



Release 179 Graphics Drivers ***Release Notes***

Version 179.48

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

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CHAPTER

1

INTRODUCTION TO *RELEASE NOTES*

This edition of *Release Notes* describes the Release 179 Graphics Drivers for Microsoft® Windows® Vista. NVIDIA provides these notes to describe performance improvements and bug fixes in each documented version of the driver.

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

Structure of the Document

This document is organized in the following sections:

- “[Release 179 Driver Changes](#)” on page 3 gives a summary of changes, and fixed and open issues in this version.
- “[The Release 179 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 Vista includes information about NVIDIA graphics driver version 179.48, and lists changes made to the driver since version 179.28. These changes are discussed beginning with the chapter “[Release 179 Driver Changes](#)” on page 3.

CHAPTER

2

RELEASE 179 DRIVER CHANGES

This chapter describes open issues for version 179.48, and resolved issues and driver enhancements for versions of the Release 179 driver up to version 179.48. The chapter contains these sections:

- “Version 179.48 Highlights” on page 4
- “Changes in Version 178.48” on page 4
- “Open Issues in Version 179.48” on page 7
- “Not NVIDIA Issues” on page 9
- “Known Product Limitations” on page 13

Version 179.48 Highlights

This section provides highlights of version 179.48 of the NVIDIA Release 179 Driver for Windows Vista.

- [What's New in Release 179](#)
- [What's New in Version 179.48](#)
- [Limitations in This Release](#)

What's New in Release 179

- This is a beta driver for Quadro NVS series, GeForce Go 7 series, and GeForce 8M and 9M series notebook GPUs.

Some notebooks are not supported by this release. Refer to the [“Supported NVIDIA Products” on page 16](#) for the list of supported GPUs and notebooks.

- Supports NVIDIA CUDA technology.
- Supports NVIDIA PhysX hardware acceleration on GeForce 8M and 9M GPUs with a minimum of 256MB dedicated graphics memory (this driver package installs NVIDIA PhysX System Software v9.09.0010).
- Supports single GPU and NVIDIA SLI technology on DirectX 9, DirectX 10, and OpenGL.
- Supports Folding@home distributing computing application. Download the high performance client for NVIDIA GPUs in the GeForce Plus Pack and join the NVIDIA team: #131015.

What's New in Version 179.48

- Supports NVIDIA PhysX hardware acceleration on GeForce 8M and 9M GPUs with a minimum of 256MB dedicated graphics memory (this driver package installs NVIDIA PhysX System Software v9.09.0010).
- Added support for the following notebook products:
 - NVIDIA GeForce Go 7 Series GPUs
 - NVIDIA Hybrid SLI notebooks
 - NVIDIA GeForce 9400M, GeForce 9100M, GeForce 7150M, GeForce 7000M, GeForce GT 130M, GeForce G 110M, and GeForce G 105M GPUs
- See [“Changes in Version 179.48” 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/adaptor/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 179.48

The following sections list the changes made and issues resolved since driver version 179.28.

- “Fixed Issues–Windows Vista 32-bit” on page 6

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

Fixed Issues–Windows Vista 32-bit

Single- GPU Issues

- With Clone mode enabled, the external VGA monitor does not turn on when resuming from Standby while the lid is closed. [487749]

Multi- GPU Issues

- [SLI], GeForce 8600M GT: Half-Life 2: Episode Two–there is corruption in the game when V-Sync is enabled under SLI mode. [486666]

Open Issues in Version 179.48

As with every released driver, version 179.48 of the Release 179 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. *Many of these issues are system-specific and may not be seen on your particular notebook.*

- [“Windows Vista 32-bit Issues”](#) on page 7
- [“Windows Vista 64-bit Issues”](#) on page 8

