



# ForceWare Graphics Drivers ***Release 158 Notes***

**Version 158.22**  
for Windows XP

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**NVIDIA Corporation**  
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## CHAPTER

## 1

# INTRODUCTION TO *RELEASE 158 NOTES*

This edition of *Release 158 Notes* describes the Release 158 ForceWare Graphics Drivers and provides information applicable to all NVIDIA drivers. NVIDIA provides these notes to enable add-in-card (AIC) producers and original equipment manufacturers (OEMs) to monitor 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 158 Driver for Windows XP” on page 2](#) gives a summary of changes, and fixed and open issues in this version.
- [“The Release 158 Driver for Windows XP” on page 25](#) 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 53](#) lists the default resolutions supported by the driver.

## Changes in this Edition

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This edition of the *Release 158 Notes* for Windows Vista includes information about NVIDIA ForceWare graphics driver version 158.22, and lists changes made to the driver since version 97.94. These changes are discussed beginning with the chapter [“Changes in the Release 158 Driver for Windows XP” on page 2](#).

## CHAPTER

## 2

# CHANGES IN THE RELEASE 158 DRIVER FOR WINDOWS XP

This chapter describes open issues for version 158.22, and resolved issues and driver enhancements for versions of the Release 158 driver up to version 158.22. The chapter contains these sections:

- “Version 158.22 Highlights” on page 3
- “Changes in Version 158.22” on page 4
- “Changes in Version 158.19” on page 5
- “Open Windows XP Issues in Version 158.22” on page 7
- “Not NVIDIA Issues” on page 15
- “Known Product Limitations” on page 18

## **Version 158.22 Highlights**

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This section provides highlights of version 158.22 of the NVIDIA Release 158 Driver.

### **What's New in Version 158.22**

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#### **Resolved Issues for Windows Vista**

See [“Changes in Version 158.22” on page 4](#) for a list of resolved issues.

## Changes in Version 158.22

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The following sections list the changes made and issues resolved since driver version 158.19.

- [“Fixed Issues–Windows XP 32-bit” on page 4](#)

The NVIDIA bug number is provided for reference.

### Fixed Issues–Windows XP 32-bit

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#### Fixed Single-GPU Issues

- NVIDIA Control Panel Manage 3D Settings page list selections do not persist within the page. [264942]
- Enable TurboCache for GeForce 8 series GPUs. [288381]
- GeForce 8800 GTX: After uninstalling the NVIDIA display driver (from add/remove programs), some installation files are left on the system. [273426]
- GeForce 8800 GTX: NVIDIA Control Panel SLI page includes an incorrect “Digital Display” entry in the display selection list. [295563]

#### Fixed SLI-Mode Issues

- [SLI], GeForce 8600: Rainbow Six: Vegas–flickering occurs with 16x SLIAA or 32xQ SLIAA enabled from the NVIDIA Control Panel (Enhanced mode).[305901]
- [SLI], GeForce 8800 GTX: Far Cry–there is corruption in the game when SLI mode is enabled.[305054]



## Changes in Version 158.19

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The following sections list the changes made and issues resolved since driver version 97.94.

- “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

- Memory clock changes cannot be performed in multi-monitor mode. [266145]

*This issue does not apply to single-display mode.*

- Tiger Woods 2006: Flickering shadows appear during gameplay. [259286]
- Call of Juarez: Corrupted vertical shadows appear during gameplay. [265676]
- Switching from Vertical Span mode to Horizontal Span mode causes the NVIDIA Control Panel to crash. [265204]
- Running Direct3D applications when in rotate mode results in corrupted 3D images. [265063]
- Playback fails on Cyberlink Blu-ray player through component-out HDTV at 720p and 1080i. [263685]
- Changes to the Flat Panel Scaling options are not saved when closing and reopening the NVIDIA Control Panel. [267226]
- Splinter Cell: Double Agent–flickering occurs in the water. [279166]
- After switching from S-Video to Component format, the setting reverts back to S-Video on some HDTVs. [262867]

## Fixed SLI-Mode Issues

- [SLI]: 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. [279404]
- [SLI]: Serious Sam 2—the SLI split line does not show any scaling until a resolution change is made. [264506]

## Open Windows XP Issues in Version 158.22

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As with every released driver, version 158.22 of the Release 158 driver has open issues and enhancement requests associated with it. This section includes lists of issues that are either not fixed or not implemented in this version. Some problems listed may not have been thoroughly investigated and, in fact, may not be NVIDIA issues. Others may have workaround solutions.

