in this Edition

This edition of the *Release Notes* for Windows Vista includes information about
NVIDIA graphics driver version 177.92, and lists changes made to the driver since
version 175.19. These changes are discussed beginning with the chapter "Release 177
Driver Changes" on page 3.

C H A P T E R

2

RELEASE 177 DRIVER CHANGES

This chapter describes open issues for version 177.92, and resolved issues and driver enhancements for versions of the Release 177 driver up to version 177.92. The chapter contains these sections:

Version 177.92 Highlights

This section provides highlights of version 177.92 of the NVIDIA Release 177 Driver for Windows Vista.

- What's New in Release 177

- What's New in Version 177.92

- Limitations in This Release

What's New in Release 177

- Added support for the following NVIDIA products:

    - GeForce GTX 280

    - GeForce GTX 260

    - GeForce 9500 GT

    - GeForce 9800 GT

    - nForce 780a SLI

    - nForce 750a SLI

- Added support for GeForce GTX 200 series 2-way and 3-way NVIDIA SLI support on Intel® D5400XS motherboards

- Added support for hot-plug detection of VGA displays that provide EDID information.

- Added support for DDC-Ci/MCCS over the DisplayPort AUX channel.

- Added the NVIDIA Control Panel option to expose only consumer electronics (CE) resolutions for HDMI inputs.

What's New in Version 177.92

- Added support for GeForce GTX 200 series 2-way and 3-way NVIDIA SLI support on Intel® D5400XS motherboards

- This driver version includes support for NVIDIA PhysX acceleration on all GeForce 8-series, 9-series and 200-series GPUs with a minimum of 256MB dedicated graphics memory (this driver package installs NVIDIA PhysX System Software v8.08.01).

- See "Changes in Version 177.92" on page 6 for a list of resolved issues.

Limitations in This Release

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

- **NVIDIA SLI Antialiasing**

- **INF Support for Restricted Timings**

  This driver version does not support the use of Restricted Timing settings (R&T strings) in the INF to control mode validation and/or mode setting for custom mode/adapter/monitor combinations. This capability is planned for a later driver release.

NVIDIA Control Panel features that are Not Yet Available

Support for the following control panel features is under development and not yet available under Windows Vista:

- **Display Category**

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

Changes in Version 177.92

The following sections list the changes made and issues resolved since driver version 177.79 and 175.19.

- "Fixed Issues–Windows Vista 32-bit" on page 6

- "Fixed Issues–Windows Vista 64-bit" on page 6

The NVIDIA bug number and driver module are provided for reference.

Fixed Issues—Windows Vista 32-bit

Single- GPU Issues

- GeForce GTX 280/260: Fixed issue where the fan RPM on GeForce GTX 280/260 graphics cards does not return to lower levels after running stressful 3D applications. [449165]

- GeForce 9800 GTX: City of Heroes–only a quarter of the screen is visible when launching the game. [448143]

- GeForce 8800 GTS: The desktop color becomes dark after switching from Clone mode to single-display mode. [353737]

- GeForce 8800 GTX: Company of Heroes (DirectX 10)–the game crashes while loading the performance test at 2560x1600 resolution with all settings at medium. [354041]

Multi- GPU Issues

- [SLI], GeForce 8800 GT: After enabling or disabling SLI mode, the Resize Desktop page does not open after clicking "Resize my desktop" from the NVIDIA Control Panel Resize HDTV Desktop page. [369626]

- [SLI], GeForce 8 series: Company of Heroes–performance is more choppy with SLI mode than with single-GPU mode. [334068]

- [SLI], GeForce 8 Series, GeForce 7 Series: Everquest2–part of the desktop is visible during the intro movie when the game resolution is the same as the desktop resolution. [297754]

Fixed Issues—Windows Vista 64-bit

Single- GPU Issues

- GeForce 9800 GTX: City of Heroes–only a quarter of the screen is visible when launching the game. [448143]

- GeForce 8600: F.E.A.R.–after loading or saving a game, the performance drops for 5—10 seconds before returning to normal. [340874]

Multi- GPU Issues

- [SLI]: Program settings cannot be applied for a newly added SLI profile if the profile duplicates an existing one. [393649]

- [SLI], GeForce 9600 GT, GeForce 8600 GTS: Crysis - the sky becomes corrupted after changing resolution with SLI mode enabled. [385470]

  NVIDIA recommends that you save and then exit the game before changing the resolution.

