



# Release 180 Graphics Drivers ***Release Notes***

**Version 180.48**  
for Windows XP

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## CHAPTER

## 1

# INTRODUCTION TO *RELEASE NOTES*

This edition of *Release Notes* describes the Release 180 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:

- “[Changes in the Release 180 Driver for Windows XP](#)” on page 3 gives a summary of changes, and fixed and open issues in this version.
- “[The Release 180 Driver for Windows XP](#)” on page 19 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 27 lists the default resolutions supported by the driver.

## Changes in this Edition

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This edition of the *Release Notes* for Windows XP includes information about NVIDIA graphics driver version 180.48, and lists changes made to the driver since version 178.24. These changes are discussed beginning with the chapter “[Changes in the Release 180 Driver for Windows XP](#)” on page 3.



## CHAPTER

## 2

# CHANGES IN THE RELEASE 180 DRIVER FOR WINDOWS XP

This chapter describes open issues for version 180.48, and resolved issues and driver enhancements for versions of the Release 180 driver up to version 180.48. The chapter contains these sections:

- “Version 180.48 Highlights” on page 4
- “Changes in Version 180.48” on page 5
- “Open Windows XP Issues in Version 180.48” on page 6
- “Not NVIDIA Issues” on page 9
- “Known Product Limitations” on page 13

## Version 180.48 Highlights

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This section provides highlights of version 180.48 of the NVIDIA Release 180 Driver.

- [What's New in Release 180](#)
- [What's New in Version 180.48](#)

### What's New in Release 180

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- Added support for NVIDIA SLI technology on SLI-certified Intel X58-based motherboards with the following GPUs: GeForce GTX 280, GeForce GTX 260, GeForce 9800 GX2, GeForce 9800 GTX+, and GeForce 9800 GTX.

### What's New in Version 180.48

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- This driver version adds 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 v8.10.13).
- Added support for NVIDIA SLI technology on SLI-certified Intel X58-based motherboards with the following GPUs: GeForce GTX 280, GeForce GTX 260, GeForce 9800 GX2, GeForce 9800 GTX+, and GeForce 9800 GTX.
- See [“Changes in Version 180.48”](#) on page 5 for a list of resolved issues in this release.



## Changes in Version 180.48

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The following sections list the changes made and issues resolved since driver versions 178.24.

- [“Fixed Issues–Windows XP 32-bit” on page 5](#)

The NVIDIA bug number is provided for reference.

### Fixed Issues–Windows XP 32-bit

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#### Fixed Single-GPU Issues

- GeForce 9/8 Series: Digital vibrance settings are not applied to the desktop. [475207]

## Open Windows XP Issues in Version 180.48

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As with every released driver, version 180.48 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.

- “NVIDIA Recommendations” on page 6
- “Windows XP 32-bit Issues” on page 6
- “Windows XP 64-bit Issues” on page 8

### NVIDIA Recommendations

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- Single display modes such as TV-only, DFP/LCD-only, or CRT-only provide the best performance and quality from Windows Media Center Edition.

*Dual display modes such as Dualview and nView Clone and Span modes are not recommended.*

### Windows XP 32-bit Issues

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#### NVIDIA Issues—Single-GPU

##### All GPUs

- The NVIDIA Control Panel Antialiasing Gamma Correction value is not enabled in the Global Settings, depending on AA values set in the Program Settings. [441449]
- HQV DVD shows corruption when played using Windows Media Player. [302235]
- 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]
- 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 (2x): With a TV connected to S-Video, the display turns blank after opening the NVIDIA Control Panel, requiring the user to reboot the system. [445384]

- GeForce 9600 GT/8800 GTX: Far Cry 2—Override AA control from the NVIDIA Control Panel does not work in the game. [486104]
- GeForce 9600 GT: Need For Speed Prostreet—changing antialiasing settings from the game menu results in screen corruption. [434171]

### GeForce 8 Series GPUs

- GeForce 8800 GTX: Half-Life 2 Episode 1—purple textures appear with 16xQ CSAA enabled at 2560x1600 resolution.[302602]

## NVIDIA Issues—Multi-GPU

### All GPUs

- [SLI], The NVIDIA Control Panel prompts you to reboot the system after enabling SLI while in Dualview mode.[220320]
- [SLI]: The NVIDIA logo in the Adjust Image Settings with Preview page does not rotate and shows corruption after switching to the display connected to the SLI slave GPU. [402589]
- [SLI]: Far Cry—flickering and shifting sky occurs in the Research level when SLI is enabled. [265091]

*This issue does not occur with V-Sync enabled.*

### GeForce 200 Series

- [SLI], GeForce GTX 280/260: Composite/S-Video TV display goes blank when trying to set any resolution with SLI enabled. [486100]
- [SLI], GeForce GTX 280/260: The NVIDIA Control Panel "Set SLI and PhysX configuration" page shows a false display for the SLI focus display when enabling SLI on the secondary GPU. [477272]
- [SLI], GeForce GTX 280/260: Screen size and position of displays connected via S-Video or composite cannot be adjusted with SLI enabled. [476699]
- [SLI], GeForce GTX 280/260, GeForce 9800 GX2: Unreal Tournament 3—the in-game menus are corrupt at 2560x1600 resolution and with Override AA Combined with an xQ AA value. [432084]

### GeForce 9 Series GPUs

- [SLI], GeForce 9 Series: There is no display after switching the SLI display to the slave GPU. [357511]

## **Windows XP 64-bit Issues**

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### **NVIDIA Issues—Single GPU**

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

## Not NVIDIA Issues

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This section lists issues that are not due to the NVIDIA driver.

- [“Application Issues” on page 9](#)

## Application Issues

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### All GPUs

- Dual Core CPU: Counter Strike 1.6 hangs if you play Cheating Death 4.33.4 at same time.

*This application does not properly recognize dual-core CPUs.*

- Counter-Strike Source frame rate is jumpy.

