NVIDIA ForceWare Graphics Drivers

Release 95 Notes

Version 97.92

For Windows XP and
Windows Media Center Editions
Windows XP Professional x64 Edition
Windows Server 2003 x64

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CHAPTER 1

INTRODUCTION TO *RELEASE 95 NOTES*

This edition of *Release 95 Notes* describes NVIDIA® Release 95 drivers for NVIDIA GPUs running Microsoft® Windows® and provides information that is applicable to all NVIDIA drivers. 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 95 Driver Issues" on page 2 gives a summary of
  - Issues that have been resolved in this version
  - Known limitations of the driver
- "The Release 95 Driver" on page 15 describes the NVIDIA products and languages supported by this driver, the system requirements, and how to install the driver.
- "NVIDIA Driver History" on page 21 describes the new features included in the Release 95 driver (see "Release 95 Enhancements" on page 22) as well as information on previous driver releases.
- "Mode Support for Windows" on page 43

Changes in this Edition

This edition of *Release 95 Notes* includes information about version 97.92 of the Release 95 driver. These changes are discussed beginning with the chapter "Release 95 Driver Issues" on page 2.

CHAPTER 2

RELEASE 95 DRIVER ISSUES

This chapter describes open issues for version 97.92, and resolved issues and driver enhancements for versions of the Release 95 driver up to version 97.92. The chapter contains these sections:

Issues Resolved in Version 97.92

The following are changes made and issues resolved in driver version 97.92:

Single-GPU Issues Resolved

- Splinter Cell Double Agent: Some surfaces are corrupt.
- Halo: Character images are corrupted.
- Oblivion: Streaks appear in the sky after a few minutes of gameplay.
- 3DMark06 reports incorrect driver performance when using CSAA:16Q antialiasing.
- Blue-screen crash occurs when burning a DVD while watching TV.
- Updated NVIDIA Control Panel categories do not install–the previous driver version remains.
- NVIDIA Control Panel: Error occurs on the help page when “smoothness” or “jagged” links are clicked from the Adjust Image Settings with Preview page.

SLI Mode Issues Resolved

- SLI: The SLI profile for any application is ignored if steam.exe is running and the application resolution does not match the desktop resolution.

Issues Resolved in Version 97.44

The following are changes made and issues resolved in driver version 97.44:

- Changing the default NVIDIA Control Panel Antialiasing mode to Override mode will result in corruption in some applications.
- Battlefield 2: Intermittent random z fighting problems on the terrain.
- Adjusting the Noise Reduction causes corruption flashes when launching a DVD.
- Rapidly switching HDTV Component format between modes may cause the display to go blank.
- Driver stops responding in SLI mode if the system boots up with no displays attached.
- Civilization 4: White blocks of corruption appear in the clouds when zooming out.
- Everquest 2, SLI: Flickering water textures/reflections occur when SLI is enabled.
- Pacific Fighters, SLI: With SLI mode enabled, there is a large performance drop–from 100-200+ fps–in DirectX mode when accessing the game control panel with enhanced antialiasing enabled.
- NVIDIA SLI does not activate for any application if Steam.exe is running and the application's resolution does not match the desktop resolution.
- Battlefield: Objects and terrain are very dark. As you move closer, a block of area brightens in steps as you move around the map.
- Tomb Raider: Legend, SLI: No shadows appear when Next Generation Content is enabled.
- Splinter Cell: Double Agent Single Player has geometry corruption.
- Company of Heroes: There are flickering ground textures.

Issues Resolved in Version 97.02

The following are changes made and issues resolved in driver version 97.02:

GPU Temperature Monitoring and Overclocking

Beginning with the Release 95 ForceWare graphics drivers, the NVIDIA Control Panel 3D Settings page no longer includes a page to monitor GPU temperature and overclock the GPU. To use these features, you must have NVIDIA nTune 5.05 or later installed.

nTune 5.05 has also been modified to work on ***all*** motherboards. It enables GPU overclocking and monitoring features on all motherboards, but exposes advanced motherboard overclocking and monitoring features on supported nForce motherboards. See the NVIDIA nTune User's Guide for further instructions on how to use NVIDIA Monitor for GPU temperature monitoring, and for more information on tuning your system.

nTune 5.05 is available for download from NVIDIA.com. See the NVIDIA website at http://www.nvidia.com/object/sysutility.html to get more information about NVIDIA nTune, to download the software, and to download the User's Guide.

Open Issues in Version 97.92

As with every released driver, version 97.92 of the Release 95 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 will have workaround solutions.

They are listed in the following sections:

NVIDIA Recommendations

- 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 Dualview and nView Clone and Span modes are not recommended.

