



# Release 197 Graphics Drivers for Notebooks ***Release Notes***

**Version 197.16**

**For Windows 7 (32-bit and 64-bit), and  
Windows Vista (32-bit and 64-bit)**

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## CHAPTER

## 1

# INTRODUCTION TO *RELEASE NOTES*

This edition of *Release Notes* describes the Release 197 Graphics Drivers for Microsoft® Windows® Vista/Windows 7. NVIDIA provides these notes to describe performance improvements and bug fixes in each documented version of the driver.

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

## Structure of the Document

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This document is organized in the following sections:

- [“Release 197 Driver Changes” on page 3](#) gives a summary of changes, and fixed and open issues in this version.
- [“The Release 197 Driver” on page 29](#) 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 35](#) lists the default resolutions supported by the driver.

## Changes in this Edition

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This edition of the *Release Notes* for Windows Vista includes information about NVIDIA graphics driver version 197.16, and lists changes made to the driver since version 186.81. These changes are discussed beginning with the chapter [“Release 197 Driver Changes” on page 3](#).



## CHAPTER

## 2

# RELEASE 197 DRIVER CHANGES

This chapter describes open issues for version 197.16, and resolved issues and driver enhancements for versions of the Release 197 driver up to version 197.16. The chapter contains these sections:

- “Version 197.16 Highlights” on page 4
- “Changes in Version 197.16” on page 11
- “Changes in Version 195.62” on page 12
- “Changes in Version 195.55” on page 13
- “Changes in Version 195.39” on page 14
- “Open Issues in Version 197.16” on page 16
- “Not NVIDIA Issues” on page 19
- “Known Product Limitations” on page 24

## Version 197.16 Highlights

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This is a reference driver for Quadro FX, Quadro NVS series, GeForce 8M, 9M, 100M, 200M, and 300M series notebook GPUs.

Some notebooks are not supported by this release. Refer to the [“Supported NVIDIA Products” on page 30](#) for the list of supported GPUs and notebooks.

This section provides highlights of version 197.16 of the NVIDIA Release 197 Driver for Windows Vista/Windows 7.

- [What’s New in Release 197 \(Since Release 186\)](#)
- [What’s New in Version 197.16](#)
- [Limitations in This Release](#)

### What’s New in Release 197 (Since Release 186)

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The section summarizes the following driver changes in Release 197:

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

### Product Support

- Added support for the following notebook GPUs:
  - ION
  - ION LE
  - GeForce GTS 360M
  - GeForce GTS 350M
  - GeForce GTS 250M
  - GeForce GT 335M
  - GeForce GT 330M
  - GeForce GT 325M
  - GeForce 310M

- GeForce 305M
- GeForce GTX 285M
- GeForce GT 240M
- GeForce GT 230M
- GeForce GT 220M
- GeForce G 210M

## **NVIDIA Control Panel Updates**

### **Workstation Pages**

- **Manage Quadro Plex Settings** - now available under Windows Vista and Windows 7.

### **PhysX Indicator**

Enabled through the 3D Settings menu bar item, the PhysX indicator appears when running applications to let you verify the type of PhysX acceleration the game is using - CPU or GPU - or whether PhysX acceleration is being used at all.

### **Display Settings Pages—Organizational Changes**

- The following pages have been revised to include TV settings controls:
  - **Adjust Desktop Color Settings**  
Now includes controls to adjust TV color settings.
  - **Change Resolution**  
Now includes controls to adjust TV and HDTV signal formats and resolution.
  - **Adjust Desktop Size and Position**  
Now includes controls to adjust the TV screen size and position, and to resize the HDTV desktop.
- The following pages and links now appear in the Display category:
  - **HDCP Status** page
  - **Digital Audio** page
- The controls in the Manage Custom Resolutions page are now located in the **Change Resolution** page.

### **Display Settings Pages - Feature Changes**

- **Adjust Desktop Color Settings** page

For Geforce 8 series and later GPUS, the Digital Vibrance range is extended to include the black and white limit which now corresponds to 0%. The new default value is 50%.

- After resizing the HDTV desktop, the new resolution created is now added to the list of available resolutions for that display, and also added to the resolution list within most games or applications.

See “[Help for Resizing Your HDTV Desktop](#)” on page 10 for more information.

## Video & Television Pages

- The following pages and controls have been moved to the Display category:
  - **Adjust Television Color Settings** page (see Display->Adjust Desktop Color Settings)
  - **Change the signal or HD format** page (see Display->Change Resolution)
  - **Select Digital color format** page (see Display->Change Resolution)
  - **Adjust screen size and position** page (see Display->Adjust Desktop Size and Position)
  - **Resize HDTV desktop** page (see Display->Adjust Desktop Size and Position)
  - **HDCP Status** page
  - **Digital Audio** page

## 3D Settings Pages

- **Preferred Refresh Rate**

The Preferred Refresh Rate control lets you override the refresh rate limitations imposed by the 3D application for the indicated monitor.

- **Power Management mode**

Many NVIDIA graphics cards support multiple performance levels so that the PC can save power when full graphics performance is not required. To provide more control over these power management capabilities, NVIDIA has added the Power Management Mode control. The control consists of two settings—*Adaptive* and *Prefer Maximum Performance*.