*Jittery/lagging movement has been seen when starting a game after running the Video Stress Test.*

*Smooth movement is restored after exiting and then restarting the application. The issue does not appear when creating a new game, disconnecting, and then creating another new game.*

- HQV DVD playback is bobbing when running in overlay mode.[272289]

*This is not an NVIDIA bug, but rather an issue with the Intervideo decoder in WinDVD 8.*

- During DVD and HD DVD/Blu-ray playback, a white screen may appear over video when toggling from windowed to full-screen mode. [263449]

*This issue was reported in driver v96.94 as an NVIDIA driver issue, but now appears to be an application issue with PowerDVD. NVIDIA is working with the application developer to provide a fix.*

- 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.*

- S.T.A.L.K.E.R. Shadow of Chernobyl: This application is not compatible with the *Override any application setting* or *Enhance the application setting* antialiasing modes from the NVIDIA Control Panel Manage 3D Settings page.

*Please use the in-game antialiasing options.*

- Splinter Cell Double Agent crashes when loading a single player game.[270517]

*This is an application issue. You can work around this issue by creating a shortcut to launch the game as follows:*

- 1 Navigate to the game install directory, then change to the sub-folder  
   \`SCDA-Offline\system`.
- 2 Create a shortcut to `splintercell4.exe`.
- 3 Add "-ll" to the command line of the shortcut.
- 4 Use this shortcut to launch the single player version of the game.

- HQV DVD playback is bobbing when running in overlay mode.[272289]

*This is not an NVIDIA bug, but rather an issue with the Intervideo decoder in WinDVD 8.*

- Age of Empires 3: Setting application to 1600x1200 with shader quality set to 'very high' causes menus and game to become corrupted.

*This issue can be fixed by installing the v1.07 game patch.*

- Company of Heroes: Dark transparent band appears when running the in-game performance test.

*This is an application issue and can be reproduced on NVIDIA GeForce 7900 and ATI Radeon X1950 GPUs.*

- Elder Scrolls 4 Oblivion: Running at 2560x1600 with NVIDIA Enhanced Application mode 16xQ, extremely rare 1-2 second pauses occur during some fighting. [262685]

*This appears to be an application issue in how large textures are created during the in-game fighting.*

- Far Cry: Water reflection on Archive level is not correct. [253431]

*This appears to be an application issue. NVIDIA is working with the application developer to try to patch their application*

- Half-Life 2 Lost Coast: Color corruption occurs in the video stress test after changing the display mode.

*This is a known application issue.*

- Half-Life 2 Episode One: Gravity Gun has z-fighting problems on certain portions of the gun. [263505]

- Quake4: Random pauses occur during gameplay. [260029]

*This appears to be an application issue that affects testing on Quake4 with dual-core optimizations turned on. Turning off the SMP value in Quake4 eliminates this problem.*

- During DVD and HD DVD/Blu-ray playback, a white screen may appear over video when toggling from windowed to full-screen mode.[263449]

*This issue was reported in driver v96.94 as an NVIDIA driver issue, but now appears to be an application issue with PowerDVD. NVIDIA is working with the application developer to provide a fix.*

- Age of Empires 3: Vertical sliver appears near the right side of the introduction videos. [221738]

- Battlefield 1942 hangs after playing for a few minutes.[265230]

*This is an application issue with dual-core CPUs.*

## GeForce 9 Series GPUs

- GeForce 9500 GT: BioShock—the desktop brightness levels are affected after exiting the game. [443651]

## GeForce 8 Series GPUs

- GeForce 8800 GTX: Counter Strike - the game fails to run in windowed mode with resolutions higher than 1280x1024. [403638]

*This is not an NVIDIA bug, but rather an issue with the application.*

- GeForce 8800 GT: EverQuest 2—the introduction video does not display when antialiasing is enabled and the resolution is higher than 1600x1200. [355649]
- GeForce 8800 GTX/GeForce 7900 GTX: Neverwinter Nights 2—the minimap loses its background when the resolution is changed.[273788]
- GeForce 8800 GTX: Tabula Rasa—in-game antialiasing does not work. [353867]
- Half-Life 2 Lost Coast: GeForce 8800 GTX fog looks different than GeForce 7900 GTX fog, and dynamic shadows look solid black. [262215]

*The GeForce 8800 GTX image quality matches the Microsoft Reference Rasterizer. This issue may affect other Half-Life 2 based engines such as Counter-Strike Source and Half-Life Episode 1. NVIDIA is working with the application developer to try to patch their application.*

- GeForce 8800 GTX: Star Wars: Battlefront 2—there is corruption during the training mission when played at high resolutions. [310721]

*This is not an NVIDIA bug, but rather an issue with the application.*

## Not NVIDIA Issues—SLI Mode

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- [SLI], GeForce 8800 GTX: Neverwinter Nights 2– flickering occurs between screen transitions when SLI is enabled.[296352]
- SLI mode does not appear capable of being enabled with City of Villains.

*This issue occurs because City of Heroes and City of Villains share the same executable name.*

*You can work around this issue by either*

- *modifying the City of Heroes application profile (this will create a second City of Heroes profile) to enable SLI AFR mode, or*
- *set AFR as the rendering mode in Global Profile.*

*For more information on customizing SLI profiles, visit [www.slizone.com](http://www.slizone.com) and navigate to Learn More->How-to Guides.*

- With SLI enabled, the SLI split line does not appear when VSync is forced on.

*This is not a bug, and the applications are, in fact, running in SLI mode. The SLI split line/load bar is not supposed to appear when Vsync is enabled in SLI mode.*



## 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:

- “Image Sharpening Control not Available with GeForce 8 Series and Later GPUs” on page 13
- “Display Output Selection not Available on “Bridgeless” SLI” on page 13
- “More Monitors are Listed in the Windows Device Manager than are Actually Connected” on page 14
- “DirectX Fails When Detaching/Reattaching Displays in Dualview Mode” on page 14
- “OpenGL Viewport Scaling Problem in Horizontal Span Mode” on page 14
- “Video Playback in nView Clone and Span Modes” on page 15
- “No Antialiasing of 3DMark03 Image Quality Screen Captures” on page 15
- “Medal of Honor Under Windows XP / Windows 2000” on page 16
- “Windows XP/2000 Issue with Settings Tab Monitor Positioning” on page 16
- “Antialiasing Problems With Certain Applications” on page 16
- “Poor Quality S-Video Output on Some TVs” on page 17
- “AGP and PCI-E Programs May Hang With AMD K7 and K8 Processors” on page 17
- “Desktop Manager Does Not Re-Center Logon Screen” on page 18
- “Issues with Video Mirror–Windows XP/2000” on page 18

### **Image Sharpening Control not Available with GeForce 8 Series and Later GPUs**

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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.