- [“NVIDIA Recommendations” on page 7](#)
- [“NVIDIA Issues—Single GPU” on page 8](#)
- [“NVIDIA Issues—SLI Mode” on page 12](#)
- [“Windows XP 64-bit Issues” on page 13](#)
- [“Application Issues” on page 15](#)

### 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.*

- 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.[124320]

## NVIDIA Issues—Single GPU

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### All GPUs

- The NVIDIA Control Panel crashes when closing the nTune "NVPerformance Benchmark".[299621]
- The NVIDIA Control Panel Run Display Optimization Wizard back button does not work.[302285]
- DVI display is blurry with normal display timing settings.[282940]  
*The blurriness does not occur if "Treat as HDTV" is selected and then CVT advanced timings are used.*
- Battlefield 2: Corruption and flickering occur in the grass when video settings are set to High.[272027]
- Star Wars: Republic Commando: Application crashes when starting a new game.[254010]

### GeForce 8 Series GPUs

- GeForce 8800 GTX: NVIDIA Control Panel "Resize HDTV Desktop" (overscan compensation) sliders do not maintain their settings. [289632]  
*This issue is fixed with an NVIDIA-provided workaround to enable overscan compensation and allow the Resize HDTV Desktop sliders to work properly. See NVIDIA [Knowledgebase Article #2064](#) for instructions.*
- GeForce 8800 GTX: 1680x1050 resolution is not available when using the Dell 3007WFP monitor. [284181]
- GeForce 8800 GTX/GTS: Flat-panel scaling doesn't work with wide-screen monitors. [309707]
- GeForce 8800 GTX: After changing the HDTV component format, the display either turns blank or reverts to the previous format.[279287]
- GeForce 8800 GTX: Changing the HDTV resolution to 480p results in a resolution of 320x200.[298927]

- GeForce 8800 GTX: Blue-screen crash occurs when changing resolutions while Direct3D, OpenGL, and video applications are open at the same time.[262074]
- GeForce 8800 GTX: DVD overlays do not appear when using the component-out connection.[297064]
- GeForce 8800 GTX: Desktop Overlap does not work.[297753]
- GeForce 8800 GTX: The NVCOPP test fails after resuming from S1 or S3 sleep state resume for SONY HDTV monitors connected by DVI-DVI.[305057]
- GeForce 8800 GTX: "This task cannot be opened now ..." message appears when clicking the NVIDIA Control Panel "Run multiple display wizard" navigation link after clicking the "Adjust video color settings" navigation link.[298477]
- GeForce 8800 GTX: When connecting HDTV mode and setting the resolution to 1080p, there is no TV output.[270122]
- GeForce 8800 GTX: nTune (5.05.38.00) GPU fan control settings are not available (grayed out). [308669]
- GeForce 8800 GTX: nTune (5.05.38.00) GPU fan control settings revert to previous settings when applied.[308683]
- GeForce 8800 GTX: Elder Scrolls: Oblivion–animation is visible through the trees when HDR and NVIDIA Control Panel antialiasing are enabled. [296265]
- GeForce 8800 GTX: S.T.A.L.K.E.R.–the crosshair is missing when antialiasing is enabled. [308826]
- GeForce 8800 GTX: Sid Meier's Railroads!–during gameplay, the driver crashes or the application freezes.[297044]
- GeForce 8800 GTX: FEAR Extraction Point–poor performance.[264779]
- GeForce 8800 GTX: Far Cry–blue-screen crash occurs after playing the game for awhile.[301780]
- GeForce 8800 GTX/GeForce 7900 GTX: Neverwinter Nights 2–the minimap loses its background when the resolution is changed.[273788]

- GeForce 8800 GTX: G80 Vista: Company of Heroes—corruption occurs during some sequences of the Performance Test.[294463]
- GeForce 8800 GTX: Dungeon Siege 2—the mouse cursor is “laggy” and jittery when CSAA is enabled.[297301]
- GeForce 8600: The NVIDIA Control Panel “Setup multiple displays” page reverts back to the “Adjust image settings with preview” page after running 3DMark05.[297180]
- GeForce 8600: Rainbow Six Vegas—the game does not start when antialiasing is set to 8x, 8xQ, or 16x.[298195]
- GeForce 8600: Rise of Nations:Rise of Legends—the game crashes to the desktop when the resolution is set to 1920x1200 and antialiasing is set to Medium from the game control panel.[298503]
- GeForce 8600: Thief Deadly Shadows—there is texture corruption when using the game control panel default settings.[299579]
- GeForce 8500/8400/8300: “Could not create the Direct3D device” message appears when previewing a 3D screen saver in Dualview mode.[299992]
- GeForce 8600: On closing the NVIDIA Control Panel, the display configuration automatically switches from Clone mode to Single-display mode.[303542]
- GeForce 8800 GTX: During playback, when the Windows Media Player window overlaps another window, video tearing occurs.[303563]
- GeForce 8500/8400/8300: Dropped frames occur when playing MPEG2 files in Windows Media Player 10 after resuming from Standby.[303909]
- GeForce 8500/8400/8300: The NVIDIA Control Panel “Resize HDTV Desktop” navigation link does not work consistently.[301312]
- GeForce 8500/8400/8300: With the resolution set to 1080i, the desktop cannot be changed from Dualview mode to Clone mode.[300058]
- Dual GeForce 8500/8400/8300: The NVIDIA Control Panel crashes after resuming from 3D screen saver preview in Dualview mode.[302725]