- [SLI], GeForce 9600 GT, GeForce 6600: Prey - the SLI visual indicator does not appear when viewing SLI load balancing even though SLI mode is enabled and active. [379824]

Changes in Version 177.79

The following sections list the changes made and issues resolved since driver version 177.39 and 175.19.

-

-

The NVIDIA bug number and driver module are provided for reference.

Fixed Issues–Windows Vista 32-bit

Single- GPU Issues

- GeForce GTX 280/260: Call of Duty 4 and Counterstrike–hitching occurs in the game. [439993]

- GeForce 9800 GX2: Civilization 4–white flickering occurs on the map after zooming out at high resolutions and with antialiasing enabled. [391640]

- GeForce 9800 GX2, GeForce 8800 GTX: With multiple displays connected, the NVIDIA Control Panel crashes when loading any saved profile after switching single display modes to another display. [401488]

- [SLI], GeForce 9600 GT: PT Boats: Knights of the Sea (DirectX 10) - there is texture corruption at 1600x1200 resolution and 8xAA. [374320]

Multi- GPU Issues

- [SLI], GeForce 9600 GT, GeForce 8600 GTS: Crysis–the sky becomes corrupted after changing the resolution while playing the game with SLI mode enabled. [385470]

  NVIDIA recommends that you save and then exit the game before changing the resolution.

- [SLI], GeForce 9600 GT, GeForce 6600: Prey– the SLI visual indicator does not appear when viewing SLI load balancing even though SLI mode is enabled and active. [379824]

Fixed Issues–Windows Vista 64-bit

Single- GPU Issues

- GeForce 9800 GX2: Civilization 4–white flickering occurs on the map after zooming out at high resolutions and with antialiasing enabled. [391640]

Multi- GPU Issues

- [SLI], GeForce GTX 280/260: Medusa demo (DirectX 10) - the demo flickers when the character starts turning into stone, during the glow effect. [434883]

- [Quad SLI], GeForce 9800 GX2: Painkiller:Overdose–the game slows down periodically when Quad SLI is enabled. [396665]

- [Quad SLI], GeForce 9800 GX2: Repeatedly enabling/disabling SLI may cause the desktop to corrupt. [408652]

- [SLI], GeForce 9600 GT, GeForce 8600 GTS: Crysis - the sky becomes corrupted after changing resolution with SLI mode enabled. [385470]

  NVIDIA recommends that you save and then exit the game before changing the resolution.

- [SLI], GeForce 9600 GT, GeForce 6600: Prey - the SLI visual indicator does not appear when viewing SLI load balancing even though SLI mode is enabled and active. [379824]

Changes in Version 177.39

The following sections list the changes made and issues resolved since driver version 177.35.

- "Fixed Issues–Windows Vista 64-bit" on page 10

The NVIDIA bug number and driver module are provided for reference.

Fixed Issues–Windows Vista 64-bit

Multi- GPU Issues

- [SLI]: Program settings cannot be applied for a newly added SLI profile if the profile duplicates an existing one. [393649]

Open Issues in Version 177.92

As with every released driver, version 177.92 of the Release 177 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.

Windows Vista 32-bit Issues

Single GPU Issues

All GPUs

- When installing the driver, the last page of the InstallShield Wizard states that "the system has not been modifed" and that you must run the installation again.

  *You do not need to run the installation again. Instead, click **Finish** and then reboot your computer to complete the installation.*

- Half Life 2: Episode 2–the in-game brightness is greatly reduced if Enhanced or Override AA is enabled from the NVIDIA Control Panel. [429254]

- NVIDIA Control Panel: Adding a custom profile with an open bracket in the name results in an error. [437056]

- Counter Strike–the application crashes to the desktop if the resolution or bit-depth is changed from the in-game video options menu.

  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.