### **Display Output Selection not Available on “Bridgeless” SLI**

---

On graphics cards that can operate in SLI mode without the SLI connector (such as the GeForce 6600), you cannot select which monitor to display the output. On the SLI display property page, the option box to select the output display is not available.

## More Monitors are Listed in the Windows Device Manager than are Actually Connected

---

- **Problem**

Many monitors are listed in the Windows Device Manager hardware tree even when only a few are actually connected or enabled.

- **Explanation**

NVIDIA chooses to expose all potential monitors even though they are not yet connected. Such an implementation makes multiple device handling easier in certain situations, such as when a user unplugs a monitor and plugs another one in at a different port.

The only impact is a cosmetic in the plug-and-play manager. There is no functional impact at all and the GDI is not aware of the multiple monitor listing.

## DirectX Fails When Detaching/Reattaching Displays in Dualview Mode

---

This problem can be duplicated as follows:

- 1 Enable both displays in Dualview mode.
- 2 Detach monitor 2 and apply settings.
- 3 Reattach monitor 2 and apply settings.

DirectX runtime fails on monitor 1.

*This is not an NVIDIA bug, but a limitation in the operating system where DirectX does not enumerate the second device. DirectX can be restored to both displays by rebooting the system*

## OpenGL Viewport Scaling Problem in Horizontal Span Mode

---

With nView Horizontal Span mode enabled, when opening an OpenGL model in a viewport, the model image is scaled too large to fit in the viewport. The problem occurs with such applications as Maya 5.0 and 3D Studio MAX 4.26.

*This is not an NVIDIA bug, but a limitation in the application's ability to properly maintain the aspect ratio in Horizontal Span mode.*

## Video Playback in nView Clone and Span Modes

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- **Problem**

With nView Clone or Span mode enabled, video playback appears on only one display under the following conditions:

- Under nView Clone mode, when full-screen video mirror is not used.
- Under nView Span mode, when full-screen video mirror is not used and the video is positioned to span across both monitors.

- **Explanation**

With applications that render using the hardware overlay—such as DirectX applications—the default driver behavior is to enable the hardware overlay when nView Clone or Span mode is enabled.

*Because the driver supports only one hardware overlay, the video appears on only one display.*

## No Antialiasing of 3DMark03 Image Quality Screen Captures

---

- **Problem**

After enabling antialiasing from the NVIDIA Properties page, 3DMark03 screen captures—obtained using the application’s screen capture function—might not be antialiased.

- **Explanation**

This is not an NVIDIA bug, but rather a result of different methods used to render antialiased images.

Depending on a combination of factors, the driver may take advantage of the NVIDIA hardware’s ability to bypass the front buffer while rendering an antialiased image. In this case, the front buffer does not contain antialiased data, so if an application takes data from the front buffer—as is the case with 3DMark03’s Image Quality screen captures—then the resulting image is not antialiased.

To accommodate applications that request use of the front buffer, the NVIDIA software can provide the antialiased data in a buffer to the application. Since this negates the advantages of the NVIDIA hardware capability, this support is enabled only when antialiasing is enabled within the application, and not from the NVIDIA control panel.

*In all cases when antialiasing is enabled, screen images as well as screen captures obtained using the Print Screen key are always antialiased.*

## Medal of Honor Under Windows XP / Windows 2000

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- **Problem**

The Electronic Arts game Medal of Honor uses a hard coded buffer to parse the OpenGL extension string. This can cause a system crash under Windows XP and Windows 2000.

- **Workaround**

NVIDIA has implemented Medal of Honor application detection to work around this extension string crash.

## Windows XP/2000 Issue with Settings Tab Monitor Positioning

---

- **Problem**

In the Windows **Display Properties > Settings** tab, the secondary monitors cannot be positioned directly above monitor #1 without snapping horizontally to a position diagonal to monitor #1.

- **When the Problem Occurs**

The problem occurs when four monitors are connected to the graphics adapter card, but only two of them are enabled.

- **Cause and Workaround**

This is a Microsoft—not an NVIDIA—bug, and there is no workaround to correct the positioning of the monitor icons. However, the actual positioning of the displays on the desktop can be corrected using the nView Desktop Manager window as follows:

- 1 Under the Tools tab in the Desktop Manager windows, make sure Automatically Align Displays is checked.
- 2 In the Settings tab, position the appropriate monitor icon above monitor #1, then click **Apply**.

The mouse cursor movement between monitor desktops will correspond to a vertical orientation of the monitors, even though the monitor icons in the Settings tab are diagonal to each other.

**Note:** This will be the case even if the monitor icons are deliberately positioned diagonal to each other.

## Antialiasing Problems With Certain Applications

---

Antialiasing in the NVIDIA Direct3D driver requires each new frame to be rendered from scratch. This requirement adversely affects applications that render only that portion of the content that has changed since the last frame. A common symptom of this problem is geometric structures that incorrectly disappear and re-appear as the scene shifts.

## Poor Quality S-Video Output on Some TVs

---

NVIDIA drivers differentiate an S-video TV from a composite TV by searching for 75-Ohm loads on the chrominance and luminance lines. If the driver detects only one such load, it assumes that it has a composite TV and drives both chroma and luma onto that line. This approach allows both types of TV to display in color.

Unfortunately, some S-video TVs do not apply the correct load to both lines, causing the driver to detect an S-video TV as a composite. The driver, in turn, sends the lower quality signal to the S-video TV. To work around this problem, use the Control Panel to override the **Auto-select** feature. This can be done following these steps:

- 1 In the **Settings** tab of the **Display Properties** Control Panel, click **Advanced**.
- 2 In the **nView** tab, click **Device Settings** and click **Select Output Device**.
- 3 In the **Device Selection** tab, click the **TV** option.
- 4 Change the **Video output format** to **S-video**.

## AGP and PCI-E Programs May Hang With AMD K7 and K8 Processors

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- **Issue**

Microsoft® Windows® 2000 and Windows XP systems using AMD K7 and K8 processors can hang when an AGP or PCI-E program is used.