**Adaptive:** This is the default setting in which the graphics card monitors GPU usage and seamlessly switches between modes based on the performance demands of the application. This allows the GPU to always use the minimum amount of power required to run a given application, and can allow even older 3D games to run in lower power modes if the game does not require full 3D performance. NVIDIA recommends this setting for best overall balance of power and performance.

**Prefer Maximum Performance:** This setting lets you maintain the card at its maximum performance level when 3D applications are running regardless of GPU usage. This option can be set Globally (for all 3D applications), or an application profile can be created under Program Settings to set the preference for a particular 3D application.

This feature is supported only on select GeForce 9 Series and later GPUs and applies only to DirectX and OpenGL-based applications.

## Display Driver Updates

- Added support for hardware overlays on both Clone mode displays. Previously, the driver supported only one hardware overlay, so only one Clone mode display could present the video overlay.
- EDID Override (for monitor manufacturers)  
The graphics driver now can use Extended Display Identification Data (EDID) overrides provided by the monitor manufacturers. These overrides are updated EDIDs contained within the monitor INF.  
Refer to the Microsoft white paper [http://www.microsoft.com/whdc/device/display/edid\\_over.msp](http://www.microsoft.com/whdc/device/display/edid_over.msp).

## CUDA Updates

- CUDA 3.0
- Added support for 64-bit video encoding.
- Added support to make all GPUs within an SLI group available for CUDA applications to use.

## OpenCL Support

Release 195 supports the Open Computing Language (OpenCL) 1.0 for all GeForce 8-series and later GPUs.

## OpenGL Updates

- Support for OpenGL 3.2

## What's New in Version 197.16

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- Added support for the following products:
  - GeForce GTS 360M
  - GeForce GTS 350M
  - GeForce GTS 250M
  - GeForce GT 335M
  - GeForce GT 330M
  - GeForce GT 325M
  - GeForce 310M
  - GeForce 305M
  - GeForce GTX 285M
  - Quadro FX 3800M
  - Quadro FX 2800M
  - Quadro FX 1800M
  - Quadro FX 880M
  - Quadro FX 380M
  - Quadro NVS 3100M
  - Quadro NVS 5100M
- Adds notebook support for 3D Vision on external displays.  
GPU and display requirements for notebook PCs can be found at [http://www.nvidia.com/object/3D\\_Vision\\_Requirements.html](http://www.nvidia.com/object/3D_Vision_Requirements.html).  
3D Vision drivers for notebooks can be found at [http://www.nvidia.com/object/verde\\_3d\\_vision\\_winvista\\_win7\\_CD\\_1.24.html](http://www.nvidia.com/object/verde_3d_vision_winvista_win7_CD_1.24.html).
- This driver package installs NVIDIA PhysX System Software v9.10.0129.  
NVIDIA PhysX hardware acceleration is available on GeForce notebook GPUs with a minimum of 256MB dedicated graphics memory and a minimum of 32 processor cores.
- This driver package installs the HD audio driver, version 1.0.9.1 for supported GPUs .
- Adds GPU-acceleration for Adobe Flash 10.1 Beta
- The driver does not include support for Hybrid SLI notebooks.

## Limitations in This Release

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The following are features that are not currently supported or have limited support in this driver release:

### **NVIDIA Control Panel features that are Not Yet Available**

Support for the following control panel features is under development and not yet available under Windows Vista:

- **Display Category**
  - The Graph tab on the Adjust Desktop Color Settings page is not available.

## Special Instructional Notes

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### Help for Resizing Your HDTV Desktop

After resizing the HDTV desktop, the new custom resolution created is now added to the list of available resolutions for that display, and also added to the resolution list within the game or application. In Release 190 and later drivers, the method for resizing the HDTV desktop has changed to provide better image quality when applying underscan. This method results in a new custom resolution being created which needs to be selected from games or applications to apply the resizing.

In the example displayed in the following screenshot, the underscan has created a new resolution (1216x682). Although this resolution looks different, it is still in HD format. Remember to select this resolution in your game or other application in order to take advantage of it.

**1. Select the display you would like to change.**

The screenshot shows two monitor icons. The first icon, labeled "Sharp HDMI", is highlighted with a green border. The second icon, labeled "Dell 3007WFPHC", is not highlighted.

**2. When the desktop is displayed on my HDTV...**

To adjust the size of your desktop, click the Resize Desktop button.

[Resize Desktop](#)

**i** New resolution 720p, 1216 × 682 applied and added to the [Change resolution](#) screen.  
Select this resolution from your application to achieve the most desired viewing

**Note:** Some games or applications may not support the new resolution.

## Changes in Version 197.16

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The following sections list the changes made and issues resolved since driver version 195.62.

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

### Fixed Issues–Windows Vista/Windows 7 32-bit

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#### Single- GPU Issues Resolved

- GeForce 9600M GT: The shortcut keys for selecting the color option in the NVIDIA Control Panel 'Adjust video color setting' page do not work. [515450]
- GeForce 8600M GT: The mouse pointer disappears after switching the primary Dualview display to the external display and then back to the 'LVDS'. [607299]
- Quadro FX 3700M: The Resize Desktop controls on the NVIDIA Control Panel->Adjust Desktop Size and Position page do not work for 1920x1080 and 1920x810 resolutions. [598467]
- Quadro FX 570M: The external display goes blank when set to either single-display or Dualview mode after hotplugging the DVI-HDMI cable. [605120]

#### Multi-GPU Issues

- [SLI]: The primary Clone mode display cannot be switched. [598361]

### Fixed Issues-Windows Vista/Windows 7 64-bit

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#### Single GPU Issues

- GeForce 9600M GT: The shortcut keys for selecting the color option in the NVIDIA Control Panel 'Adjust video color setting' page do not work. [515450]

#### Multi-GPU Issues

- [SLI]: The primary Clone mode display cannot be switched. [598361]

## **Changes in Version 195.62**

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There are no fixed issues to report in this driver version.