- When using the trial version of WinDVD 6 from InterVideo.com, you may experience TV or DVD playback problems in Windows Media Center if you change resolutions during video playback. This is most often seen when switching from windowed to full screen mode.

  This problem does not occur with the latest full OEM versions of WinDVD or with other Windows Media Center qualified DVD decoders.

- If you perform a clean driver installation (no previous NVIDIA drivers installed), ***you must reboot your computer***. If you do not reboot, the predefined application profiles will not be activated and you may experience application stability problems.

NVIDIA Issues—Single GPU

- The media player hangs when playing MPEG2 HD video clips using overlay in 1080i and then switching to full-screen mode.

  This issue does not occur in other HD modes or with VMR.

- Memory clock changes cannot be performed in multi-monitor mode.

  This issue does not apply to single-display mode.

- Battlefield 2: Corruption and flickering occur in the grass when video settings are set to High.
- Star Wars: Republic Commando: Application crashes when starting a new game.
- Tiger Woods 2006: Flickering shadows appear during gameplay.
- After switching from S-Video to Component format, the setting reverts back to S-Video on some HDTVs.
- Call of Juarez: Corrupted vertical shadows appear during gameplay.
- Switching from Vertical Span mode to Horizontal Span mode causes the NVIDIA Control Panel to crash.
- Running Direct3D applcations when in rotate mode results in corrupted 3D images.

NVIDIA Issues—SLI Mode

- Company of Heroes, SLI: Screen corruption occurs when "Enhance the Application Setting" mode is set to 4x or 8x in the NVIDIA Control Panel.
- 3DMark 2005: Intermittent, horizontal, single-pixel width lines are drawn on the screen during CPU Test 1

  This issue does not occur with VSync enabled.
- With SLI mode enabled, playing a DVD from Windows Media Player or PowerDVD on an HDTV at 480i or 480p causes the system to hang.
- The system boots with a blank display if the monitor is moved to the second GPU.

  To work around this issue, connect the monitor into the display connector that is closest to the motherboard, on the first GPU (the one closest to the CPU).
- Far Cry, SLI: Flickering and shifting sky occurs in the Research level when SLI is enabled.

  This issue does not occur with V-Sync enabled.
- Ghost Recon Advanced Warfighter: The desktop becomes corrupted after exiting the game when the SLI split line is enabled.

  This issue does not occur when the SLI split line is disabled.
- Serious Sam 2, SLI: SLI split line does not show any scaling until a resolution change is made.

  Although the SLI split line is not moving, FRAPS still should show performance scaling.
- Playback fails on Cyberlink Blu-ray player through component-out HDTV at 720p and 1080i.

  480p mode plays back with no issues.
- When setting HDTV mode at 1080p resolution, there is no TV display output. When connecting Composite PAL mode, there is noise on the display.
- Changes to the Flat Panel Scaling options are not saved when closing and reopening the NVIDIA Control Panel.

- Hitman Contracts: Corruption occurs at several places when the "Weather Details" High setting is selected from the game control panel.

Not NVIDIA Issues

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

  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.

  This is not anNVIDIA 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.

  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.

  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: GeForce 8800 GTX fog looks different than GeForce 7900 GTX fog, and dynamic shadows look solid black.

  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.

- 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.

- Quake4: Random pauses occur during gameplay.

  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.

  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 intro videos.

- Battlefield 1942 hangs after playing for a few minutes.

  This is an application issue with dual-core CPUs.

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 GPUs

With GeForce 8 Series 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 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.

VIA and ATI AGP 3.0 Chipsets

- **Problem**

  The use of AGP-protocol cycles for coherent access to regular system memory results in data corruption on systems based on VIA and ATI AGP 3.0-compatible chipsets.

  AGP-protocol cycles to the AGP aperture are not affected.

- **Workaround**

  To correct the data corruption problem, the Release 75 driver exclusively uses PCI-protocol cycles to access regular system memory when it detects a VIA or ATI AGP 3.0-compatible chipset.

PowerDVD 5.0 Does Not Display Correctly in nView Span Mode

With nView Horizontal Span mode enabled, when the PowerDVD 5.0 playback window is dragged to the second display and then stretched to fill the display, the right area of the display is corrupted.

This is not an NVIDIA bug, but a problem with PowerDVD.

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

- **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 for Release 60 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.

DirectX Applications Run Only on Single Display Even in Multiview Mode

- **Problem**

  When running DirectX applications in full-screen mode on an NVIDIA Multiview system, the application appears on only one display instead of all the displays.

  A Multiview system consists of a NVIDIA Quadro NVS series graphics card with multiple monitors connected and multiview mode enabled.

- **Explanation**

The problem occurs only with DirectX /Direct3D applications that use full-screen exclusive mode. In order to support these applications, the driver must switch to single display mode and blank out the other displays.