- **Root Cause**

There is a known problem with Microsoft® Windows® 2000 and Windows XP systems using AMD K7 and K8 CPUs that results in the Microsoft operating system allocating overlapping 4M cached pages with 4k write-combined pages. This condition results in undefined behavior and data corruption, and is explicitly disallowed by the AMD CPU manual.

This problem can affect any device driver in the system that allocates write-combined system memory, but is usually most easily reproduced with graphics drivers since graphics drivers generally make heavy use of write-combined system memory for performance reasons.

- **Resolution**

Microsoft has a knowledge base article on the issue, the text of which is unfortunately quite outdated. While the article only mentions Windows 2000, AGP, and K7, both the root cause and resolution also apply to Windows 2000 or Windows XP, AGP or PCI-E, and AMD K7 or K8. The article can be found at <http://support.microsoft.com/?id=270715>.

The issue is resolved by applying an operating system registry key as described in the referenced article that instructs the Microsoft operating system to not use the 4M pages, thus avoiding the conflict.

The registry key is automatically applied by installation of the latest NVIDIA nForce platform driver package (including 4.57 SMBUS or later). It is imperative for the package to be installed or for the registry key to be applied before the NVIDIA graphics driver or any other device drivers are installed. The registry key takes effect only after an operating system reboot.

## Desktop Manager Does Not Re-Center Logon Screen

---

On Windows XP multi-display systems that are set to nView Span mode, the Windows logon screen is centered on the extended desktop. This usually causes it to be split across two displays, which users may find annoying. Although users can normally use the Desktop Manager to restrict a window's appearance to one display, security restrictions in the operating systems prevent this in the case of the logon screen.

## Issues with Video Mirror—Windows XP/2000

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Table 2.1 lists current known issues with NVIDIA Video Mirror functionality.

**Table 2.1** Known Issues with Video Mirror

Video Mirror is not yet implemented for applications using Video Port Extensions (VPE).
If Video Mirror is enabled but a full-screen display does not appear, one of the following problems may have occurred:
Video Mirror can only function when overlay is being used. The video player may not be able to create an overlay if another application is using the overlay, or the desktop display resolution is too high. You can lower the desktop resolution, pixel depth, or refresh rate.
Video Mirror requires some extra memory to run. Try closing other DirectX or OpenGL applications that may be running.
You may need to close and restart your video application for Video Mirror enabling or disabling to take effect.
Some video players that cannot detect the presence of Video Mirror stop playing if they are minimized or completely obscured by another window. For example, Media Player can exhibit this problem.

## CHAPTER

## 3

# THE RELEASE 180 DRIVER FOR WINDOWS XP

This chapter covers the following main topics:

- “Hardware and Software Support” on page 19
- “Driver Installation” on page 21
- “NVIDIA Driver History” on page 24

## Hardware and Software Support

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### Supported Operating Systems

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This Release 180 driver includes drivers designed for the following Microsoft® operating systems:

- Microsoft Windows® XP
  - Windows XP Media Center Edition 2005 Update Rollup2
  - Windows XP Media Center Edition 2005
  - Windows XP Media Center Edition 2004
  - Windows XP Professional
  - Windows XP Home Edition
  - Windows XP Professional x64 Edition

## Supported NVIDIA Products

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Table 3.1 lists the NVIDIA GPUs supported by this Release 180 driver.

**Table 3.1** Supported NVIDIA Consumer Products

<b>Product</b>	<b>Windows XP 32-bit</b>	<b>Windows XP Professional x64</b>
GeForce GTX 280	X	X
GeForce GTX 260	X	X
GeForce 9800 GTX+	X	X
GeForce 9800 GTX	X	X
GeForce 9800 GX2	X	X
GeForce 9800 GT	X	X
GeForce 9600 GT	X	X
GeForce 9600 GSO	X	X
GeForce 9500 GT	X	X
GeForce 9400 GT	X	X
GeForce 9300 GS	X	X
GeForce 9300 GE	X	X
GeForce 8800 Ultra	X	X
GeForce 8800 GTX	X	X
GeForce 8800 GTS 512	X	X
GeForce 8800 GTS	X	X
GeForce 8800 GT	X	X

## Supported Languages

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The Release 180 Release 180 Graphics Driver 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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## System Requirements

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The hard disk space requirement for 32 bit is minimum 68.3 MB for English-only, and 107 MB for International.

The hard disk space requirement for 64 bit is minimum 80 MB for English-only, and 117 MB for International.

## Installation Instructions

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### Before You Begin

- **If NVIDIA nTune is already installed**

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 nTune.

- If you do not have System Administrator access privileges, it is assumed that the appropriate person with System Administrator access in your organization will set up and install the NVIDIA graphics driver software on your computer.
- The installation process copies all necessary files for operation into the appropriate directories.
- The nView system files are copied to your **Windows\System** directory.
- nView Desktop Manager Profile files (\*.tvp) are saved in the **Windows\Nview** directory.

Depending on the version of the NVIDIA driver previously installed, profiles may also be located in the **Documents and Settings\All Users\Application Data\nView\_Profiles** directory.

- As part of the install process, an uninstall is registered in your system.
- Under Windows XP, the NVIDIA driver is installed in “Dualview mode” display. However, note that the second display is not activated by default, but must be enabled.

## Preserving Settings Before Upgrading Your Software

Before uninstalling or installing software, you can preserve your nView Desktop Manager and/or NVIDIA Display settings by using the nView Desktop Manager Profiles features.

**Note:** Follow the steps below and/or refer to the *NVIDIA nView Desktop Manager User's Guide* for details. Under Windows XP/2000 and Windows NT 4.0, you must have, at least, **Power User** access privileges in order to create or save a profile. (Refer to Windows Help if you need an explanation of Power User access rights.)

Follow the steps below and/or refer to the *NVIDIA nView Desktop Manager User's Guide* for details.

