



Release 186 Graphics Drivers ***Release Notes***

Version 186.18

**For Windows 7 32-bit
and Windows 7 64-bit**

**NVIDIA Corporation
June 18, 2009**

Published by
NVIDIA Corporation
2701 San Tomas Expressway
Santa Clara, CA 95050

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CHAPTER

1

INTRODUCTION TO *RELEASE NOTES*

This edition of *Release Notes* describes the Release 186 Graphics Drivers for Microsoft® 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 186 Driver Changes](#)” on page 3 gives a summary of changes, and fixed and open issues in this version.
- “[The Release 186 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 21 lists the default resolutions supported by the driver.

Changes in this Edition

This edition of the *Release Notes* for Windows 7 includes information about NVIDIA graphics driver version 186.18, and lists changes made to the driver since version 185.85. These changes are discussed beginning with the chapter “[Release 186 Driver Changes](#)” on page 3.

CHAPTER

2

RELEASE 186 DRIVER CHANGES

This chapter describes open issues for version 186.18, and resolved issues and driver enhancements for versions of the Release 186 driver up to version 186.18. The chapter contains these sections:

- “Version 186.18 Highlights” on page 4
- “Changes in Version 186.18” on page 7
- “Changes in Version 186.08” on page 8
- “Open Issues in Version 186.18” on page 9
- “Not NVIDIA Issues” on page 11
- “Known Product Limitations” on page 14

Version 186.18 Highlights

This section provides highlights of version 186.18 of the NVIDIA Release 186 Driver for Windows 7.

- [What's New in Release 186](#)
- [What's New in Version 186.18](#)
- [Limitations in This Release](#)

What's New in Release 186

Release 186 includes several changes in the following areas:

- [New Product Support](#)
- [OS Support](#)
- [NVIDIA Control Panel Updates](#)
- [Display Driver Updates](#)
- [Video Updates](#)
- [CUDA Updates](#)
- [OpenGL Updates](#)

New Product Support

Added support for the NVIDIA GeForce GTX 275.

OS Support

Release 185 introduces support for the Microsoft Windows 7 operating system.

NVIDIA Control Panel Updates

3D Settings Pages

- **Ambient Occlusion** setting (*new* in the Manage 3D Settings page)
Ambient occlusion enhances depth perception and adds realism to 3D scenes by providing a soft shadow effect to objects based on their placement in the scene.
- **SLI Antialiasing** (*new* in the Manage 3D Settings page)
Now available under Windows Vista and Windows 7 as well as Windows XP.

Display Pages

- **Set up Multiple Displays** (*revised* under Windows Vista and applicable to Windows 7)

In Release 185, when SLI mode is enabled (2-way and Quad SLI), users can now select a display from different GPUs as long as the GPUs are in the same SLI group.

- Displays must still be connected to the same GPU under Clone mode.
- Quad SLI: When using GeForce X2, Quadro X2, or the GeForce GTX 295 graphics cards, only GPUs that have two display connectors can be used to drive displays. Typically, display connectors lined up on the same slot position are connected to the same GPU.
- 3-way SLI: Multiple displays across different GPUs are not supported in 3-way SLI mode. To use more than one display, they must be connected to the same GPU.
- NVIDIA recommends connecting displays to the same GPU to shorten the driver reload time on the initial setup.
- **Adjust Desktop Color Settings** page (*revised* under Windows Vista and applicable to Windows 7)

Applications now have the option of controlling the desktop color settings.

Video & Television Pages

- **HDCP Status**

New page for verifying whether the system is HDCP-capable

- **Adjust TV Color Settings** page (*revised* under Windows Vista and applicable to Windows 7)

Applications now have the option of controlling the TV color settings.

Display Driver Updates

Device Support

Added support for EDID-like devices.

Video Updates

- Compute-based DVD upscaling
- CUDA Video Encoder 1.1: Added support for CUDA-enabled GPUs with less than 32 cores to the NVIDIA Video Encoding library.