## Changes in Version 195.55

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The following sections list the changes made and issues resolved since driver version 195.39.

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

### Fixed Issues–Windows Vista/Windows 7 32-bit

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#### Single- GPU Issues Resolved

- 3dMark06 crashes with an error message pointing to an NVIDIA driver component. [614215]

### Fixed Issues–Windows Vista/Windows 7 64-bit

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#### Single- GPU Issues Resolved

- Badaboom application–transcode fails when browsing a video file. [615710]
- 3dMark06 crashes with an error message pointing to an NVIDIA driver component. [614215]

## Changes in Version 195.39

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The following sections list the changes made and issues resolved since driver version 186.81.

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

### Fixed Issues—Windows Vista/Windows 7 32-bit

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#### Single- GPU Issues Resolved

- Quadro FX 3700M: When resuming from lid-close activated Sleep mode, keyboard and mouse response is very sluggish. [521241]
- Quadro FX 2700M: The NVIDIA Control Panel shows an extra display on the “Set up multiple displays” page. [540993]
- GeForce 9400M G: Hot-key display switching fails on first attempt after switching displays using the NVIDIA Control Panel. [569456]
- GeForce 9400M G: Under Clone mode, each display has different video color settings from the NVIDIA Control Panel “Adjust Video Color Settings” page. [505275]
- GeForce 8700M GT: VGA hotplug/unplug is not detected without refreshing the NVIDIA Control Panel or the Device Manager. [461613]

#### Multi- GPU Issues Resolved

- [Hybrid SLI], Dell Studio XPS 13 (GeForce 9500M): After overinstalling the driver, only one adapter is listed in Device Manager and Hybrid SLI functionality is not available. [590063]
- [SLI], GeForce 8800M GTX: The display list on the Set SLI Configuration page is not updated properly when hot-plugging or hot-unplugging a display. [478691]

### Fixed Issues—Windows Vista/Windows 7 64-bit

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#### Single- GPU Issues Resolved

- GeForce 9400M G: Hot-key display switching fails on first attempt after switching displays using the NVIDIA Control Panel. [569456]

## Multi- GPU Issues Resolved

- [Hybrid SLI], Dell Studio XPS 13 (GeForce 9500M): After overinstalling the driver, only one adapter is listed in Device Manager and Hybrid SLI functionality is not available. [590063]

## Open Issues in Version 197.16

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As with every released driver, version 197.16 of the Release 197 driver has open issues and enhancement requests associated with it. This section includes lists of issues that are either not fixed or not implemented in this version. Some problems listed may not have been thoroughly investigated and, in fact, may not be NVIDIA issues. Others may have workaround solutions. *Many of these issues are system-specific and may not be seen on your particular notebook.*

- [“Windows Vista/Windows 7 32-bit Issues” on page 16](#)
- [“Windows Vista/Windows 7 64-bit Issues” on page 18](#)

### Windows Vista/Windows 7 32-bit Issues

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#### Single GPU Issues

- ION system: With an external display connected, the display numbering changes after resuming from Sleep/Hibernate mode, whether in single-display or Dualview mode. [572614]

#### GeForce G 100 Series

- GeForce G 105M: After playing a Blu-ray disk on the external display, the display output does not switch to the internal panel after disconnecting the external display. [572547]
- GeForce G 102M: 32: Intermittently, the displays are blank after resuming from a lid-close triggered Standby/Hibernate state. [566852]
- GeForce G 102M: After installing the driver, with an HDMI display connected and resolution set to 1080p, the NVIDIA Control Panel Resize HDTV Desktop page is corrupted. [572622]

#### GeForce 9M Series

- GeForce 9600M GT: With Clone mode enabled and the LVDS set to “Do not scale”, the LVDS resolution cannot be changed.[469380]
- GeForce 9600M GT: HD resolutions 1080p, 1080i, and 576p cannot be applied.. [616739]
- GeForce 9400M G: The settings on the “Change Flat Panel Scaling” page are not updated properly after resizing the desktop and then restoring the default settings. [510854]

#### GeForce 8M Series

- GeForce 8M Series: The desktop cannot be resized for HD signal formats. [643580]
- GeForce 8600M GT: With Clone mode enabled, the displays become blank after uninstalling the driver with the external display connected to the S-Video port. [658788]

- GeForce 8400M GS: FarCry2—with the in-game antialiasing set to 4x or higher, the screen goes black when moving the mouse to the right side of the intro video. [574515]

### **Quadro FX Series**

- Quadro FX 3700M: Blue-screen crash occurs when hot-plugging the DisplayPort panel. [663922]
- Quadro FX 2700M: With Dualview mode enabled, video frame drops and sluggish playback occurs when playing Blu-ray discs. [653611]
- Quadro FX 1600M: With the notebook connected to a docking station, the DVI display is not detected when hot-plugged. [657660]