- 1 Open the nView Desktop Manager Profiles page (Figure 4.1).
- 2 To preserve your current settings, you can use either the **Save** or the **New** option from the nView Desktop Manager Profiles page:
  - If you want to overwrite the currently loaded profile with your changed settings, use the **Save** option. Notice that a warning message indicates that you are about to overwrite the selected profile.
  - If you want to retain the currently loaded profile and want to save your changed settings to a new file, click the **New** option. Enter a name and description of the profile in the New Profile dialog box. For example, you can name this profile **My Settings**.
- 3 If you are an “advanced” user and want to customize certain settings in the saved profile, click **Advanced** << to expand the dialog box (Figure 4.2).
- 4 To customize the settings, you can select or clear any of the settings check boxes.
- 5 Click **Save** to return to the main Profiles page.

If you created a new profile, you will see the name of the newly created profile in the profiles list.

If you overwrote a current profile, the same profile name is retained in the list.

**Note:** nView Desktop Manager profile (.tvp) files are saved in the **Windows\nView** directory. Depending on the version of the NVIDIA driver previously installed, profiles may also be saved in the **Documents and Settings\All Users\Application Data\ nView\_Profiles** directory.

- 6 Now you can uninstall your current driver for a driver upgrade.
- 7 After you restart your computer following an NVIDIA new driver install, you can easily load the saved profile from the Profiles page of nView Desktop Manager.

## About Using Saved Profiles in Another Computer

You can easily use any saved profile (.tvp file in the **Windows\nView** directory) from one computer and use it in another computer, if you want. You'll need to copy it to the **Windows\nView** directory of a computer that has the NVIDIA ForceWare graphics display driver, etc. installed properly. Then this profile can be loaded from another computer from the nView Desktop Manager Profiles page just as it can from your original computer.

## Uninstalling the NVIDIA Display Driver Software

*Note: It is highly recommended that you follow the steps in this section to completely uninstall the NVIDIA Display Driver software before updating to a new version of the software.*

To uninstall the nView software, follow these steps:

- 1 From the Windows taskbar, click **Start > Settings > Control Panel** to open the Control Panel window.
- 2 Double-click the **Add/Remove Programs** item.
- 3 Click the **NVIDIA Display Driver** item from the list.
- 4 Click **Change/Remove**.
- 5 Click **Yes** to continue.

A prompt appears asking whether you want to delete all of the saved nView profiles.

- If you click **Yes**, all of the nView software and all of your saved profiles will be deleted.
- If you click **No**, the nView software is removed, but the profile files are saved in the `Windows\nView` directory on your hard disk.

Your system now restarts.

## Installing the NVIDIA ForceWare Graphics Drivers

- 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.

## NVIDIA Driver History

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Release 180 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

Driver	Name	Versions	Comments
Release 180	GeForce	180.48	
Release 178	GeForce	178.01, 178.13, 178.24	
Release 177	GeForce	177.35, 177.39, 177.41, 177.79, 177.92, 177.98	
Release 175	GeForce	175.16, 175.19	
Release 174	GeForce	174.16, 174.53, 174.74	
Release 169	ForceWare	169.04, 169.09, 169.13, 169.21	
Release 167	ForceWare	167.35	
Release 163	ForceWare	163.44, 163.67, 163.69, 163.71, 163.75	
Release 162	ForceWare	162.18	
Release 158	ForceWare	158.19, 158.22	
Release 95	ForceWare	96.94, 95.97, 97.02, 97.44, 97.92, 97.94	
Release 90	ForceWare	91.28, 91.31, 91.33, 91.37, 91.45, 91.47	
Release 80	ForceWare	, 81.82, 81.84, 81.85, 81.87, 81.94, 81.95, 81.98, 82.12, 82.14, 83.40 84.12, 84.20, 84.21, 84.25, 84.43	
Release 75	ForceWare	77.56 77.72, 77.76, 77.77, 78.01, 78.05	
Release 70	ForceWare	71.84, 71.89	
Release 65	ForceWare	66.77, 66.93, 67.02, 67.03, 67.66	
Release 60	ForceWare	61.76, 61.77	
Release 55	ForceWare	56.64, 56.72, 57.30	

**Table 3.1** NVIDIA Drivers for Windows (continued)

<b>Driver</b>	<b>Name</b>	<b>Versions</b>	<b>Comments</b>
Release 50	ForceWare	52.16, 53.04	
Release 40	Detonator FX	44.03–45.xx	
Release 40	Detonator 40	40.60–44.02	
Release 35	Detonator 35	35.60–37.80	
Release 25	Detonator 25	26.00–32.90	
Release 20	Detonator XP	21.83–23.xx	
Release 10	Detonator 3 v1x.xx	10.00–17.xx	

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## APPENDIX



## MODE SUPPORT FOR WINDOWS

This chapter details the Windows modes supported by the Release 180 driver for NVIDIA products. It contains these sections:

- “General Mode Support Information” on page 28
- “Default Modes Supported by GPU for Windows XP” on page 29
- “Modes Supported by TV Encoders” on page 43

## 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 for Windows XP”](#) on page 29.

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 for Windows XP

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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, GeForce 8 Series” on page 30
- “GeForce 200 Series of GPUs” on page 36

### 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
<b>Example entry:</b> 1024 x 768	32 60 70 72 75 85 100 120 144 150 170 200	

<b>Meaning:</b>	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, GeForce 8 Series

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This sections lists the supported display resolutions, color depths, and refresh rates for 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
- GeForce 9300
- GeForce 9200
- GeForce 8800 Ultra
- GeForce 8800 GTX
- GeForce 8800 GTS 512
- GeForce 8800 GTS
- GeForce 8800 GT

### Standard Modes

640 x 480	8	60 70 72 75 85 100 120 140 144 150 170 200 240
720 x 480	8	60
720 x 576	8	50 60
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

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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 900 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 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
720 x 480 16     60
720 x 576 16    50 60
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 900 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 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
720 x 480 32     60
720 x 576 32    50 60
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

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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 900	32	60 70 72 75 85 100
1600 x 1200	32	60 70 72 75 85 100
1680 x 1050	32	60
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