Windows Vista 32-bit Issues

Single GPU Issues

GeForce 9M Series

- GeForce 9600M GT: The shortcut keys for selecting the color option in the NVIDIA Control Panel 'Adjust video color setting' page do not work. [515450]
- GeForce 9600M GT: With Clone mode enabled and the LVDS set to “Do not scale”, the LVDS resolution cannot be changed.[469380]
- GeForce 9500M/9400M: The multi-display mode switches from Dualview to single-display mode after changing the resolution and scaling option for the secondary display. [510300]
- GeForce 9400M G: The settings on the “Change Flat Panel Scaling” page are not updated properly after resizing the desktop and then restoring the default settings. [510854]
- GeForce 9400M G: DVD playback lags under Clone mode. [507032]
- GeForce 9400M G: Under Clone mode, each display has different video color settings from the NVIDIA Control Panel “Adjust Video Color Settings” page. [505275]

GeForce 8M Series

- GeForce 8800M GTX: External HDMI TV cannot be set to single-display mode, and cannot be set as the primary Clone mode or Dualview mode display.[470434]
- GeForce 8700M GT: VGA hotplug/unplug is not detected without refreshing the NVIDIA Control Panel or the Device Manager. [461613]
- GeForce 8600M GS: When a display is connected via component-out and Clone mode is enabled, the system switches to Dualview mode upon resume from Hibernate [490576]

Multi-GPU Issues

- [SLI], GeForce 8800M GTX: Far Cry 2 (DirectX 10)—sky textures show flickering corruption when changing the in-game resolution during gameplay. [492934]
- [SLI], GeForce8800M GTX: Bioshock—the game hangs with a blank screen when toggling to the full-screen mode using Alt+Tab at 1920x1200. [486274]
- [SLI], GeForce 8800M GTX: The display list on the Set SLI Configuration page is not updated properly when hot-plugging or hot-unplugging a display. [478691]
- [SLI], GeForce 8700M GT: SLI display resolution is not restored after disabling SLI mode, changing the resolution under Clone mode, and then re-enabling SLI mode. [462251]
- [SLI], GeForce 8700M GT: When enabling SLI mode, changing the display to view SLI rendered content on does not work. [492292]

Windows Vista 64-bit Issues

Single GPU Issues

- GeForce 9600M GT: The shortcut keys for selecting the color option in the NVIDIA Control Panel 'Adjust video color setting' page do not work. [515450]
- GeForce 9400M G: The settings on the “Change Flat Panel Scaling” page are not updated properly after resizing the desktop and then restoring the default settings. [510854]
- GeForce 8800M GTX: With HDTV connected to component-out and enabled in single-display mode, the display switches to the LVDS upon resume from Sleep or Hibernate mode. [457620]

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” on page 9
- “Unsupported Features” on page 10
- “OpenGL Application Issues” on page 11
- “Application Issues” on page 12

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**
- **NVIDIA nView Desktop Manager**

This is an operating system limitation.

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

- GeForce 8600M GT: Warmonger 2.1—the game intermittently stops responding after changing in-game resolution. [482889]
- GeForce 8600M GT: Dead Space - a “your graphics card does not meet Dead Space minimum requirement” error message appears after launching the game. [491410]

This is a limitation of the application, and only occurs if your monitor does not support 60 Hz refresh rate.

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 13
- “Gigabyte GA-6BX Motherboard” on page 13

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 179 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 179 driver, version 179.48, 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

- “Supported GeForce GPUs” on page 16
- “Supported NVIDIA Quadro NVS GPUs” on page 17

Supported GeForce GPUs

Table 3.1 lists the NVIDIA products supported by the Release 179 driver, version 179.48

Table 3.1 Supported NVIDIA GeForce GPUs

Consumer Products

GeForce 9800M GTX
GeForce 9800M GTS
GeForce 9800M GT
GeForce 9800M GS
GeForce 9700M GTS
GeForce 9700M GT
GeForce 9650M GT
GeForce 9650M GS
GeForce 9600M GT
GeForce 9600M GS
GeForce 9500M GS
GeForce 9500M G
GeForce 9400M G
GeForce 9400M
GeForce 9300M GS
GeForce 9300M G
GeForce 9200M GS
GeForce 9200M GE
GeForce 9100M G
GeForce 8800M GTX
GeForce 8800M GTS
GeForce 8800M GS
GeForce 8700M GT
GeForce 8600M GT
GeForce 8600M GS
GeForce 8400M GT
GeForce 8400M GS
GeForce 8400M G
GeForce 8200M G
GeForce Go 7950 GTX
GeForce Go 7900 SE
GeForce Go 7900 GTX
GeForce Go 7900 GS
GeForce Go 7800 GTX