### **Multi-GPU Issues**

- [SLI], With component connection enabled in Clone mode, there is no display on the component TV. [599855]
- [SLI], GeForce 8800M: After rolling back the driver (to 195.62), the Set SLI and PhysX configuration page is missing. [665439]
- [SLI], GeForce 8800M GTX: Far Cry 2 (DirectX 10)—sky textures show flickering corruption when changing the in-game resolution during gameplay. [492934]
- [SLI], GeForce 8800M GTX: Crysis: Warhead—the screen stutters when V-Sync is ON and the scaling option is set to “Do not scale”. [522792]

## Windows Vista/Windows 7 64-bit Issues

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### Single GPU Issues

- GeForce GTS 250M: With Dualview mode enabled and the desktop set to either portrait or portrait-flipped rotation, the primary display cannot be changed. [662136]
- GeForce G 105M: After playing a Blu-ray disk on the external display, the display output does not switch to the internal panel after disconnecting the external display. [572547]
- GeForce 9400M G: The settings on the “Change Flat Panel Scaling” page are not updated properly after resizing the desktop and then restoring the default settings. [510854]

### Multi-GPU Issues

- [SLI], GeForce 8800M GTX: Multi-display mode is not preserved between users after performing a Fast User Switch. [541252]

## Not NVIDIA Issues

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This section lists issues that are not due to the NVIDIA driver as well as features that are not meant to be supported by the NVIDIA driver for Windows Vista.

- “Windows Vista/Windows 7 Limitations” on page 19
- “Unsupported Features” on page 20
- “OpenGL Application Issues” on page 22
- “Application Issues” on page 23

## Windows Vista/Windows 7 Limitations

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These are behaviors that may be different from Windows XP and are related directly to the Windows Vista operating system.

- **NVIDIA TurboCache**

Windows Vista now controls the allocation of system memory to the GPU for TurboCache functions. The Windows Vista Display Properties pages show the shared system memory (SSM), or how much memory is allocated for NVIDIA GPUs to use for TurboCache.

For more information on graphics memory reporting under Windows Vista, visit <http://www.microsoft.com/whdc/device/display/graphicsmemory.mspx>.

- When switching the refresh rate from 59 Hz to 60Hz, the refresh rate remains at 59 Hz..

*See the Microsoft KB article KB2006076 at <http://support.microsoft.com/kb/2006076>.*

## Unsupported Features

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The following are features and functionality that were available in driver releases supporting Windows XP, but are not—and will not be—available in driver releases for Windows Vista:

- **High resolution scaling desktop (HRSD)**
- **MultiView Display Mode** (for NVIDIA Quadro NVS graphics cards)
- **NVKeystone**
- **Unified back buffer (UBB) controls**
- **OpenGL Video Overlays**

This is an operating system limitation.

Vista window manager features will provide new ways of accomplishing overlays, but will require application porting.

- **Overclocking**

GPU overclocking is no longer supported in the default GPU driver control panel. This feature is available in the NVIDIA System Tools software, which you can download from [NVIDIA.com](http://NVIDIA.com).

- **GPU Temperature Monitoring**

Temperature monitoring is no longer supported in the default GPU driver control panel. This feature is available in the NVIDIA System Tools software, which you can download from [NVIDIA.com](http://NVIDIA.com).

- **AGP Settings Adjustment**

- **Video Zoom**

- **Pan & Scan** - the process of panning across the desktop in order to display a desktop on a monitor with lower resolution

- **Per-display Desktop Color Setting Adjustments**

For Clone mode, the desktop color setting adjustments through the NVIDIA Control Panel can only be made across all displays in a system, and not on a per-display basis.

- **Per-display Video Color Setting Adjustments**

For Dualview mode, the video color setting adjustments through the NVIDIA Control Panel can only be made across all displays in a system, and not on a per-display basis.

- **Edge Blending**
- **Run display optimization wizard**
- **Run multiple display wizard**

- **Run television setup wizard**
- **nView Horizontal and Vertical Span Modes**

Due to architectural changes in the new Windows Vista Window Display Driver Model (WDDM), span mode cannot be supported in NVIDIA graphics drivers. NVIDIA recommends using the built-in Windows Vista multi-display modes.

- **Display/Connection Wizard** (such as was provided with Windows Media Center Edition)
- **DVD/MPEG Extensions** (such as was provided with Windows Media Center Edition)
- **Audio Extensions** (such as was provided with Windows Media Center Edition)
- **NVIDIA nView Desktop Manager**

The nView Desktop Manager will not be included in drivers for GeForce products.

## Feature Differences Between Windows Vista and Windows 7

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### Hotplug Action

Unlike the hotplug activity under Windows Vista, the default settings are not applied when a new display is hotplugged, and there is no message balloon alert stating that a new display was detected. Under Windows 7, all display connection and detection events are handled through the Windows 7 Connecting and Configuring Displays (CCD) mechanism.