## Horizontal Spanning Modes

1280 x 480	8	60 70 72 75 85 100 120 140 144 150 170 200 240
1600 x 600	8	60 70 72 75 85 100 120 140 144 150 170 200 240
1696 x 480	8	60 70 72 75 85 100 120 140 144 150 170 200 240
1920 x 600	8	60 70 72 75 85 100 120 140 144 150 170 200 240
2048 x 768	8	60 70 72 75 85 100 120 140 144 150 170 200 240
2304 x 864	8	60 70 72 75 85 100 120 140 144 150 170 200
2560 x 720	8	60 70 72 75 85 100 120 140 144 150 170
2560 x 768	8	60 70 72 75 85 100 120 140 144 150 170
2560 x 800	8	60 70 72 75 85 100 120 140 144 150 170
2560 x 960	8	60 70 72 75 85 100 120 140 144 150 170
2560 x 1024	8	60 70 72 75 85 100 120 140 144 150 170
2720 x 768	8	60 70 72 75 85 100 120 140 144 150 170
2880 x 900	8	60 70 72 75 85 100 120 140 144 150 170 200
3200 x 900	8	60 70 72 75 85 100 120
3200 x 1200	8	60 70 72 75 85 100 120
3360 x 1050	8	60
3840 x 1200	8	60 70 72 75 85 100
3840 x 1440	8	60 70 72 75 85
4096 x 1536	8	60 70 72 75 85

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1280 x 480	16	60 70 72 75 85 100 120 140 144 150 170 200 240
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1600 x 600	16	60 70 72 75 85 100 120 140 144 150 170 200 240
1696 x 480	16	60 70 72 75 85 100 120 140 144 150 170 200 240
1920 x 600	16	60 70 72 75 85 100 120 140 144 150 170 200 240
2048 x 768	16	60 70 72 75 85 100 120 140 144 150 170 200 240
2304 x 864	16	60 70 72 75 85 100 120 140 144 150 170 200
2560 x 720	16	60 70 72 75 85 100 120 140 144 150 170
2560 x 768	16	60 70 72 75 85 100 120 140 144 150 170
2560 x 800	16	60 70 72 75 85 100 120 140 144 150 170
2560 x 960	16	60 70 72 75 85 100 120 140 144 150 170
2560 x 1024	16	60 70 72 75 85 100 120 140 144 150 170
2720 x 768	16	60 70 72 75 85 100 120 140 144 150 170
2880 x 900	16	60 70 72 75 85 100 120 140 144 150 170 200
3200 x 900	16	60 70 72 75 85 100 120
3200 x 1200	16	60 70 72 75 85 100 120
3360 x 1050	16	60
3840 x 1200	16	60 70 72 75 85 100
3840 x 1440	16	60 70 72 75 85
4096 x 1536	16	60 70 72 75 85

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1280 x 480	32	60 70 72 75 85 100 120 140 144 150 170 200 240
1600 x 600	32	60 70 72 75 85 100 120 140 144 150 170 200 240
1696 x 480	32	60 70 72 75 85 100 120 140 144 150 170 200 240
1920 x 600	32	60 70 72 75 85 100 120 140 144 150 170 200 240
2048 x 768	32	60 70 72 75 85 100 120 140 144 150 170 200
2304 x 864	32	60 70 72 75 85 100 120 140 144 150 170 200
2560 x 720	32	60 70 72 75 85 100 120 140 144 150
2560 x 768	32	60 70 72 75 85 100 120 140 144 150
2560 x 800	32	60 70 72 75 85 100 120 140 144 150
2560 x 960	32	60 70 72 75 85 100 120 140 144 150
2560 x 1024	32	60 70 72 75 85 100 120 140 144 150
2720 x 768	32	60 70 72 75 85 100 120 140 144 150
2880 x 900	32	60 70 72 75 85 100 120 140 144 150 170 200
3200 x 900	32	60 70 72 75 85 100
3200 x 1200	32	60 70 72 75 85 100
3360 x 1050	32	60
3840 x 1200	32	60 70 72 75 85
3840 x 1440	32	60 70 72 75 85
4096 x 1536	32	60 70 72 75 85

## Vertical Spanning Modes

640 x 960	8	60 70 72 75 85 100 120 140 144 150 170 200 240
800 x 1200	8	60 70 72 75 85 100 120 140 144 150 170 200 240
848 x 960	8	60 70 72 75 85 100 120 140 144 150 170 200 240
960 x 1200	8	60 70 72 75 85 100 120 140 144 150 170 200 240
1024 x 1536	8	60 70 72 75 85 100 120 140 144 150 170 200 240
1152 x 1728	8	60 70 72 75 85 100 120 140 144 150 170 200
1280 x 1440	8	60 70 72 75 85 100 120 140 144 150 170
1280 x 1536	8	60 70 72 75 85 100 120 140 144 150 170
1280 x 1600	8	60 70 72 75 85 100 120 140 144 150 170
1280 x 1920	8	60 70 72 75 85 100 120 140 144 150 170
1280 x 2048	8	60 70 72 75 85 100 120 140 144 150 170
1360 x 1536	8	60 70 72 75 85 100 120 140 144 150 170
1440 x 1800	8	60 70 72 75 85 100 120 140 144 150 170 200
1600 x 1800	8	60 70 72 75 85 100 120
1600 x 2400	8	60 70 72 75 85 100 120
1680 x 2100	8	60
1920 x 2400	8	60 70 72 75 85 100
1920 x 2880	8	60 70 72 75 85
2048 x 3072	8	60 70 72 75 85

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640 x 960	16	60 70 72 75 85 100 120 140 144 150 170 200 240
800 x 1200	16	60 70 72 75 85 100 120 140 144 150 170 200 240
848 x 960	16	60 70 72 75 85 100 120 140 144 150 170 200 240
960 x 1200	16	60 70 72 75 85 100 120 140 144 150 170 200 240
1024 x 1536	16	60 70 72 75 85 100 120 140 144 150 170 200 240
1152 x 1728	16	60 70 72 75 85 100 120 140 144 150 170 200
1280 x 1440	16	60 70 72 75 85 100 120 140 144 150 170
1280 x 1536	16	60 70 72 75 85 100 120 140 144 150 170
1280 x 1600	16	60 70 72 75 85 100 120 140 144 150 170
1280 x 1920	16	60 70 72 75 85 100 120 140 144 150 170
1280 x 2048	16	60 70 72 75 85 100 120 140 144 150 170
1360 x 1536	16	60 70 72 75 85 100 120 140 144 150 170
1440 x 1800	16	60 70 72 75 85 100 120 140 144 150 170 200
1600 x 1800	16	60 70 72 75 85 100 120
1600 x 2400	16	60 70 72 75 85 100 120