In scenarios that require multiview functionality—such as when using screen savers—NVIDIA recommends using non-DirectX/Direct3D applications.

Advanced Timing Adjustment Limitations

- **Problem**

  The Advanced Timing page—accessed from the NVIDIA Display Properties Change Resolution page—is not available for some cards using the DVI connector.

- **Explanation**

  DVI timing adjustment is supported for NV3x-based cards only if they have an external TMDS, such as the SiliconImage 164.

  If the card uses the internal TMDS, then the page is not accessible. However, cards with an internal TMDS can support refresh rates less than 60 Hz in this driver.

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

- **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.

Hide Modes Check Box Cannot be Cleared

- **Background**

  One of the NVIDIA display property page dialog boxes contains the check box labelled "Hide modes that this monitor cannot display". It is checked by default, indicating that only the refresh rates supported by the monitor are listed in the refresh rate drop down list.

  The check box appears in the Device Adjustments->Monitor Settings page.

- **Problem**

  If you clear the check box, click **Apply**, and then close the dialog box, the check box is still checked when the page is re-opened.

- **Explanation**

  This function is no longer controlled by the NVIDIA driver, but has not been removed from the control panel in order to maintain consistency with driver designs that are currently being shipped to OEMs.

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.

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.

Windows Media Player Hangs Playing MPEG Files

On systems using the InterVideo WinDVD player (including ones that don't contain NVIDIA components), Windows Media Player 6.4 halts if the slider is adjusted while an MPEG clip is playing. The problem also occurs if Active Movie or the Movie Player on the Windows 98 CD is used instead of Media Player 6.4.

There are two ways to work around this problem:

- Under **Display Properties > Settings > Advanced… > Performance**, set **Graphics Hardware acceleration** to **None**.
- Uninstall the WinDVD player.

This is not an NVIDIA bug.

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.

Irongate Chipsets With AGP 1X

AGP 1X transfers are used on Athlon motherboards with the Irongate chipset to work around a problem with the signal integrity of the chipset.

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

- **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 NT 4.0, Windows 2000, and 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

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 95 DRIVER

This chapter covers the following main topics:

See the section "Release 95 Enhancements" on page 28 for a summary of Release 95 features and enhancements.

Hardware and Software Support

Supported Operating Systems

This Release 95 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
- Microsoft Windows Server 2003 x64[1]

1. SLI mode is not supported under Microsoft Windows Server 2003 x64.

Supported NVIDIA Products

Table 3.1 lists the NVIDIA products supported by Version 97.92 of the Release 95 driver.

Table 3.1 Supported NVIDIA Consumer Products

Product	Windows XP 32-bit
GeForce 8800 GTX	X
GeForce 8800 GTS	X

Supported Languages

The Release 95 NVIDIA ForceWare Graphics Drivers supports the following languages in the main driver Control Panel:

English (USA)
English (UK)
Arabic
Chinese (Simplified)
Chinese (Traditional)
Czech
Danish
Dutch
Finnish
French
German
Greek
Hebrew
Hungarian
Italian
Japanese
Korean
Norwegian
Polish
Portuguese (Brazil)
Portuguese (Euro/Iberian)
Russian
Slovak
Slovenian
Spanish
Spanish (Latin America)
Swedish
Thai
Turkish

Driver Installation

System Requirements

The minimum hard disk space requirement for each operating system are listed in Table 3.2, Table 3.3, and Table 3.4:

Table 3.2 Hard Disk Space Requirements—English

Operating System	Minimum Hard Disk Space
Windows XP (all editions)	43.4 MB
Windows Server 2003 x64	42.2 MB

Table 3.3 Hard Disk Space Requirements—Non-English Languages

Operating System	Minimum Hard Disk Space
Windows XP (all editions)	26.6 MB
Windows Server 2003 x64	34.9 MB

Table 3.4 Hard Disk Space Requirements—Full International Package

Operating System	Minimum Hard Disk Space
Windows XP (all editions)	70.0 MB
Windows Server 2003 x64	77.1 MB

Installation Instructions

Before You Begin

- 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, your 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.
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 .
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.

   The license agreement dialog box appears.
3. 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.

   Opening the EXE file launches the NVIDIA InstallShield Wizard.
4. Follow the instructions in the NVIDIA InstallShield Wizard to complete the installation.

CHAPTER 4

NVIDIA DRIVER HISTORY

This chapter provides the driver release history and summarizes the features and enhancements that have been introduced in each release. It contains these sections:

Driver Release History

Release 95 is the latest NVIDIA driver available. Table 4.1 lists previous driver versions associated with Release 95.

Table 4.1 NVIDIA Drivers for Windows

Driver	Name	Versions	Comments
Release 95	ForceWare	97.02, 97.44, 97.92	

Release 95 Enhancements

Release 95 added support for the NVIDIA GeForce 8800 GPUs.