### NVIDIA Control Panel Rotate Display Page

The rotation radio button labels are changed slightly under Windows 7 to be consistent with the Microsoft panel:

**Table 2.1** NVIDIA Control Panel Rotation Page Radio Buttons

<b>Clockwise Rotation</b>	<b>Windows 7 Label</b>	<b>Windows Vista Label</b>
0 degrees	Landscape	No rotation (Landscape)
90 degrees	Portrait	90 degrees to the right (Inverted Portrait)
180 degrees	Landscape (flipped)	180 degree rotation (Inverted landscape)
270 degrees	Portrait (flipped)	90 degrees to the left (Portrait)

## OpenGL Application Issues

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The following are known compatibility issues for OpenGL applications developed under Windows XP:

- Mixed GDI and OpenGL rendering does not work.

A number of applications use GDI to render UI components and object highlighting. This is not supported in the Windows Vista driver model.

NVIDIA recommends converting GDI rendering to OpenGL.

The following are some applications that are known to have this issue:

- Maya 7.01
- Applications, Tools, and Benchmarks not Supported Under Windows Vista
  - GLperf
  - 3ds max 8 (later releases may be supported)
  - CATIA V5R15 (V5R16 is supported)
  - PTC's CDRS 2001
- Front buffered rendering may be slow, especially when DWM is enabled.

Flushing the rendering queue while rendering to the front buffer may cause the window manager to recomposite. Applications should therefore minimize the frequency with which they flush the rendering queue.

## Application Issues

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

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

- GeForce 8600M GT: MPEG1 and MPEG2 playback using iTunes is choppy. [537550]

*The application does not use hardware acceleration.*

## 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:

- “Using HDMI/DisplayPort Audio with Displays that have a High Native Resolution” on page 24
- “Using HDMI/DisplayPort Displays that do not Support Audio” on page 25
- “Using HDMI/DisplayPort Audio in Dualview or Clone Mode Configurations” on page 26
- “Flat Panel Scaling Controls are Non-functional for Some TV Modes for Some Displays” on page 26
- “GPU Runs at a High Performance Level (full clock speeds) in Multi-display Modes” on page 26
- “1280x1024 @ 60 Hz not Available on BenQ FP241W Monitors” on page 27
- “Image Sharpening Control not Available with GeForce 8 Series and later GPUs” on page 27
- “Gigabyte GA-6BX Motherboard” on page 27

### Using HDMI/DisplayPort Audio with Displays that have a High Native Resolution

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*To use HDMI/DisplayPort audio with some displays that have a native resolution higher than 1920x1080, you must set the display to a lower HD resolution.*

Some HDMI TV's have a native resolution that exceeds the maximum supported HD mode. For example, TVs with a native resolution of 1920x1200 exceed the maximum supported HD mode of 1920x1080.

Applying this native mode results in display overscan which cannot be resized using the NVIDIA Control Panel since the mode is not an HD mode.

To avoid this situation and provide a better user experience, the driver treats certain TVs— such as the Viewsonic VX2835wm and the Westinghouse LVM- 37w3—as a DVI monitor when applying the native mode. Because the driver does not treat the TV as an HDMI in this case, the HDMI audio is not used.

## Using HDMI/DisplayPort Displays that do not Support Audio

---

*Some HDMI/DisplayPort displays do not support audio, or have issues with current NVIDIA graphics cards.*

The NVIDIA driver attempts to identify such displays and automatically disables the audio. For example, the NVIDIA driver disables HDMI audio for all Philips HDMI TVs, as these have been identified as having issues with current NVIDIA graphics cards.

There may be cases where either the driver disables audio even though there is no problem, or does not disable the audio when in fact the audio does not work. The following sections describe these situations and provides guidance for handling them.

### Corrupted video and no audio

The driver has not disabled audio and the display's audio signal is incompatible with the graphics card, causing video corruption.

With a different display connected in order to establish video, disable audio for the HDMI display using the NVIDIA Control Panel-> Change Resolution page. From the connector list, select **HDMI-HDTV (Audio Disabled)**.

### Video but no audio

Check the connector list on the NVIDIA Control Panel->Change Resolution page.

- If **HDMI-HDTV (Audio Disabled)** is selected and you want to test whether your HDMI audio does, in fact, work, then select **HDMI-HDTV (Audio Enabled)** and the driver will prompt you with instructions for testing HDMI audio with the display.
- If **HDMI-HDTV (Audio Enabled)** is selected, then the driver has not successfully detected that an incompatible display is connected.  
*Future driver versions will properly identify such displays and disable audio.*
- If there is no HDMI connector option in the NVIDIA Control Panel->Change Resolution page, the display does not support audio and has properly reported this to the NVIDIA driver.

## Using HDMI/DisplayPort Audio in Dualview or Clone Mode Configurations

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### Two Audio-enabled Ports

In a multi-display configuration where both HDMI/DisplayPort audio ports are enabled, only the primary display will provide the audio.

### One Audio-enabled Port

In a multi-display configuration where only one audio port is enabled, such as when one display is a DVI display, then the HDMI/DisplayPort display can provide the audio whether is it the primary or secondary display.

## Flat Panel Scaling Controls are Non-functional for Some TV Modes for Some Displays

---

The NVIDIA Control Panel flat panel scaling controls on the "Adjust Desktop Size & Position" page are not intended to be used for TV modes, and normally the controls are not available for TV or HDTV displays.

However, Microsoft requires that certain TV/HDTV modes be available for all digital displays, including DVI and HDMI, even if they are not HDTV.