1680 x 2100	16	60
1920 x 2400	16	60 70 72 75 85 100
1920 x 2880	16	60 70 72 75 85
2048 x 3072	16	60 70 72 75 85
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640 x 960	32	60 70 72 75 85 100 120 140 144 150 170 200 240
800 x 1200	32	60 70 72 75 85 100 120 140 144 150 170 200 240
848 x 960	32	60 70 72 75 85 100 120 140 144 150 170 200 240
960 x 1200	32	60 70 72 75 85 100 120 140 144 150 170 200 240
1024 x 1536	32	60 70 72 75 85 100 120 140 144 150 170 200
1152 x 1728	32	60 70 72 75 85 100 120 140 144 150 170 200
1280 x 1440	32	60 70 72 75 85 100 120 140 144 150
1280 x 1536	32	60 70 72 75 85 100 120 140 144 150
1280 x 1600	32	60 70 72 75 85 100 120 140 144 150
1280 x 1920	32	60 70 72 75 85 100 120 140 144 150
1280 x 2048	32	60 70 72 75 85 100 120 140 144 150
1360 x 1536	32	60 70 72 75 85 100 120 140 144 150
1440 x 1800	32	60 70 72 75 85 100 120 140 144 150 170 200
1600 x 1800	32	60 70 72 75 85 100
1600 x 2400	32	60 70 72 75 85 100
1680 x 2100	32	60
1920 x 2400	32	60 70 72 75 85
1920 x 2880	32	60 70 72 75 85
2048 x 3072	32	60 70 72 75 85

## GeForce 200 Series of GPUs

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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

320 x 200	8		60 70 72 75
320 x 240	8		60 70 72 75
400 x 300	8		60 70 72 75
480 x 360	8		60 70 72 75
512 x 384	8		60 70 72 75
640 x 400	8		60 70 72 75
640 x 480	8		60 70 72 75 85 100 120 140 144 150 170 200 240
720 x 480	8		60
720 x 576	8	50 60	
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 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
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	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

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320 x 200	16		60 70 72 75
320 x 240	16		60 70 72 75
400 x 300	16		60 70 72 75
480 x 360	16		60 70 72 75
512 x 384	16		60 70 72 75
640 x 400	16		60 70 72 75
640 x 480	16		60 70 72 75 85 100 120 140 144 150 170 200 240
720 x 480	16		60
720 x 576	16	50	60
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 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
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	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

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320 x 200	32		60 70 72 75
320 x 240	32		60 70 72 75
400 x 300	32		60 70 72 75
480 x 360	32		60 70 72 75
512 x 384	32		60 70 72 75
640 x 400	32		60 70 72 75
640 x 480	32		60 70 72 75 85 100 120 140 144 150 170 200 240
720 x 480	32		60
720 x 576	32	50	60

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
1088 x 612	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
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
1600 x 900	32		60 70 72 75 85 100 120
1600 x 1024	32		60 70 72 75 85 100
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

## Horizontal Spanning Modes

1280 x 480	8		60 70 72 75 85 100 120 140 144 150 170 200 240
1600 x 600	8		60 70 72 75 85 100 120 140 144 150 170 200 240
1696 x 480	8		60 70 72 75 85 100 120 140 144 150 170 200 240
1920 x 600	8		60 70 72 75 85 100 120 140 144 150 170 200 240
2048 x 768	8		60 70 72 75 85 100 120 140 144 150 170 200 240
2176 x 612	8		60 70 72 75 85 100 120 140 144 150 170 200 240
2304 x 864	8		60 70 72 75 85 100 120 140 144 150 170 200
2560 x 720	8		60 70 72 75 85 100 120 140 144 150 170
2560 x 768	8		60 70 72 75 85 100 120 140 144 150 170
2560 x 800	8		60 70 72 75 85 100 120 140 144 150 170
2560 x 960	8		60 70 72 75 85 100 120 140 144 150 170
2560 x 1024	8		60 70 72 75 85 100 120 140 144 150 170
2720 x 768	8		60 70 72 75 85 100 120 140 144 150 170
3200 x 900	8		60 70 72 75 85 100 120 140 144 150
3200 x 1024	8		60 70 72 75 85 100 120

3200 x 1200	8		60 70 72 75 85 100 120
3360 x 1050	8		60
3840 x 1080	8	30i	60 70 72 75 85 100
3840 x 1200	8		60 70 72 75 85 100
3840 x 1440	8		60 70 72 75 85
4096 x 1536	8		60 70 72 75 85
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1280 x 480	16		60 70 72 75 85 100 120 140 144 150 170 200 240
1600 x 600	16		60 70 72 75 85 100 120 140 144 150 170 200 240
1696 x 480	16		60 70 72 75 85 100 120 140 144 150 170 200 240
1920 x 600	16		60 70 72 75 85 100 120 140 144 150 170 200 240
2048 x 768	16		60 70 72 75 85 100 120 140 144 150 170 200 240
2176 x 612	16		60 70 72 75 85 100 120 140 144 150 170 200 240
2304 x 864	16		60 70 72 75 85 100 120 140 144 150 170 200
2560 x 720	16		60 70 72 75 85 100 120 140 144 150 170
2560 x 768	16		60 70 72 75 85 100 120 140 144 150 170
2560 x 800	16		60 70 72 75 85 100 120 140 144 150 170
2560 x 960	16		60 70 72 75 85 100 120 140 144 150 170
2560 x 1024	16		60 70 72 75 85 100 120 140 144 150 170
2720 x 768	16		60 70 72 75 85 100 120 140 144 150 170
3200 x 900	16		60 70 72 75 85 100 120 140 144 150
3200 x 1024	16		60 70 72 75 85 100 120
3200 x 1200	16		60 70 72 75 85 100 120
3360 x 1050	16		60
3840 x 1080	16	30i	60 70 72 75 85 100
3840 x 1200	16		60 70 72 75 85 100
3840 x 1440	16		60 70 72 75 85
4096 x 1536	16		60 70 72 75 85
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1280 x 480	32		60 70 72 75 85 100 120 140 144 150 170 200 240
1600 x 600	32		60 70 72 75 85 100 120 140 144 150 170 200 240
1696 x 480	32		60 70 72 75 85 100 120 140 144 150 170 200 240
1920 x 600	32		60 70 72 75 85 100 120 140 144 150 170 200 240
2048 x 768	32		60 70 72 75 85 100 120 140 144 150 170 200
2176 x 612	32		60 70 72 75 85 100 120 140 144 150 170 200
2304 x 864	32		60 70 72 75 85 100 120 140 144 150 170
2560 x 720	32		60 70 72 75 85 100 120 140 144 150
2560 x 768	32		60 70 72 75 85 100 120 140 144 150
2560 x 800	32		60 70 72 75 85 100 120 140 144 150