CUDA Updates

- CUDA 2.2
- CUDA Video Encoder V1.1: Added support for CUDA-enabled GPUs with less than 32 cores to the NVIDIA Video Encoding library.

OpenGL Updates

- Support for OpenGL 3.0
- Implemented NVX_shader_buffer_load (OpenGL Shading Language).

What's New in Version 186.18

- 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 v9.09.0428).
- See [“Changes in Version 186.18”](#) on page 7 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 Control Panel Display Category**
 - The Graph tab on the Adjust Desktop Color Settings page is not available.

Changes in Version 186.18

The following sections list the changes made and issues resolved since driver version 186.08.

The NVIDIA bug number is provided for reference.

Fixed Issues–Windows 7 (32-bit)

Single GPU Resolved Issues

- GeForce 9500 GS: Changes made to the program settings from the NVIDIA Control Panel->Manage 3D Settings page are not preserved after closing and then reopening the NVIDIA Control Panel. [558199]

Multi-GPU Resolved Issues

- [SLI], GeForce GTX 260: The SLI focus display cannot be switched using “Set SLI configuration” page. [543178]
- [SLI], GeForce 9500 GS: The SLI focus display cannot be set from the NVIDIA Control Panel "Set SLI and PhysX configuration" page. [544972]

Fixed Issues Windows 7 (64-bit)

Single GPU Resolved Issues

- GeForce 9800 GX2: The system does not resume from Standby mode. [558284]
- GeForce 9500 GS: Changes made to the program settings from the NVIDIA Control Panel->Manage 3D Settings page are not preserved after closing and then reopening the NVIDIA Control Panel. [558199]

Changes in Version 186.08

The following sections list the changes made and issues resolved since driver version 185.85.

The NVIDIA bug number is provided for reference.

Fixed Issues–Windows 7 (32-bit)

Single GPU Resolved Issues

- GeForce 200 Series: Applying 16x anisotropic filtering from the NVIDIA Control Panel does not result in sufficient improvement in 3D games. [549801]

Multi-GPU Resolved Issues

- [SLI], GeForce GTX 280: Empire: Total War–flashing or corruption occurs for a few seconds after any loading screen. [536648]

Fixed Issues Windows 7 (64-bit)

Single GPU Resolved Issues

- GeForce 200 Series: Applying 16x anisotropic filtering from the NVIDIA Control Panel does not result in sufficient improvement in 3D games. [549801]
- GeForce 9800 GX2: The NVIDIA Control Panel takes awhile to open when attempting to open from the desktop context menu. [545493]

Multi-GPU Issues

- [SLI]: The PhysX option is disabled by default after driver installation. [544945]

Open Issues in Version 186.18

As with every released driver, version 186.18 of the Release 186 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 7 32-bit Issues” on page 9](#)
- [“Windows 7 64-bit Issues” on page 9](#)

Windows 7 32-bit Issues

Single GPU Issues

- GeForce GTX 285: When setting a custom resolution on the secondary Dualview display using the NVIDIA Control Panel “Manage Custom Resolutions” page, the primary display switches to the newly created resolution. [539807]
- GeForce GTX 280: Assassin's Creed (DirectX 10)–the game hangs at the main menu screen when Ambient Occlusion is activated from the NVIDIA Control Panel. [545516]
- GeForce 200 Series, GeForce 9800 GX2: Changes to the NVIDIA Control Panel->Manage 3D Settings->Override Antialiasing control do not get applied when playing most DirectX 9 games in windowed mode. [555282]

Multi-GPU Issues

- [SLI], GeForce 9800 GX2: World in Conflict–grass textures flicker. [544657]

Windows 7 64-bit Issues

Single GPU Issues

- GeForce 200 Series, NVIDIA Control Panel: After installing the driver, the preview animation (NVIDIA spinning logo) is missing from the Adjust Image Settings with Preview page, the screen flickers when navigating to another page, and Windows Aero cannot be enabled.[566196]

The issue goes away after you reboot the system.