GeForce 9 Series

- GeForce 9 Series: Changes to the NVIDIA Control Panel "Change flat panel scaling" option are not applied with DVI+HDTV connected in Clone mode. [439308]

- GeForce 9800 GTX: HellGate: London (DirectX 10)–textures for the character and objects disappear at high settings. [446424]

- GeForce 9800 GTX: Flight Simulator Acceleration (DirectX 10) - the sky box does not render correctly when zoomed all the way out. [436158]

- GeForce 9800 GTX: Flight Simulator Acceleration (DirectX 10) - there is no antialiasing preview window. [436156]

GeForce 8 Series GPUs

- GeForce 8 Series: After installing the driver over version 169.25, an attempt to uninstall the driver from Vista Programs and Features might fail with an 'Error in NVCPL.DLL' message.

  You must uninstall the driver a second time to successfully remove the driver.

- GeForce 8800: Default custom resolutions cannot be created when using the DVI connection. [446476]

- GeForce 8800 GT/GTX: Gears of War–there is tearing in the application, even when V-Sync is turned on from the in-game menu. [438689]

- GeForce 8800 GTX/Ultra: OpenGL applications experience a drop in performance with in-game 8x antialiasing set.

- 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 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]

- GeForce 8600: HD resolutions higher than 720p are not available.[308627]

- GeForce 8600: Serious Sam 2–performance drop at 1280x1024 with HDR and antialiasing enabled. [340691]

- GeForce 8300/8200/8100: EverQuest2–the game shows geometric corruption at resolutions higher than 1280 X 1024. [445460]

Multi-GPU Issues

- [3-way SLI], GeForce 9800 GTX/nForce 750/780a SLI: Portal –there are white lines at the borders of the textures when the game is launched with default settings. [441377]

- [SLI], GeForce 9800 GTX: Mass Effect–there is a band of corruption on the edge of the screen when switching from a high resolution to a lower resolution. [433929]

- [Quad SLI], GeForce 9800 GX2: Test Driver Unlimited–there is pausing/hitching during the cut scene transitions. [395207]

GeForce 8 Series GPUs

- [3xSLI], GeForce 8800 GTX/Ultra: Installing the driver on a 3-way SLI system takes a minimum of 3–4 minutes, and possibly longer if drivers have been previously installed on the system. [354847]

  The installation does complete in time–NVIDIA recommends that you do not interrupt the installation process, but wait for it to complete.

- [SLI], GeForce 8800 GTX: Test Drive Unlimited–the intro cut scene pauses during transitions when SLI mode is enabled. [301655]

Windows Vista 64-bit Issues

Single GPU Issues

- When installing the driver, the last page of the InstallShield Wizard states that "the system has not been modifed" and that you must run the installation again.

  *You do not need to run the installation again. Instead, click **Finish** and then reboot your computer to complete the installation.*

- Half Life 2: Episode 2–the in-game brightness is greatly reduced if Enhanced or Override AA is enabled from the NVIDIA Control Panel. [429254]

GeForce 9 Series

- GeForce 9800 GTX: Flight Simulator Acceleration (DirectX 10) - the sky box does not render correctly when zoomed all the way out. [436158]

- GeForce 9800 GTX: Flight Simulator Acceleration (DirectX 10) - there is no antialiasing preview window. [436156]

- GeForce 8 Series: After installing the driver over version 169.25, an attempt to uninstall the driver from Vista Programs and Features might fail with an 'Error in NVCPL.DLL' message.

  You must uninstall the driver a second time to successfully remove the driver.

- GeForce 8800 GT/GTX: Default custom resolutiona cannot be created when using the DVI connection. [446476]

- GeForce 8800 GTX, NVIDIA Control Panel: The user is unable to select Resize my Desktop while playing an HD DVD. [357674]

- 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 8600: Serious Sam 2–performance drop at 1280x1024 with HDR and antialiasing enabled. [340691]

- nForce 780a SLI: Star Wars Battlefront–the application crashes to the desktop after clicking"Training" from the game control panel with defaalt settings. [439883]

Multi-GPU Issues

- [3-way SLI]: Screen turns black when installing the driver over a previous version. [459180]

  You must reboot the computer using the power or reset button to complete the installation.

GeForce 200 Series

- [Hybrid SLI], GeForce GTX 260/280+nForce 760/780a SLI: Fraps does not run if set to run at Windows launch in Hybrid SLI performance or save power modes. [443794]

GeForce 9 Series

- [3-way SLI], GeForce 9800 GTX: Crysis (64-bit)(DirectX 9)– there is a lengthy pause or the system freezes when firing a weapon.