## GeForce 7 Series GPUs

- GeForce 7300 GT: NVRotate is not able to rotate the display from normal mode to 180 degree rotated mode.[301341]
- GeForce 7800 GTX: The driver cannot switch to another HD format after being set to 480i or 576i.[301828]
- GeForce 7800 GTX: The NVIDIA Control Panel SLI rendering option is not available for the component-out connection. [301841]  
*It is available when using the S-Video connection.*
- GeForce 7800 GTX: The NVIDIA Control Panel "Modify full screen video options" feature is visible after enabling SLI mode.[301330]
- GeForce 7800 GTX: The NVIDIA Control Panel crashes if you change the HD format of the component-out display under Dualview.[301752]
- GeForce 7900 GTX: The NVIDIA Control Panel "Run Multiple Display wizard" can be opened while playing a video and no pop up "Task cannot be opened right now" warning message appears.[303529]
- GeForce 7900 GTX: Corruption and frame drops occur after enabling Hardware Acceleration in Cyberlink PowerDVD 7 while playing an HQV DVD.[305058]
- GeForce 7800 GTX: Clicking Cancel after starting the NVIDIA Control Panel "Resize HDTV desktop" function reverts the settings to the default instead of the previous settings.[300995]

## GeForce 6 Series GPUs

- GeForce 6600: HQV DVD shows corruption when played using Windows Media Player.[302235]
- GeForce 6100/6150: The system freezes with a corrupt display upon resume from sleep state.[303187]
- GeForce 6800 GTX: The Restore Defaults link is not available on the NVIDIA Control Panel "Modify full-screen video options" page the first time the page is visited.[301890]

## NVIDIA Issues—SLI Mode

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- [SLI], 3DMark 2005: Intermittent, horizontal, single-pixel width lines are drawn on the screen during CPU Test 1. [272972]  
*This issue does not occur with V-Sync enabled.*
- [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.*
- [SLI]: Ghost Recon Advanced Warfighter—the desktop becomes corrupted after exiting the game when the SLI split line is enabled.[262737]  
*This issue does not occur when the SLI split line is disabled.*
- [SLI]: When setting HDTV mode at 1080p resolution, there is no TV display output. When connecting Composite PAL mode, there is noise on the display. [270122]
- [SLI], GeForce 8800 GTX: Stalker—with SLI mode enabled, the game performance does not improve by much.[306807]
- [SLI], GeForce 8800 GTX: Half-Life 2 Episode 1—with SLI mode enabled, purple textures appear with 16xQ CSAA enabled at 2560x1600 resolution.[302602]
- [SLI], GeForce 8800 GTX: Splinter Cell:Double Agent—SLI mode does not work when the game is run through the front end launcher. [298601]
- [SLI], GeForce 8800 GTX: SLIAA doesn't turn off after switching back to “application controlled” under the NVIDIA Control Panel->Manage 3D Settings page->Antialiasing-Mode setting.[293282]
- [SLI], GeForce 8800 GTX: Blue-screen crash occurs when enaling SLI mode with a second monitor connected to the slave GPU.[298438]
- [SLI], GeForce 8800 GTX: After enabling SLI mode, the SLI animation on the NVIDIA Control Panel Set SLI Configuration page disappears.[295415]
- [SLI], GeForce 8800 GTX: Dungeon Siege 2—there is a block of corruption around the mouse cursor.[297306]