While the NVIDIA flat panel scaling controls are available for those displays, they will not be functional for the TV modes that appear in compliance with the Microsoft requirements. The affected modes are as follows:

- 1920x1080i @50/59.94/60 Hz
- 1280x720p @50/59.94/60 Hz
- 720x480p @ 59.94/60 Hz
- 720x576p @ 50 Hz

## GPU Runs at a High Performance Level (full clock speeds) in Multi-display Modes

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This is a hardware limitation and not a software bug. Even when no 3D programs are running, the driver will operate the GPU at a high performance level in order to efficiently drive multiple displays. In the case of SLI or multi-GPU PCs, the second GPU will always operate with full clock speeds; again, in order to efficiently drive multiple displays. Today, all hardware from all GPU vendors have this limitation.

## **1280x1024 @ 60 Hz not Available on BenQ FP241W Monitors**

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Even though the monitor EDID lists 1280x1024 @ 60 Hz, the screen turns blank when using an HDMI connection. This is an issue with the monitor and not the NVIDIA driver.

Because of this issue with the monitor, the NVIDIA driver blocks the problem mode (1280x1024 @ 60 Hz) and makes it unavailable.

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

---

With GeForce 8 Series and later graphics cards, the **Image sharpening** slider on the NVIDIA Control Panel-> Display->Adjust Desktop Color Settings page is grayed out.

This control is intentionally disabled because image sharpening is not supported on GeForce 8 series and later GPUs.

## **Gigabyte GA-6BX Motherboard**

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This motherboard uses a LinFinity regulator on the 3.3-V rail that is rated to only 5 A—less than the AGP specification, which requires 6 A. When diagnostics or applications are running, the temperature of the regulator rises, causing the voltage to the NVIDIA chip to drop as low as 2.2 V. Under these circumstances, the regulator cannot supply the current on the 3.3-V rail that the NVIDIA chip requires.

This problem does not occur when the graphics board has a switching regulator or when an external power supply is connected to the 3.3-V rail.



## CHAPTER

## 3

# THE RELEASE 197 DRIVER

This chapter covers the following main topics:

- “Hardware and Software Support” on page 29
- “Driver Installation” on page 34

## Hardware and Software Support

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### Supported Operating Systems

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The Release 197 driver, version 197.16, has been tested with

- Microsoft Windows® 7 RC build version 7100, and supports both 32-bit and 64-bit versions.
- Microsoft Windows® Vista RTM OS builds version 6000 or higher, and supports both 32-bit and 64-bit versions of Windows Vista Editions:
  - Windows Vista Home Basic
  - Windows Vista Home Premium
  - Windows Vista Business
  - Windows Vista Enterprise Edition
  - Windows Vista Ultimate

## Supported NVIDIA Products

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The driver supports notebooks based on the GPUs listed in the following sections:

- “Supported GeForce GPUs” on page 30
- “Supported NVIDIA Quadro NVS GPUs” on page 32
- “Supported NVIDIA Quadro FX GPUs” on page 32

However, the following notebooks are *not* supported in this release:

- HybridPower notebooks
- **Fujitsu** notebooks (please contact the notebook OEM for driver support for these notebooks)
- **Sony VAIO** notebooks (please contact the notebook OEM for driver support for these notebooks)
- Any notebook that is launched after the release of this driver version.

## Supported GeForce GPUs

Table 3.1 lists the NVIDIA products supported by the Release 197 driver, version 197.16.

**Table 3.1** Supported NVIDIA GeForce GPUs

### Consumer Products

ION  
 ION LE  
 GeForce GTS 360M  
 GeForce GTS 350M  
 GeForce GTS 250M  
 GeForce GT 335M  
 GeForce GT 330M  
 GeForce GT 325M  
 GeForce 310M  
 GeForce 305M  
 GeForce GTX 285M  
 GeForce GTX 280M  
 GeForce GTX 260M  
 GeForce GT 240M  
 GeForce GT 230M  
 GeForce GT 220M  
 GeForce GTS 160M  
 GeForce GT 130M  
 GeForce GT 120M  
 GeForce G 210M

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

GeForce G 110M  
GeForce G 107M  
GeForce G 105M  
GeForce G 103M  
GeForce G 102M  
GeForce 9800M GTX  
GeForce 9800M GTS  
GeForce 9800M GT  
GeForce 9800M GS  
GeForce 9700M GTS  
GeForce 9700M GT  
GeForce 9650M GT  
GeForce 9650M GS  
GeForce 9600M GT  
GeForce 9600M GS  
GeForce 9500M GS  
GeForce 9500M G  
GeForce 9400M G  
GeForce 9400M  
GeForce 9300M GS  
GeForce 9300M G  
GeForce 9200M GS  
GeForce 9200M GE  
GeForce 9100M G  
GeForce 8800M GTX  
GeForce 8800M GTS  
GeForce 8800M GS  
GeForce 8700M GT  
GeForce 8600M GT  
GeForce 8600M GS  
GeForce 8400M GT  
GeForce 8400M GS  
GeForce 8400M G  
GeForce 8200M G

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## Supported NVIDIA Quadro NVS GPUs

Table 3.2 lists the NVIDIA products supported by the Release 197 driver, version 197.16.