2560 x 960	32		60 70 72 75 85 100 120 140 144 150
2560 x 1024	32		60 70 72 75 85 100 120 140 144 150
2720 x 768	32		60 70 72 75 85 100 120 140 144 150
3200 x 900	32		60 70 72 75 85 100 120
3200 x 1024	32		60 70 72 75 85 100
3200 x 1200	32		60 70 72 75 85 100
3360 x 1050	32		60
3840 x 1080	32	30i	60 70 72 75 85
3840 x 1200	32		60 70 72 75 85
3840 x 1440	32		60 70 72 75 85
4096 x 1536	32		60 70 72 75 85

## Vertical Spanning Modes

640 x 960	8		60 70 72 75 85 100 120 140 144 150 170 200 240
800 x 1200	8		60 70 72 75 85 100 120 140 144 150 170 200 240
848 x 960	8		60 70 72 75 85 100 120 140 144 150 170 200 240
960 x 1200	8		60 70 72 75 85 100 120 140 144 150 170 200 240
1024 x 1536	8		60 70 72 75 85 100 120 140 144 150 170 200 240
1088 x 1224	8		60 70 72 75 85 100 120 140 144 150 170 200 240
1152 x 1728	8		60 70 72 75 85 100 120 140 144 150 170 200
1280 x 1440	8		60 70 72 75 85 100 120 140 144 150 170
1280 x 1536	8		60 70 72 75 85 100 120 140 144 150 170
1280 x 1600	8		60 70 72 75 85 100 120 140 144 150 170
1280 x 1920	8		60 70 72 75 85 100 120 140 144 150 170
1280 x 2048	8		60 70 72 75 85 100 120 140 144 150 170
1360 x 1536	8		60 70 72 75 85 100 120 140 144 150 170
1600 x 1800	8		60 70 72 75 85 100 120 140 144 150
1600 x 2048	8		60 70 72 75 85 100 120
1600 x 2400	8		60 70 72 75 85 100 120
1680 x 2100	8		60
1920 x 2160	8	30i	60 70 72 75 85 100
1920 x 2400	8		60 70 72 75 85 100
1920 x 2880	8		60 70 72 75 85
2048 x 3072	8		60 70 72 75 85

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640 x 960	16		60 70 72 75 85 100 120 140 144 150 170 200 240
800 x 1200	16		60 70 72 75 85 100 120 140 144 150 170 200 240

848 x 960	16		60 70 72 75 85 100 120 140 144 150 170 200 240
960 x 1200	16		60 70 72 75 85 100 120 140 144 150 170 200 240
1024 x 1536	16		60 70 72 75 85 100 120 140 144 150 170 200 240
1088 x 1224	16		60 70 72 75 85 100 120 140 144 150 170 200 240
1152 x 1728	16		60 70 72 75 85 100 120 140 144 150 170 200
1280 x 1440	16		60 70 72 75 85 100 120 140 144 150 170
1280 x 1536	16		60 70 72 75 85 100 120 140 144 150 170
1280 x 1600	16		60 70 72 75 85 100 120 140 144 150 170
1280 x 1920	16		60 70 72 75 85 100 120 140 144 150 170
1280 x 2048	16		60 70 72 75 85 100 120 140 144 150 170
1360 x 1536	16		60 70 72 75 85 100 120 140 144 150 170
1600 x 1800	16		60 70 72 75 85 100 120 140 144 150
1600 x 2048	16		60 70 72 75 85 100 120
1600 x 2400	16		60 70 72 75 85 100 120
1680 x 2100	16		60
1920 x 2160	16	30i	60 70 72 75 85 100
1920 x 2400	16		60 70 72 75 85 100
1920 x 2880	16		60 70 72 75 85
2048 x 3072	16		60 70 72 75 85

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640 x 960	32		60 70 72 75 85 100 120 140 144 150 170 200 240
800 x 1200	32		60 70 72 75 85 100 120 140 144 150 170 200 240
848 x 960	32		60 70 72 75 85 100 120 140 144 150 170 200 240
960 x 1200	32		60 70 72 75 85 100 120 140 144 150 170 200 240
1024 x 1536	32		60 70 72 75 85 100 120 140 144 150 170 200
1088 x 1224	32		60 70 72 75 85 100 120 140 144 150 170 200
1152 x 1728	32		60 70 72 75 85 100 120 140 144 150 170
1280 x 1440	32		60 70 72 75 85 100 120 140 144 150
1280 x 1536	32		60 70 72 75 85 100 120 140 144 150
1280 x 1600	32		60 70 72 75 85 100 120 140 144 150
1280 x 1920	32		60 70 72 75 85 100 120 140 144 150
1280 x 2048	32		60 70 72 75 85 100 120 140 144 150
1360 x 1536	32		60 70 72 75 85 100 120 140 144 150
1600 x 1800	32		60 70 72 75 85 100 120
1600 x 2048	32		60 70 72 75 85 100
1600 x 2400	32		60 70 72 75 85 100
1680 x 2100	32		60
1920 x 2160	32	30i	60 70 72 75 85
1920 x 2400	32		60 70 72 75 85

APPENDIX A: Mode Support for Windows    Default Modes Supported by GPU for Windows

1920 x 2880	32	60	70	72	75	85
2048 x 3072	32	60	70	72	75	85

## Modes Supported by TV Encoders

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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.