OpenGL

Note: OpenGL release notes are periodically posted on the NVIDIA developer Web site: http://developer.nvidia.com/object/nv_ogl2_support.html.

- OpenGL 2.1 and OpenGL Shading Language version 1.20 are now supported.
- OpenGL Shading Language shaders that use the "`#version 110`" or "`#version 120`" directive now strictly adhere to the OpenGL Shading Language specification.

  As a consequence, existing OpenGL Shading Language shaders that use the "`#version 110`" directive may fail to compile if they use language constructs that are invalid according to the OpenGL Shading Language specification. *This is true even if the shaders did compile using earlier NVIDIA driver releases*. Existing OpenGL Shading Language shaders that do not use the "`#version 110`" directive are not affected.
- The following extensions have been added:
  - `GL_EXT_framebuffer_blit`
  - `GL_EXT_framebuffer_multisample`
  - `GL_NV_framebuffer_multisample_coverage`
  - `WGL_NV_gpu_affinity` (NVIDIA Quadro only)

  All of the NVIDIA OpenGL extensions can be found on the NVIDIA developer Web site:

  http://developer.nvidia.com/object/nvidia_opengl_specs.html.

APPENDIX

A

MODE SUPPORT FOR WINDOWS

This chapter details the Windows modes supported by the Release 95 driver for NVIDIA products. It contains these sections:

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 31.

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 @ 60Hz	• GeForce 8800 GTX • GeForce 8800 GTS

Table A.2 Non-standard Modes Supported

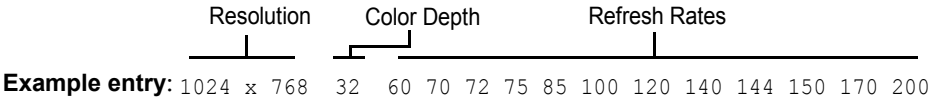
Resolution
1680 x 1050
1366 x 768

Default Modes Supported by GPU

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

Understanding the Mode Format

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



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 8 Series

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

- NVIDIA GeForce 8800 GTX
- NVIDIA GeForce 8800 GTS

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
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
----------------------------------------------------------------------
 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
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
-------------------------------------------------------------------
 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
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
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

```
-------------------------------------------------------------------
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
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
-------------------------------------------------------------------
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
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
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
-----------------------------------------------------------------
 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
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
-----------------------------------------------------------------
 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
1920 x 2160  32   30i    60 70 72 75 85
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
```

Modes Supported by DACs and TV Encoders

This section lists the supported modes and formats for the following:

External DAC Mode Support

Fairchild FMS3815 Modes Supported

Table A.3 shows the refresh rates for various resolutions of the Fairchild FMS3815 external DAC, which is commonly used on GeForce2 MX and Quadro2 MXR boards to drive a secondary CRT.

Table A.3 External DAC Modes (Fairchild FMS3815)

Resolution	Supported Rates (Hz)
640x480	60, 70, 72, 75, 85, 100, 120, 140, 144, 150, 170
800x600	60, 70, 72, 75, 85, 100, 120, 140, 144, 150, 170
1024x768	60, 70, 72, 75, 85, 100, 120
1152x864	60, 70, 72, 75, 85
1280x720	60, 70, 72, 75, 85, 100
1280x960	60, 70, 72, 75
1280x1024	60, 70, 72, 75
1360x768	60, 70, 72, 75, 85
1600x900	60, 70
1600x1200	—

Analog Devices ADV-7123 Modes Supported

Table A.4 shows the refresh rates for various resolutions of the Analog Devices ADV-7123 external DAC, which is commonly used on the GeForce2 MX and the Quadro2 MXR boards to drive a secondary CRT.

Table A.4 External DAC Modes (Analog Devices ADV-7123)

Resolution	Supported Rates (Hz)
640x480	60, 70, 72, 75, 85, 100, 120, 140, 144, 150, 170
800x600	60, 70, 72, 75, 85, 100, 120, 140, 144, 150, 170
1024x768	60, 70, 72, 75, 85, 100, 120
1152x864	60, 70, 72, 75, 85, 100
1280x720	60, 70, 72, 75, 85, 100
1280x960	60, 70, 72, 75, 85, 90
1280x1024	60, 70, 72, 75, 85

Table A.4 External DAC Modes (Analog Devices ADV-7123) (continued)

Resolution	Supported Rates (Hz)
1360x768	60, 70, 72, 75, 85, 100
1600x900	60, 70, 75
1600x1200	—

TV-Out Mode Support

Table A.5 and Table A.6 list the NTSC, PAL, and HDTV TV-Out modes supported by the NVIDIA driver.

Table A.5 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.6 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.