  This issue does not occur with the DirectX 10 version of the game, and is recommended.

- [SLI], GeForce 9600 GT: Pacific Fighters–the application crashes while changing any 16-bit color depth resolution to a 32-bit color depth resolution. [444897]

- [Quad SLI], GeForce 9800 GTX: Vanguard–there is texture corruption in the water when Rendering Quality is set to High performance. [441690]

- [Quad SLI], GeForce 9800 GX2: Test Driver Unlimited–there is pausing/hitching during the cut scene transitions. [395207]

- [3xSLI], GeForce 8800 GTX/Ultra: Frame drops occur during HD-DVD video playback in the PIP window using PowerDVD. [356445]

- [3xSLI], GeForce 8800 GTX/Ultra: Half-Life: Episode 2 - there are flickering shadows after switching resolutions. [353309]

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 Vista Limitations

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.**

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:

- **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)

- **Windowed quad-buffered stereo**

  This is an operating system limitation.

- **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
  - OneSpace Designer Modeling

- 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

- 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 "compatiblecursors 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.

- 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 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 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]

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

  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.

Application Issues Under SLI Mode

- [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.

- [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 8800: While uninstalling driver 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]

Operating System Issues

- World of Warcraft – there is a 60% drop in performance when running the game in windowed mode with SLI or multi-GPU mode enabled. [289427]

  This is due to a limitation of the Windows Vista operating system and affects all multi-GPU systems. NVIDIA is investigating a workaround for this performance problem.

- GeForce 8800 GTS 320MB: The driver reports incorrect video memory (256 MB) in the Windows Vista Display Properties panel. [290811]

  However, the NVIDIA Control Panel properly reports the dedicated video memory as 320 MB.

- GeForce 8800 GTX, GeForce 7900 GTX: Company of Heroes crashes when trying to load the Cherbourg level.[284273]

  This is an issue with the operating system. A QFE (software patch) from Microsoft is being worked on to fix this issue.

- [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 is an issue with the operating system.

- 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 the operating system.

- GeForce 8800 GTX: DreamScene–running the application results in a "Display driver has stopped responding" error message. [295017]

  This is an issue with the OS.

- 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 is an issue with the OS.

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:

- "Image Sharpening Control not Available with GeForce 8 Series and later GPUs" on page 23
- "Gigabyte GA-6BX Motherboard" on page 23

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.

3

THE RELEASE 177 DRIVER

This chapter covers the following main topics:

Hardware and Software Support

Supported Operating Systems

The Release 177 driver, version 177.92, has been tested with Microsoft Windows® Vista RTM OS builds version 6000 or higher, and supports both 32-bit and 64-bit versions of Windows Vista Editions:

- Windows Vista Home Basic

- Windows Vista Home Premium

- Windows Vista Business

- Windows Vista Enterprise Edition

- Windows Vista Ultimate

Supported NVIDIA Products

Table 3.1 lists the NVIDIA products supported by the Release 177 driver, version 177.92

Table 3.1   Supported NVIDIA Products

Consumer Products
GeForce GTX 280
GeForce GTX 260
GeForce 9800 GX2
GeForce 9800 GTX+
GeForce 9800 GTX
GeForce 9800 GT
GeForce 9600 GT
GeForce 9600 GSO
GeForce 9500 GT
GeForce 9400 GT
GeForce 9300 GS
GeForce 9300 GE
GeForce 8800 Ultra
GeForce 8800 GTX
GeForce 8800 GTS 512
GeForce 8800 GTS
GeForce 8800 GT
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

Supported Languages

The Release 177 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 is minimum 38.2 MB for English-only, and 66.4 MB for International.

Before You Begin

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.

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 Click the driver download link.

3 The license agreement dialog box appears.

4 Click **Accept** if you accept the terms of the agreement, then either open the file or save the file to your PC and open it later.

5 Extract the zip files to a temporary folder on your PC.

6 Open the NVIDIA driver installation .EXE file to launch the NVIDIA InstallShield Wizard.

7 Follow the instructions in the NVIDIA InstallShield Wizard to complete the installation.

   • The last page of the InstallShield Wizard states that "the system has not been modifed" and that you must run the installation again.