**Table 3.2** Supported NVIDIA Quadro NVS GPUs

### Consumer Products

Quadro NVS 3100M  
Quadro NVS 5100M  
Quadro NVS 320M  
Quadro NVS 160M  
Quadro NVS 150M  
Quadro NVS 140M  
Quadro NVS 135M  
Quadro NVS 130M

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## Supported NVIDIA Quadro FX GPUs

Table 3.3 lists the NVIDIA products supported by the Release 197 driver, version 197.16.

**Table 3.3** Supported NVIDIA Quadro NVS GPUs

### Consumer Products

Quadro FX 3800M  
Quadro FX 3700M  
Quadro FX 3600M  
Quadro FX 2800M  
Quadro FX 2700M  
Quadro FX 1800M  
Quadro FX 1700M  
Quadro FX 1600M  
Quadro FX 880M  
Quadro FX 770M  
Quadro FX 570M  
Quadro FX 380M  
Quadro FX 370M  
Quadro FX 360M

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## Supported Languages

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The Release 197 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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## Minimum Hard Disk Space

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The hard disk space requirement for driver installation is minimum 160 MB.

## Before You Begin

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- If you have previously installed NVIDIA nTune, NVIDIA recommends that you uninstall nTune before installing this driver. After the driver install is complete, you can reinstall NVIDIA nTune.
- Check to make sure that your notebook has a supported GPU and is not listed in the exclusion list (see “[Supported NVIDIA Products](#)” on page 30).
- It is recommended that you back up your current system configuration.
- If you own a Dell Inspiron 1420, Dell XPS M1330, or Dell XPS M1530, Dell LatitudeD630 or D630c, it is highly recommended that you first install this [Dell software update](#).

## Installation Instructions

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- 1 Follow the instructions on the NVIDIA .com Web site driver download page to locate the appropriate driver to download, based on your hardware and operating system.
- 2 Click the driver download link.
- 3 The license agreement dialog box appears.
- 4 Click **Accept** if you accept the terms of the agreement, then either open the file or save the file to your PC and open it later.
- 5 Extract the zip files to a temporary folder on your PC.
- 6 Open the NVIDIA driver installation .EXE file to launch the NVIDIA InstallShield Wizard.
- 7 Follow the instructions in the NVIDIA InstallShield Wizard to complete the installation.

**Note:** After the driver installation, Windows may default to 16-bpp color and disable the Desktop Window Manager (DWM). To work around this issue, set the color to 32-bpp and then reboot the PC.

## APPENDIX



## MODE SUPPORT FOR WINDOWS

This chapter details the Windows modes supported by the Release 197 driver for NVIDIA products. It contains these sections:

- “General Mode Support Information” on page 36
- “Default Modes Supported by GPU” on page 37
- “Modes Supported by TV Encoders” on page 41

## General Mode Support Information

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The NVIDIA graphics driver includes a standard list of display modes that are supported by default. These modes are listed in the section [“Default Modes Supported by GPU”](#) on page 37.

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 GeForce 7 series GPUs and later</li> <li>• GeForce 6800 Ultra 512</li> <li>• GeForce 6800 with 512 MB</li> </ul>
Dell WFP 3007 (Dual Link DVI)	2560x1600 @ 60 Hz	
HP LP3065 dual-link DVI flat panel	2560x1600 @ 60Hz.	

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

Resolution
1680 x 1050
1366 x 768

## Default Modes Supported by GPU

---

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

- “GeForce 9M, 8M, 100M, 200M and Quadro NVS and Quadro FX Notebook GPUs” on page 38

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

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

**Meaning:**

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

**Figure A.1** Mode Format

**Note:**

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

## GeForce 9M, 8M, 100M, 200M and Quadro NVS and Quadro FX Notebook GPUs

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This sections lists the supported display resolutions, color depths, and refresh rates for the products listed in [“Supported NVIDIA Products”](#) on page 30.

### Standard Modes

640 x 480	8	60 70 72 75 85 100 120 140 144 150 170 200 240
800 x 600	8	60 70 72 75 85 100 120 140 144 150 170 200 240
848 x 480	8	60 70 72 75 85 100 120 140 144 150 170 200 240
960 x 600	8	60 70 72 75 85 100 120 140 144 150 170 200 240
1024 x 768	8	60 70 72 75 85 100 120 140 144 150 170 200 240
1088 x 612	8	60 70 72 75 85 100 120 140 144 150 170 200 240
1152 x 864	8	60 70 72 75 85 100 120 140 144 150 170 200
1280 x 720	8	60
1280 x 768	8	60 70 72 75 85 100 120 140 144 150 170
1280 x 800	8	60 70 72 75 85 100 120 140 144 150 170
1280 x 960	8	60 70 72 75 85 100 120 140 144 150 170
1280 x 1024	8	60 70 72 75 85 100 120 140 144 150 170
1360 x 768	8	60 70 72 75 85 100 120 140 144 150 170
1600 x 900	8	60 70 72 75 85 100 120 140 144 150
1600 x 1024	8	60 70 72 75 85 100 120
1600 x 1200	8	60 70 72 75 85 100 120
1680 x 1050	8	60
1920 x 1080	8	60
1920 x 1200	8	60 70 72 75 85 100
1920 x 1440	8	60 70 72 75 85
2048 x 1536	8	60