- [SLI], GeForce 8800 GTX: Far Cry—there is a flickering/shifting sky in the Research level when SLI mode is enabled.[265091]
- [SLI], GeForce 8800 GTX: Elder Scrolls: Oblivion—visual indicators do not display the correct information when SLI AA is enabled.[296267]
- [SLI], GeForce 8800 GTX: Neverwinter Nights 2— flickering occurs between screen transitions when SLI is enabled.[296352]
- [SLI], GeForce 8800 GTX: Black and White 2—the SLI visual indicator indicate 8x AA when SLI 16x or SLI 32xQ AA are enabled.[296596]
- [SLI], GeForce 8800/8600: Act of War—the cursor flickers when playing the game in multi-GPU AFR modes.[221369]
- [SLI], GeForce 8600: Splinter Cell Double Agent—the game crashes to desktop at 1600x1200 resolution and with 32xQ SLIAA enabled.[306223]
- [SLI], GeForce 8600: Half Life 2—white patches appear in the sky when 8xAA is enabled from the NVIDIA Control Panel (Enhanced mode) in conjunction with 2xMSAA enabled from the game control panel.[306259]
- [SLI], GeForce 7900 GTX: The image on the NVIDIA Control Panel "Set SLI Configuration" page disappears after clicking the "Monitor Temperature Level" main navigation tree item.[293140]
- [SLI], GeForce 7800 GTX: The NVIDIA Control Panel crashes if you enable SLI mode after invoking the screen saver several times.[302681]
- [SLI], GeForce 7300 GT: With SLI mode enabled, the command prompt is corrupted and flickering when the DOS box is view in full-screen mode.[303214]
- [SLI], GeForce 7300 GT: The desktop shrinks to the upper-right corner after enabling or disabling SLI mode. [303494]
- [SLI], GeForce 6800: The NVIDIA Control Panel "Adjust Video color settings" page is corrupted when SLI is disabled.[296818]

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

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- GeForce 8500/8400/8300: With the resolution set to 1080i, the desktop cannot be changed from Dualview mode to Clone mode.[300058]

- GeForce 8500/8400/8300: Parts of the NVIDIA Control Panel "Resize HDTV desktop" page are corrupt or missing.[297618]
- GeForce 8500/8400/8300: There is corruption on the NVIDIA Control Panel 'Change flat panel scaling' page after changing the display] from DFP to CRT.[296837]
- GeForce 8800 GTX: The NVCOPP test fails after resuming from S1 or S3 sleep state resume for SONY HDTV monitors connected by DVI-DVI.[305057]
- GeForce 8500/8400/8300: 400: The NVIDIA Control Panel Apply and Cancel buttons are present on the "Resize HDTV Desktop" page when no settings have been changed.[298515]
- GeForce 8600: CPU usage increases dramatically during WMV HD clip playback.[303153]
- GeForce 8500/8400/8300: "Could not create the Direct3D device" message appears when previewing a 3D screen saver in Dualview mode.[299992]
- GeForce 7900 GTX: The NVIDIA Control Panel "Run Multiple Display wizard" can be opened while playing a video and no pop up "Task cannot be opened right now" warning message appears.[303529]
- GeForce 6100/6150: The NVIDIA Control Panel Apply and Cancel buttons don't appear after changing the HD format twice.[303478]

## Not NVIDIA Issues

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

- “Application Issues” on page 15

### Application Issues

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- 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: 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.*
  - 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 intro videos. [221738]
- Battlefield 1942 hangs after playing for a few minutes.[265230]

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

## 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 GPUs” on page 19
- “Display Output Selection not Available on “Bridgless” SLI” on page 19
- “SLI Connector Requirement on NVIDIA Quadro SLI Cards” on page 19
- “DVD Playback Issues with Dual NVIDIA Quadro NVS Cards” on page 19
- “PowerDVD 5.0 Does Not Display Correctly in nView Span Mode” on page 19
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## **Image Sharpening Control not Available with GeForce 8 Series GPUs**

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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.

## **SLI Connector Requirement on NVIDIA Quadro SLI Cards**

---

The SLI connector that links two SLI cards is needed for proper SLI operation. However, the connector can be removed if you do not intend to enable SLI mode. If you remove the connector, then you must make sure that SLI mode is disabled from the NVIDIA control panel. Enabling SLI mode without the SLI connector installed will result in video corruption.

## **DVD Playback Issues with Dual NVIDIA Quadro NVS Cards**

---

With both AGP and PCI NVIDIA Quadro NVS cards installed in the system, when attempting to play DVDs in full-screen mode on the display connected to the PCI card, the screen is blank.

*This is not an NVIDIA bug, but rather a problem with older point releases of PowerDVD and WinDVD.*

## **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

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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.*



## Applying Workstation Application Profiles

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- **Application Profiles Should be Used**

The workstation application profiles are software settings used by the NVIDIA Display Drivers to provide optimum performance when using a selected application. The profile also works around known application issues and bugs.