   You do not need to run the installation again. Instead, click **Finish** *and then reboot your computer to complete the installation.*

   • On some systems, the screen may turn black if you are installing the driver over a previous version.

   Reboot the computer using the power or reset button to complete the installation.

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.

NVIDIA Driver History

Release 177 is the latest NVIDIA driver available. Table 3.1 contains a summary of some previous driver releases and the versions associated with them. Some versions listed may not have been released outside of NVIDIA.

Table 3.1   NVIDIA Drivers for Windows Vista

Windows Vista Build	NVIDIA ForceWare Driver
RTM OS Builds 6000 or higher	Release 177: Version 177.35, 177.39, 177.41, 177.79, 177.92
RTM OS Builds 6000 or higher	Release 175: Version 175.12, 175.16, 175.19
RTM OS Builds 6000 or higher	Release 174: Version 174.16, 174.53, 174.74
RTM OS Builds 6000 or higher	Release 169: Version 169.02, 169.04, 169.09, 169.12, 169.13, 169.21, 169.25
RTM OS Builds 6000 or higher	Release 167: Version 167.35
RTM OS Builds 6000 or higher	Release 163: Version 163.11, 163.44, 163.67, 163.69, 163.71, 163.75
RTM OS Builds 6000 or higher	Release 162: Version 162.22
RTM OS Builds 6000 or higher	Release 158: Version 158.14, 158.18, 158.24, 158.42, 158.43, 158.45
RTM OS Builds 6000 or higher	Release 100: Version 100.53, 100.54, 100.59, 100.64, 100.65, 101.41 Release 95: Version 97.46
RC2 OS Builds 5744 or higher	Release 95: Version 96.85
RC1 OS Builds 5520.RC1_16384.060812-2235 or higher	Release 95: Version 96.33
Build 5472.WinMain_idx01_5.060713-1900 or higher	Release 95: Versions 95.60–96.00
Windows Vista Beta2	NVIDIA Driver version 88.61
February 06 CTP build 5308.FebCTP_Final.060217-2200 or higher	NVIDIA Drivers 87.15, 87.45
July 05 Vista Beta1	NVIDIA Driver included 'in the box'.
December 05 CTP build 5270.Winmain.051214-1910	NVIDIA Driver included 'in the box'.

A

MODE SUPPORT FOR WINDOWS

This chapter details the Windows modes supported by the Release 177 driver for NVIDIA products. It contains these sections:

- "General Mode Support Information" on page 32
- "Default Modes Supported by GPU" on page 33
- "Modes Supported by TV Encoders" on page 42

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 33.

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	Hardware Requirements
Apple 30″ Cinema HD Display (Dual link DVI)	2560x1600 @ 60 Hz	• All GeForce 7 series GPUs and later
Dell WFP 3007 (Dual Link DVI)	2560x1600 @ 60 Hz	• GeForce 6800 Ultra 512
HP LP3065 dual-link DVI flat panel	2560x1600 @ 60Hz.	• GeForce 6800 with 512 MB

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 9 Series and GeForce 8 Series GPUs" on page 34
- "GeForce 200 Series of GPUs" on page 37
- "GeForce 8300/8200/8100" on page 39

Understanding the Mode Format

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

```
            Resolution       Color Depth            Refresh Rates
              |                |                         |
Example entry: 1024 x 768   32   60 70 72 75 85 100 120 140 144 150 170 200
```

Meaning: Resolution: 1024 x 768
             Color depth: 32 bpp
             Refresh rates: 60 Hz, 70 Hz, 72 Hz, 75 Hz, 85 Hz, 100 Hz, 120 Hz,
                             140 Hz, 144 Hz, 150 Hz, 170 Hz, and 200 Hz
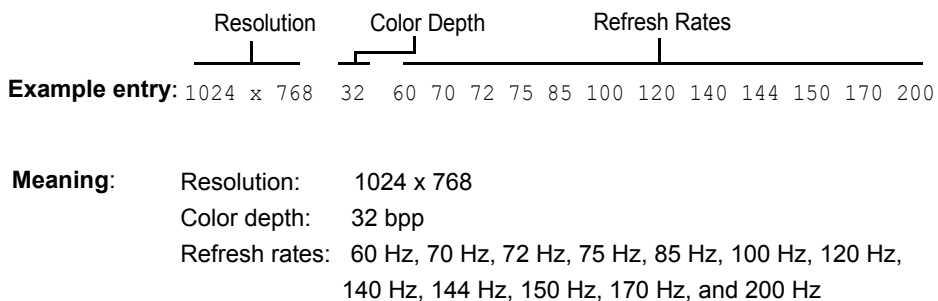
Figure A.1   Mode Format

