



# Release 174 Graphics Drivers

## ***Release Notes***

**Version 174.16**

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

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## CHAPTER

## 1

# INTRODUCTION TO *RELEASE 174 NOTES*

This edition of *Release 174 Notes* describes the NVIDIA Release 174 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

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This document is organized in the following sections:

- “[Release 174 Driver Changes](#)” on page 2 gives a summary of changes, and fixed and open issues in this version.
- “[The Release 174 Driver](#)” on page 15 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 19 lists the default resolutions supported by the driver.

## Changes in this Edition

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This edition of the *Release 174 Notes* for Windows Vista includes information about NVIDIA graphics driver version 174.16, and lists changes made to the driver since version 169.25. These changes are discussed beginning with the chapter “[Release 174 Driver Changes](#)” on page 2.

## CHAPTER

## 2

# RELEASE 174 DRIVER CHANGES

This chapter describes open issues for version 174.16, and resolved issues and driver enhancements for versions of the Release 174 driver up to version 174.16. The chapter contains these sections:

- “Version 174.16 Highlights” on page 3
- “Open Issues in Version 174.16” on page 5
- “Not NVIDIA Issues” on page 7

## Version 174.16 Highlights

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This section provides highlights of version 174.16 of the NVIDIA Release 174 Driver for Windows Vista.

- [What's New in Release 174](#)
- [Limitations in This Release](#)

### What's New in Release 174

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- Added support for the NVIDIA GeForce 9600 GT.
- Added support for NVIDIA Quad SLI technology
- Added the following pages to the NVIDIA Control Panel:
  - Manage Custom Resolutions
  - Adjust Television Color Settings
  - Adjust Screen Size and Position
  - Move CRT Position
- Added the following new Pure Video HD features for the GeForce 9600 GT:
  - Dynamic Contrast Enhancement
  - Dynamic Blue, Green & Skin Tone Enhancements
  - Per-display controls for the video settings in the NVIDIA Control Panel
  - Dual-Stream Decode Acceleration<sup>1</sup>.
  - Microsoft Windows Vista Aero display mode compatibility for Blu-ray & HD DVD playback<sup>1</sup>

1. Users will require updated software from third-party movie players to experience the new Dual-Stream decode acceleration and Aero support for Blu-ray and HD DVD playback features.

## Limitations in This Release

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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.

## Open Issues in Version 174.16

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As with every released driver, version 174.16 of the Release 174 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”](#) on page 5
- [“Windows Vista 64-bit Issues”](#) on page 6

## Windows Vista 32-bit Issues

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### SLI Mode Issues

- [SLI], GeForce 9600 GT: 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: Prey - the SLI visual indicator does not appear when viewing SLI load balancing even though SLI mode is enabled and active. [379824]
- [SLI], GeForce 9600 GT: PT Boats: Knights of the Sea (DirectX 10) - there is texture corruption at 1600x1200 resolution and 8xAA. [374320]

## Windows Vista 64-bit Issues

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### SLI Mode Issues

- [SLI], GeForce 9600 GT: Crysis - the sky becomes corrupted after changing resolution with SLI mode enabled. [385470]
- [SLI], GeForce 9600 GT: Prey - the SLI visual indicator does not appear when viewing the SLI load balancing. [379824]

## Not NVIDIA Issues

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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” on page 7
- “Unsupported Features” on page 8
- “OpenGL Application Issues” on page 10
- “Application Issues” on page 11
- “Operating System Issues” on page 13

## Windows Vista Limitations

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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

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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**
- **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 nTune 5.05 software, which you can download from [NVIDIA.com](http://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 nTune 5.05 software, which you can download from [NVIDIA.com](http://NVIDIA.com).

- **AGP Settings Adjustment**

- **Full-screen Video Mirror**

- **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 Video Color Setting Adjustment**

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.

- **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.

- **Edge Blending**

- **Run display optimization wizard**

- **Run multiple display wizard**
- **Run television setup wizard**
- **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.

- **Video & Television Category**
  - Run television setup wizard
- **NVIDIA nView Desktop Manager**

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

## OpenGL Application Issues

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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

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- 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.*

## **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.*

## Operating System Issues

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- 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.*

## Known Product Limitations

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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:

- “Gigabyte GA-6BX Motherboard” on page 14

### Gigabyte GA-6BX Motherboard

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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.

## CHAPTER

## 3

# THE RELEASE 174 DRIVER

This chapter covers the following main topics:

- “Hardware and Software Support” on page 15
- “Driver Installation” on page 17
- “NVIDIA Driver History” on page 18

## Hardware and Software Support

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### Supported Operating Systems

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The Release 174 driver, version 174.16, 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

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Table 3.1 lists the NVIDIA products supported by the Release 174 driver, version 174.16

**Table 3.1** Supported NVIDIA Products

### Consumer Products

GeForce 9600 GT

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## Supported Languages

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The Release 174 Release 174 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

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## Minimum Hard Disk Space

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The hard disk space requirement is minimum 37 MB for English-only, and 64.5 MB for International.

## Before You Begin

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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

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- 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.

**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

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Release 174 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 Graphics Driver
RTM OS Builds 6000 or higher	Release 174: Version 174.16
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'.

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## APPENDIX



## MODE SUPPORT FOR WINDOWS

This chapter details the Windows modes supported by the Release 174 driver for NVIDIA products. It contains these sections:

- “General Mode Support Information” on page 20
- “Default Modes Supported by GPU” on page 21
- “Modes Supported by TV Encoders” on page 25

## General Mode Support Information

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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 21.

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	<ul style="list-style-type: none"> <li>All GeForce 9 Series GPUs</li> <li>All GeForce 8 Series GPUs</li> </ul>
Dell WFP 3007 (Dual Link DVI)	2560x1600 @ 60 Hz	<ul style="list-style-type: none"> <li>All GeForce 7 series GPUs</li> <li>GeForce 6800 Ultra 512</li> </ul>
HP LP3065 dual-link DVI flat panel	2560x1600 @ 60Hz.	<ul style="list-style-type: none"> <li>GeForce 6800 with 512 MB</li> </ul>

**Table A.2** Non-standard Modes Supported

Resolution
1680 x 1050
1366 x 768

## Default Modes Supported by GPU

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

- “GeForce 9 Series GPUs” on page 22

### Understanding the Mode Format

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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 GPUs

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

- NVIDIA GeForce 9600 GT

### 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		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												

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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		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

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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 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

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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 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

## 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.