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640 x 480	16	60 70 72 75 85 100 120 140 144 150 170 200 240
800 x 600	16	60 70 72 75 85 100 120 140 144 150 170 200 240
848 x 480	16	60 70 72 75 85 100 120 140 144 150 170 200 240
960 x 600	16	60 70 72 75 85 100 120 140 144 150 170 200 240
1024 x 768	16	60 70 72 75 85 100 120 140 144 150 170 200 240
1088 x 612	16	60 70 72 75 85 100 120 140 144 150 170 200 240
1152 x 864	16	60 70 72 75 85 100 120 140 144 150 170 200
1280 x 720	16	60

1280 x 768	16	60 70 72 75 85 100 120 140 144 150 170
1280 x 800	16	60 70 72 75 85 100 120 140 144 150 170
1280 x 960	16	60 70 72 75 85 100 120 140 144 150 170
1280 x 1024	16	60 70 72 75 85 100 120 140 144 150 170
1360 x 768	16	60 70 72 75 85 100 120 140 144 150 170
1600 x 900	16	60 70 72 75 85 100 120 140 144 150
1600 x 1024	16	60 70 72 75 85 100 120
1600 x 1200	16	60 70 72 75 85 100 120
1680 x 1050	16	60
1920 x 1080	16	60
1920 x 1200	16	60 70 72 75 85 100
1920 x 1440	16	60 70 72 75 85
2048 x 1536	16	60

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640 x 480	32	60 70 72 75 85 100 120 140 144 150 170 200 240
800 x 600	32	60 70 72 75 85 100 120 140 144 150 170 200 240
848 x 480	32	60 70 72 75 85 100 120 140 144 150 170 200 240
960 x 600	32	60 70 72 75 85 100 120 140 144 150 170 200 240
1024 x 768	32	60 70 72 75 85 100 120 140 144 150 170 200 240
1088 x 612	32	60 70 72 75 85 100 120 140 144 150 170 200 240
1152 x 864	32	60 70 72 75 85 100 120 140 144 150 170 200
1280 x 720	32	60
1280 x 768	32	60 70 72 75 85 100 120 140 144 150 170
1280 x 800	32	60 70 72 75 85 100 120 140 144 150 170
1280 x 960	32	60 70 72 75 85 100 120 140 144 150 170
1280 x 1024	32	60 70 72 75 85 100 120 140 144 150 170
1360 x 768	32	60 70 72 75 85 100 120 140 144 150 170
1600 x 900	32	60 70 72 75 85 100 120 140 144 150
1600 x 1024	32	60 70 72 75 85 100 120
1600 x 1200	32	60 70 72 75 85 100 120
1680 x 1050	32	60
1920 x 1080	32	60
1920 x 1200	32	60 70 72 75 85 100
1920 x 1440	32	60 70 72 75 85
2048 x 1536	32	60

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640 x 480	64	60 70 72 75 85 100 120 140 144 150 170 200 240
800 x 600	64	60 70 72 75 85 100 120 140 144 150 170 200 240
848 x 480	64	60 70 72 75 85 100 120 140 144 150 170 200 240

960 x 600	64	60 70 72 75 85 100 120 140 144 150 170 200 240
1024 x 768	64	60 70 72 75 85 100 120 140 144 150 170 200 240
1088 x 612	64	60 70 72 75 85 100 120 140 144 150 170 200 240
1152 x 864	64	60 70 72 75 85 100 120 140 144 150 170 200
1280 x 720	64	60
1280 x 768	64	60 70 72 75 85 100 120 140 144 150 170
1280 x 800	64	60 70 72 75 85 100 120 140 144 150 170
1280 x 960	64	60 70 72 75 85 100 120 140 144 150 170
1280 x 1024	64	60 70 72 75 85 100 120 140 144 150 170
1360 x 768	64	60 70 72 75 85 100 120 140 144 150 170
1600 x 900	64	60 70 72 75 85 100 120 140 144 150
1600 x 1024	64	60 70 72 75 85 100 120
1600 x 1200	64	60 70 72 75 85 100 120
1680 x 1050	64	60
1920 x 1080	64	60
1920 x 1200	64	60 70 72 75 85 100
1920 x 1440	64	60 70 72 75 85
2048 x 1536	64	60

## Modes Supported by TV Encoders

Table A.3 and Table A.4 list the NTSC, PAL, and HDTV TV-Out modes supported by the NVIDIA driver.

**Table A.3** Mode Support for S-Video and Composite Out

Resolution	Bit depth	Comments
320x200	8, 16, 32	DirectDraw mode; not selectable as a Windows desktop
320x240	8, 16, 32	DirectDraw mode; not selectable as a Windows desktop
640x400	8, 16, 32	DirectDraw mode; not selectable as a Windows desktop
640x480	8, 16, 32	
720x480	8, 16, 32	Overscans (for video)
720x576	8, 16, 32	Overscans (for video)
800x600	8, 16, 32	
1024x768	8, 16, 32	Conexant 25871 only

**Table A.4** Mode Support for Component YPrPb Out and DVI Out

Resolution	Comments
480i (SDTV)	Supported on graphics boards with Conexant 875 or Philips 7108 TV encoders and compatible connectors, and compatible GeForce 6 Series and GeForce 7 Series GPUs.
480p (EDTV)	
720p (HDTV)	
1080i (HDTV)	
576i (PAL)	
576p (PAL)	

The driver supports manual overscan correction for component and DVI outputs. See the *ForceWare Graphics Driver User's Guide* for instructions on how to use the overscan correction features in the control panel.