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 9 Series and GeForce 8 Series GPUs

This sections lists the supported display resolutions, color depths, and refresh rates for the the following products:

- GeForce 9800 GTX+
- GeForce 9800 GTX
- GeForce 9800 GX2
- GeForce 9800 GT
- GeForce 9600 GT
- GeForce 9600 GSO
- GeForce 9500 GT
- GeForce 9400 GT
- GeForce 9300 GS
- GeForce 9300 GE
- GeForce 8800 Ultra
- GeForce 8800 GTX
- GeForce 8800 GTS 512
- GeForce 8800 GTS
- GeForce 8800 GT
- GeForce 8600 GTS
- GeForce 8600 GT
- GeForce 8600 GS
- GeForce 8500 GT
- GeForce 8400 GS
- GeForce 8400 SE
- GeForce 8400
- GeForce 8300 GS

Standard Modes

```
640 x  480   8         60    72 75 85 100
720 x  480   8         60
720 x  576   8      50 60
```

```
 800 x  600   8             60    72 75 85 100
1024 x  768   8             60 70 72 75 85 100
1152 x  864   8             60 70 72 75 85 100 120 140 144 150 170 200
1280 x  720   8             60 70 72 75 85 100
1280 x  768   8             60 70 72 75 85 100
1280 x  800   8             60 70 72 75 85 100
1280 x  960   8             60 70 72 75 85 100
1280 x 1024   8             60 70 72 75 85 100
1360 x  768   8             60 70 72 75 85 100
1440 x  900   8             60 70 72 75 85 100 120 140 144 150 170 200
1600 x 1200   8             60 70 72 75 85 100
1680 x 1050   8             60
1920 x 1080   8    30i
1920 x 1200   8             60    72 75 85 100
1920 x 1440   8             60 70 72 75 85 100
2048 x 1536   8             60 70 72 75 85 100
-----------------------------------------------------------------
 640 x  480  16             60    72 75 85 100
 720 x  480  16             60
 720 x  576  16       50 60
 800 x  600  16             60    72 75 85 100
1024 x  768  16             60 70 72 75 85 100
1152 x  864  16             60 70 72 75 85 100 120 140 144 150 170 200
1280 x  720  16             60 70 72 75 85 100
1280 x  768  16             60 70 72 75 85 100
1280 x  800  16             60 70 72 75 85 100
1280 x  960  16             60 70 72 75 85 100
1280 x 1024  16             60 70 72 75 85 100
1360 x  768  16             60 70 72 75 85 100
1440 x  900  16             60 70 72 75 85 100 120 140 144 150 170 200
1600 x 1200  16             60 70 72 75 85 100
1680 x 1050  16             60
1920 x 1080  16    30i
1920 x 1200  16             60    72 75 85 100
1920 x 1440  16             60 70 72 75 85 100
2048 x 1536  16             60 70 72 75 85 100
-----------------------------------------------------------------
 640 x  480  32             60    72 75 85 100
 720 x  480  32             60
```

```
 720 x  576  32       50 60
 800 x  600  32          60    72 75 85 100
1024 x  768  32          60 70 72 75 85 100
1152 x  864  32          60 70 72 75 85 100 120 140 144 150 170 200
1280 x  720  32          60 70 72 75 85 100
1280 x  768  32          60 70 72 75 85 100
1280 x  800  32          60 70 72 75 85 100
1280 x  960  32          60 70 72 75 85 100
1280 x 1024  32          60 70 72 75 85 100
1360 x  768  32          60 70 72 75 85 100
1440 x  900  32          60 70 72 75 85 100 120 140 144 150 170 200
1600 x 1200  32          60 70 72 75 85 100
1680 x 1050  32          60
1920 x 1080  32   30i
1920 x 1200  32          60    72 75 85
1920 x 1440  32          60 70    75 85 100
2048 x 1536  32          60 70    75 85 100
-----------------------------------------------------------------
 640 x  480  64          60    72 75 85 100
 720 x  480  64          60
 720 x  576  64       50 60
 800 x  600  64          60    72 75 85 100
1024 x  768  64          60 70 72 75 85 100
1152 x  864  64          60 70 72 75 85 100 120 140 144 150 170 200
1280 x  720  64          60 70 72 75 85 100
1280 x  768  64          60 70 72 75 85 100
1280 x  800  64          60 70 72 75 85 100
1280 x  960  64          60 70 72 75 85 100
1280 x 1024  64          60 70 72 75 85 100
1360 x  768  64          60 70 72 75 85 100
1440 x  900  64          60 70 72 75 85 100 120 140 144 150 170 200
1600 x 1200  64          60 70 72 75 85 100
1680 x 1050  64          60
1920 x 1080  64   30i
1920 x 1440  64                         100
2048 x 1536  64                         100
```