If there is an available setting for an application, it should be used, otherwise incorrect behavior or reduced performance is likely to occur.

- **Applying Application Profiles**

If you make a configuration change while the application is open, you must exit and then re-open the application for the change to take effect.

When an application is running it does not receive notification of configuration changes.

## 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.

## 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

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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

---

- **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**

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 158 DRIVER FOR WINDOWS XP

This chapter covers the following main topics:

- “Hardware and Software Support” on page 25
- “Driver Installation” on page 28
- “NVIDIA Driver History” on page 31

## Hardware and Software Support

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### Supported Operating Systems

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This Release 158 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 158 driver.

**Table 3.1** Supported NVIDIA Consumer Products

<b>Product</b>	<b>Windows XP 32-bit</b>	<b>Windows XP Professional x64</b>
GeForce 8800 GTX	X	X
GeForce 8800 GTS	X	X
GeForce 8800 Ultra	X	X
GeForce 8600 GTS	X	X
GeForce 8600 GT	X	X
GeForce 8500 GT	X	X
GeForce 8400 GS	X	X
GeForce 8300 GS	X	X

## Supported Languages

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The Release 158 ForceWare Graphics Drivers supports the following languages in the main driver Control Panel:

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

# Driver Installation

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## System Requirements

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The hard disk space requirement is minimum 62.9 MB for English-only, and 79 MB for International.

## Installation Instructions

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### 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, 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 Open Setup.exe to launch the NVIDIA InstallShield Wizard.
- 2 Follow the instructions in the NVIDIA InstallShield Wizard to complete the installation.

## NVIDIA Driver History

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Release 158 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 100	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, 91.36, 91.37, 91.45, 91.47	
Release 80	ForceWare	81.67, 84.26, 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	77.37, 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	
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	



## APPENDIX



## MODE SUPPORT FOR WINDOWS

This chapter details the Windows modes supported by the Release 158 driver for NVIDIA products. It contains these sections:

- “General Mode Support Information” on page 34
- “Default Modes Supported by GPU for Windows XP” on page 35
- “Modes Supported by DACs and TV Encoders” on page 43

## 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 for Windows XP](#)” on page 35.

The actual modes available depend on the capabilities of the display. In addition, the NVIDIA graphics driver has a “dynamic EDID detection” capability and will make available *additional* modes that are listed in the display EDID, provided the graphics hardware can support it.

The NVIDIA graphics driver also supports the high resolutions available with the displays listed in [Table A.1](#) as well as the non-standard modes listed in [Table A.2](#).

**Table A.1** Modes Supported for High Resolution Displays

Display	Maximum Resolution	Hardware Requirements
Apple 30" Cinema HD Display (Dual link DVI)	2560x1600 @ 60 Hz	<ul style="list-style-type: none"> <li>All high-end NVIDIA Quadro FX graphic solutions.</li> </ul>
Dell WFP 3007 (Dual Link DVI)	2560x1600 @ 60 Hz	<ul style="list-style-type: none"> <li>All High-end NVIDIA Quadro FX graphic solutions.</li> </ul>

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

Resolution
1680 x 1050
1366 x 768

## Default Modes Supported by GPU for Windows XP

---

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

- “GeForce 8 Series 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
-----	-----	-----

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

**Meaning:**

Resolution:	1024 x 768
Color depth:	32 bpp
Refresh rates:	60 Hz, 70 Hz, 72 Hz, 75 Hz, 85 Hz, 100 Hz, 120 Hz, 140 Hz, 144 Hz, 150 Hz, 170 Hz, and 200 Hz

**Figure A.1** Mode Format

**Note:**

- Horizontal spanning modes of 3840x1080 and above, and vertical spanning modes of 1920x2160 and above generally require at least 32 MB of video memory at 32 bpp.
- An “i” next to the refresh rate indicates an interlaced refresh rate.

## GeForce 8 Series GPUs

---

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

- NVIDIA GeForce 8800 GTX
- NVIDIA GeForce 8800 GTS
- NVIDIA GeForce 8800 Ultra
- NVIDIA GeForce 8600 GTS
- NVIDIA GeForce 8600 GT
- NVIDIA GeForce 8500 GT
- NVIDIA GeForce 8400 GS
- NVIDIA GeForce 8300 GS

- //////////////////////////////////////

### 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
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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
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

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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
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
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

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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
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
1920 x 2160 32 30i   60 70 72 75 85

```

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

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” on page 43
- “TV-Out Mode Support” on page 44

### 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

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

Resolution	Supported Rates (Hz)
1280x1024	60, 70, 72, 75, 85
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.