- GeForce GTX 285: When setting a custom resolution on the secondary Dualview display using the NVIDIA Control Panel “Manage Custom Resolutions” page, the primary display switches to the newly created resolution. [539807]

- GeForce GTX 280: Assassin's Creed (DirectX 10)–the game hangs at the main menu screen when Ambient Occlusion is activated from the NVIDIA Control Panel. [545516]
- GeForce 9500 GS: With a VGA and S-Video display connected in Clone mode, the NVIDIA Control Panel Change REsolution controls do not work. [558589]

Multi-GPU Issues

- [SLI], GeForce 200 Series: With two displays connected in Dualview mode, changes to the NVIDIA Control Panel-> Adjust Desktop Color Settings->NVIDIA settings are not preserved after enabling or disabling SLI mode. [554097]
- [SLI], GeForce 8600 GT: Gears of War (DirectX 10)–with SLI mode enabled, there is corruption and flickering with the default settings and in-game antialiasing enabled. [541836]

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 7.

- “Unsupported Features” on page 11
- “Feature Differences from Windows Vista” on page 12
- “OpenGL Application Issues” on page 13

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 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.

- **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.

Feature Differences from Windows Vista

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)

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.

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:

- “GeForce GTX 295 Fan Control and NVIDIA Control Panel Performance Group version 6.03.06.00” on page 14
- “1280x1024 @ 60 Hz not Available on BenQ FP241W Monitors” on page 14
- “Image Sharpening Control not Available with GeForce 8 Series and later GPUs” on page 14
- “Gigabyte GA-6BX Motherboard” on page 14

GeForce GTX 295 Fan Control and 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.

CHAPTER

3

THE RELEASE 186 DRIVER

This chapter covers the following main topics:

- “Hardware and Software Support” on page 15
- “Driver Installation” on page 19

Hardware and Software Support

Supported Operating Systems

The Release 185 driver, version 185.81, has been tested with Microsoft Windows® 7 RC build version 7100, and supports both 32-bit and 64-bit versions.

Supported NVIDIA Products

Table 3.1 lists the NVIDIA products supported by the Release 186 driver, version 186.18

Table 3.1 Supported NVIDIA Products

Consumer Products

GeForce GTX 295
GeForce GTX 285
GeForce GTX 280
GeForce GTX 275
GeForce GTX 260
GeForce GTS 250
GeForce GT 140
GeForce GT 130
GeForce GT 120
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
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

Table 3.1 Supported NVIDIA Products**Consumer Products**

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
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

Table 3.1 Supported NVIDIA Products**Consumer Products**

GeForce 6600 GT
 GeForce 6600
 GeForce 6500
 GeForce 6250
 GeForce 6200SE TurboCache™
 GeForce 6200 TurboCache™
 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 Languages

The Release 186 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 120 MB for English-only, and 185 MB for International.

The hard disk space requirement for 64-bit is minimum 170 MB for English-only, and 230 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.

APPENDIX



MODE SUPPORT FOR WINDOWS

This chapter details the Windows modes supported by the Release 186 driver for NVIDIA products. It contains these sections:

- [“General Mode Support Information” on page 22](#)
- [“Default Modes Supported by GPU” on page 23](#)
- [“Modes Supported by TV Encoders” on page 27](#)

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 23.

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 200, 100, 9 Series, 8 Series, 7 Series, 6 Series, and nForce 7xx/6xx GPUs” on page 24

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 200, 100, 9 Series, 8 Series, 7 Series, 6 Series, and nForce 7xx/6xx GPUs

This sections lists the supported display resolutions, color depths, and refresh rates for the the products listed in [Table 3.1 on page 16](#).

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
1088 x 612	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
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
1088 x 612	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
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 85 100 120 140 144 150 170 200 240
1088 x 612	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
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	60 70 72 75 85 100 120 140 144 150 170 200 240

1088 x 612	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 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.