GeForce 200 Series of GPUs

This sections lists the supported display resolutions, color depths, and refresh rates for the following products:

- NVIDIA GeForce GTX 280
- NVIDIA GeForce GTX 260

Standard Modes

```
 640 x  480   8   60
 800 x  600   8   60 70 75 85 100
 848 x  480   8   60 70 75 85 100
 960 x  600   8   60 70 75 85 100
1024 x  768   8   60 70 75 85 100
1152 x  864   8   60 70 75 85 100
1280 x  768   8   60
1280 x  800   8   60
1280 x  960   8   60 70 75 85 100
1280 x 1024   8   60 70 75 85 100
1360 x  768   8   60
1600 x 1200   8   60 70 75 85 100
1680 x 1050   8   60
1920 x 1200   8   60
1920 x 1440   8   60 70 75 85 100
2048 x 1536   8   60 70 75 85 100
-----------------------------------------------------------------
 640 x  480  16   60
 800 x  600  16   60 70 75 85 100
 848 x  480  16   60 70 75 85 100
 960 x  600  16   60 70 75 85 100
1024 x  768  16   60 70 75 85 100
1152 x  864  16   60 70 75 85 100
1280 x  768  16   60
1280 x  800  16   60
1280 x  960  16   60 70 75 85 100
1280 x 1024  16   60 70 75 85 100
1360 x  768  16   60
1600 x 1200  16   60 70 75 85 100
```

```
1680 x 1050  16   60
1920 x 1200  16   60
1920 x 1440  16   60 70 75 85 100
2048 x 1536  16   60 70 75 85 100
------------------------------------------------------------------
 640 x  480  32   60
 800 x  600  32   60 70 75 85 100
 848 x  480  32   60 70 75 85 100
 960 x  600  32   60 70 75 85 100
1024 x  768  32   60 70 75 85 100
1152 x  864  32   60 70 75 85 100
1280 x  768  32   60
1280 x  800  32   60
1280 x  960  32   60 70 75 85 100
1280 x 1024  32   60 70 75 85 100
1360 x  768  32   60
1600 x 1200  32   60 70 75 85 100
1680 x 1050  32   60
1920 x 1200  32   60
1920 x 1440  32   60 70 75 85 100
2048 x 1536  32   60 70 75 85 100
------------------------------------------------------------------
 640 x  480  64   60
 800 x  600  64   60 70 75 85 100
 848 x  480  64   60 70 75 85 100
 960 x  600  64   60 70 75 85 100
1024 x  768  64   60 70 75 85 100
1152 x  864  64   60 70 75 85 100
1280 x  768  64   60
1280 x  800  64   60
1280 x  960  64   60 70 75 85 100
1280 x 1024  64   60 70 75 85 100
1360 x  768  64   60
1600 x 1200  64   60 70 75 85 100
1680 x 1050  64   60
1920 x 1200  64   60
1920 x 1440  64   60 70 75 85 100
2048 x 1536  64   60 70 75 85 100
```

GeForce 8300/8200/8100

This sections lists the supported display resolutions, color depths, and refresh rates for the following products:

- NVIDIA GeForce 8300
- NVIDIA GeForce 8200
- NVIDIA GeForce 8100 / nForce 720a

Standard Modes

```
 640 x  480    8      60 70 72 75 85 100 120 140 144 150 170 200 240
 800 x  600    8      60 70 72 75 85 100 120 140 144 150 170 200 240
 848 x  480    8      60 70 72 75 85 100 120 140 144 150 170 200 240
 960 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 70 72 75 85 100 120 140 144 150 170
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
1440 x  900    8      60 70 72 75 85 100 120 140 144 150 170 200
1600 x 1200    8      60 70 72 75 85 100 120
1680 x 1050    8      60
1920 x 1080    8   30i 60 70 72 75 85 100
1920 x 1200    8      60 70 72 75 85 100
1920 x 1440    8      60 70 72 75 85
2048 x 1536    8      60 70 72 75 85
     ------------------------------------------------------------
 640 x  480   16      60 70 72 75 85 100 120 140 144 150 170 200 240
 800 x  600   16      60 70 72 75 85 100 120 140 144 150 170 200 240
 848 x  480   16      60 70 72 75 85 100 120 140 144 150 170 200 240
 960 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 70 72 75 85 100 120 140 144 150 170
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
1440 x  900  16        60 70 72 75 85 100 120 140 144 150 170 200
1600 x 1200  16        60 70 72 75 85 100 120
1680 x 1050  16        60
1920 x 1080  16    30i 60 70 72 75 85 100
1920 x 1200  16        60 70 72 75 85 100
1920 x 1440  16        60 70 72 75 85
2048 x 1536  16        60 70 72 75 85
-------------------------------------------------------------------
 640 x  480  32        60 70 72 75 85 100 120 140 144 150 170 200 240
 800 x  600  32        60 70 72 75 85 100 120 140 144 150 170 200 240
 848 x  480  32        60 70 72 75 85 100 120 140 144 150 170 200 240
 960 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
1152 x  864  32        60 70 72 75 85 100 120 140 144 150 170 200
1280 x  720  32        60 70 72 75 85 100 120 140 144 150
1280 x  768  32        60 70 72 75 85 100 120 140 144 150
1280 x  800  32        60 70 72 75 85 100 120 140 144 150
1280 x  960  32        60 70 72 75 85 100 120 140 144 150
1280 x 1024  32        60 70 72 75 85 100 120 140 144 150
1360 x  768  32        60 70 72 75 85 100 120 140 144 150
1440 x  900  32        60 70 72 75 85 100 120 140 144 150 170 200
1600 x 1200  32        60 70 72 75 85 100
1680 x 1050  32        60
1920 x 1080  32    30i 60 70 72 75 85
1920 x 1200  32        60 70 72 75 85
1920 x 1440  32        60 70 72 75 85
2048 x 1536  32        60 70 72 75 85
-------------------------------------------------------------------
 640 x  480  64        60 70 72 75 85 100 120 140 144 150 170 200 240
 800 x  600  64        60 70 72 75 85 100 120 140 144 150 170 200 240
 848 x  480  64        60 70 72 75 85 100 120 140 144 150 170 200 240
 960 x  600  64        60 70 72 75 85 100 120 140 144 150 170 200 240
1024 x  768  64           70
1152 x  864  64        60 70 72 75 85 100 120 140 144 150 170 200
1280 x  720  64           70
1280 x  768  64        60 70 72 75 85 100
```

```
1280 x  800  64        60 70 72 75 85 100
1280 x  960  64        60 70 72 75 85 100
1280 x 1024  64        60 70 72 75 85 100
1360 x  768  64        60 70 72 75 85 100
1440 x  900  64        60 70 72 75 85 100 120 140 144 150 170 200
1600 x 1200  64        60 70 72 75 85 100
1680 x 1050  64        60
1920 x 1080  64    30i
1920 x 1200  64          70
1920 x 1440  64        60 70 72 75 85
2048 x 1536  64        60 70 72 75 85
```

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 6 Series and GeForce 7 Series GPUs.
480p (EDTV)	
720p (HDTV)	
1080i (HDTV)	
576i (PAL)	
576p (PAL)	

The driver supports manual overscan correction for component and DVI outputs. See the *ForceWare Graphics Driver User's Guide* for instructions on how to use the overscan correction features in the control panel.