Table 3.1 Supported NVIDIA GeForce GPUs**Consumer Products**

GeForce Go 7800
 GeForce Go 7700
 GeForce Go 7600
 GeForce Go 7600
 GeForce Go 7400
 GeForce Go 7300
 GeForce Go 7300
 GeForce Go 7200
 GeForce 7150M / nForce 630M
 GeForce 7000M / nForce 610M
 GeForce GT 130M
 GeForce G 110M
 GeForce G 105M

The driver supports notebooks based on the GPUs listed in [Table 3.1](#). However, the following notebooks are *not* supported in this release:

- **BenQ Joybook S42** (will be supported in an upcoming release)
- **Dell Vostro** notebooks (please contact the notebook OEM for driver support for these notebooks)
- **Fujitsu** notebooks (please contact the notebook OEM for driver support for these notebooks)
- **Fujitsu Siemens Amilo Xi 3650** (will be supported in an upcoming release)
- **Lenovo ThinkPad** notebooks (please contact the notebook OEM for driver support for these notebooks)
- **Sony VAIO** notebooks (please contact the notebook OEM for driver support for these notebooks)
- Any notebook that is launched after the release of this driver version.

Supported NVIDIA Quadro NVS GPUs

[Table 3.2](#) lists the NVIDIA products supported by the Release 179 driver, version 179.48

Table 3.2 Supported NVIDIA Quadro NVS GPUs**Consumer Products**

Quadro NVS 510M
 Quadro NVS 300M
 Quadro NVS 160M
 Quadro NVS 150M

Table 3.2 Supported NVIDIA Quadro NVS GPUs**Consumer Products**

Quadro NVS 135M

Quadro NVS 130M

The driver supports notebooks based on the GPUs listed in [Table 3.2](#). However, the following notebooks are *not* supported in this release:

- **Dell Latitude** notebooks (please contact the notebook OEM for driver support for these notebooks)
- **HP Compaq** notebooks (please contact the notebook OEM for driver support for these notebooks)
- **Lenovo ThinkPad** notebooks (please contact the notebook OEM for driver support for these notebooks)
- Any notebook that is launched after the release of this driver version.

Supported Languages

The Release 179 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 143 MB.

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.
- Check to make sure that your notebook has a supported GPU and is not listed in the exclusion list (see “[Supported NVIDIA Products](#)” on page 16).
- It is recommended that you back up your current system configuration.
- If you own a Dell Inspiron 1420, Dell XPS M1330, or Dell XPS M1530, it is highly recommended that you first install this [Dell software update](#).

Installation Instructions

- 1 Follow the instructions on the NVIDIA .com Web site driver download page to locate the appropriate driver to download, based on your hardware and operating system.
- 2 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.

APPENDIX



MODE SUPPORT FOR WINDOWS

This chapter details the Windows modes supported by the Release 179 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 36

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	Hardware Requirements
Apple 30" Cinema HD Display (Dual link DVI)	2560x1600 @ 60 Hz	<ul style="list-style-type: none"> • All GeForce 7 series GPUs and later • GeForce 6800 Ultra 512 • GeForce 6800 with 512 MB
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 7150M and 7000M GPUs” on page 24
- “GeForce 9500M/9300M/9200M Series, GeForce 8400M/ 8200M Series, and Quadro NVS 150M/160M GPUs” on page 26
- “GeForce 9800M/9700M/9650M/9600M/9500M Series, GeForce 8800M/ 8600M Series, and Quadro NVS 320M/140M/135M/130M GPUs” on page 29
- “GeForce 8700M GT” on page 32
- “GeForce Go 7 Series and the Quadro NVS 300M” on page 34

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
1024 x 768	32 60 70 72 75 85 100 120 140 144 150 170 200	

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 7150M and 7000M GPUs

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

- NVIDIA GeForce 7150M/nForce 630M
- NVIDIA GeForce 7000M/nForce 610M

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
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
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
1920 x 1200 32 60
1920 x 1440 32 60 70 75 85 100
2048 x 1536 32 60 70 75 85 100

GeForce 9500M/9300M/9200M Series, GeForce 8400M/8200M Series, and Quadro NVS 150M/160M GPUs

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

- NVIDIA GeForce 9500M GS
- NVIDIA GeForce 9400M G
- NVIDIA GeForce 9300M G
- NVIDIA GeForce 9300M GS
- NVIDIA GeForce 9200M GS
- NVIDIA GeForce 9100M G
- NVIDIA GeForce 8400M GT
- NVIDIA GeForce 8400M GS
- NVIDIA GeForce 8400M G
- NVIDIA GeForce 8200M G
- NVIDIA Quadro NVS 150M
- NVIDIA Quadro NVS 160M

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	
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	
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	
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		
1920 x 1200	64	60						
1920 x 1440	64	60	70	75	85	100		
2048 x 1536	64	60	70	75	85	100		

GeForce 9800M/9700M/9650M/9600M/9500M Series, GeForce 8800M/8600M Series, and Quadro NVS 320M/ 140M/135M/130M GPUs

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

- NVIDIA GeForce 9800M GTX
- NVIDIA GeForce 9800M GT
- NVIDIA GeForce 9800M GTS
- NVIDIA GeForce 9800M GS
- NVIDIA GeForce 9700M GTS
- NVIDIA GeForce 9700M GT
- NVIDIA GeForce 9650M GT
- NVIDIA GeForce 9650M GS
- NVIDIA GeForce 9600M GT
- NVIDIA GeForce 9600M GS
- NVIDIA GeForce 9500M G
- NVIDIA GeForce 8800M GTS
- NVIDIA GeForce 8800M GTX
- NVIDIA GeForce 8600M GT
- NVIDIA GeForce 8600M GS
- NVIDIA Quadro NVS 320M
- NVIDIA Quadro NVS 140M
- NVIDIA Quadro NVS 135M
- NVIDIA Quadro NVS 130M

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	
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 960	8	60 70 75 85 100
1280 x 1024	8	60 70 75 85 100
1600 x 1200	8	60 70 75 85 100
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
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 960	16	60 70 75 85 100
1280 x 1024	16	60 70 75 85 100
1600 x 1200	16	60 70 75 85 100
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
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
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
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
1920 x	1200	64	60				
1920 x	1440	64	60	70	75	85	100
2048 x	1536	64	60	70	75	85	100

GeForce 8700M GT

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

- NVIDIA GeForce 8700M GT

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
1280 x 1024	8	60 70 75 85 100
1360 x 768	8	60
1600 x 1200	8	60 70 75 85 100
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
1280 x 1024	16	60 70 75 85 100
1360 x 768	16	60
1600 x 1200	16	60 70 75 85 100
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	
1280 x 1024	32	60 70 75 85 100	
1360 x 768	32	60	
1600 x 1200	32	60 70 75 85 100	
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	
1280 x 1024	64	60 70 75 85 100	
1360 x 768	64	60	
1600 x 1200	64	60 70 75 85 100	
1920 x 1200	64	60	
1920 x 1440	64	60 70 75 85 100	
2048 x 1536	64	60 70 75 85 100	

GeForce Go 7 Series and the Quadro NVS 300M

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

- NVIDIA GeForce Go 7950 GTX
- NVIDIA GeForce Go 7900 GTX
- NVIDIA GeForce Go 7900 GS
- NVIDIA GeForce Go 7900 SE
- NVIDIA GeForce Go 7800 GTX
- NVIDIA GeForce Go 7800
- NVIDIA GeForce Go 7700
- NVIDIA GeForce Go 7600
- NVIDIA GeForce Go 7450
- NVIDIA GeForce Go 7400
- NVIDIA GeForce Go 7350
- NVIDIA GeForce Go 7300
- NVIDIA GeForce Go 7200
- NVIDIA Quadro NVS 300M

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
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
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
1920 x 1200 32 60
1920 x 1440 32 60 70 75 85 100
2048 x 1536 32 60 70 75 85 100

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.