



# Release 191 GRAPHICS DRIVERS *Release Notes*

**Version 191.07**

**For Windows 7 32-bit  
and Windows 7 64-bit**

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**NVIDIA Corporation  
October 5, 2009**

Published by  
NVIDIA Corporation  
2701 San Tomas Expressway  
Santa Clara, CA 95050

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## CHAPTER

## 1

# INTRODUCTION TO *RELEASE NOTES*

This edition of *Release Notes* describes the Release 191 Graphics Drivers for Microsoft® Windows® 7. NVIDIA provides these notes to describe performance improvements and bug fixes in each documented version of the driver.

## Structure of the Document

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This document is organized in the following sections:

- “[Release 191 Driver Changes](#)” on page 3 gives a summary of changes, and fixed and open issues in this version.
- “[The Release 191 Driver](#)” on page 23 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 29 lists the default resolutions supported by the driver.

## Changes in this Edition

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This edition of the *Release Notes* for Windows 7 includes information about NVIDIA graphics driver version 191.07, and lists changes made to the driver since version 186.18. These changes are discussed beginning with the chapter “[Release 191 Driver Changes](#)” on page 3.



## CHAPTER

## 2

# RELEASE 191 DRIVER CHANGES

This chapter describes open issues for version 191.07, and resolved issues and driver enhancements for versions of the Release 191 driver up to version 191.07. The chapter contains these sections:

- “Version 191.07 Highlights” on page 4
- “Changes in Version 191.03” on page 8
- “Changes in Version 190.62” on page 10
- “Changes in Version 190.38” on page 11
- “Open Issues in Version 191.07” on page 12
- “Not NVIDIA Issues” on page 15
- “Known Product Limitations” on page 18

## Version 191.07 Highlights

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This section provides highlights of version 191.07 of the NVIDIA Release 191 Driver for Windows 7.

- [What's New in Release 191](#)
- [What's New in Version 191.07](#)
- [Limitations in This Release](#)

### What's New in Release 191

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The section summarizes the following driver changes in Release 191:

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

### NVIDIA Control Panel Updates

#### 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 the game or application.

In Release 190, the method for resizing the HDTV desktop has changed to provide better image quality when applying underscan. This method results in a new resolution being created. Some games or applications may not support the new resolution, however.

## 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** 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 2.3
- Added support for 64-bit video encoding.
- Added support to make all GPUs within an SLI group available for CUDA applications to use.

## OpenGL Updates

- Added support for OpenGL 3.1

## What's New in Version 191.07

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- This driver version adds support for NVIDIA PhysX acceleration on all GeForce 8-series, 9-series, 100-series, and 200-series GPUs with a minimum of 256MB dedicated graphics memory and a minimum of 32 processor cores (this driver package installs NVIDIA PhysX System Software v9.09.0814).
- Added support for the following NVIDIA products:
  - GeForce GTS 240
  - GeForce GT 220
  - GeForce G210
  - GeForce 210
  - GeForce G100
- See [“Changes in Version 191.03” on page 8](#) for a list of the latest resolved issues.

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

## Changes in Version 191.03

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The following sections list the changes made and issues resolved since driver version 190.62.

The NVIDIA bug number is provided for reference.

### Fixed Issues—Windows 7 (32-bit)

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#### Single GPU Resolved Issues

- Sometimes there is no NVIDIA Control Panel available after installing the driver. [589854]
- After installing the international graphics driver package, an error message indicates that the driver was not installed correctly or not installed at all. [576128]
- The NVIDIA Control Panel is unable to change the desktop size for TVs. [565874]
- 3D Vision: The system may hang if you turn on or off stereoscopic 3D effects while in a game, such as by pressing [Ctrl+T] or pressing the 3D Vision emitter button. [587642]

*This did not occur with 3D Vision Discover, but only with 3D Vision when using 120 Hz projectors, LCD displays, or analog CRTs.*

- GeForce GTX 285: After changing the resolution on an S-video or composite display, several problems occur—the display becomes black and white, the control panel "TV format" list box becomes blank, and the connector type is set to "Auto". [580025]
- GeForce 9800 GX2, [Stereo]: Far Cry 2—with stereo enabled, blue-screen crash occurs after quitting the game. [571814]
- GeForce 9800 GX2, [Stereo]: Dead Space—with stereo enabled, the application crashes when toggling from full-screen to windowed mode. [569814]
- GeForce 9800 GTX: HDTV cannot be set to 576i/480i format using the NVIDIA Control Panel desktop resize controls. [591614]
- GeForce 9600 GT: When set to 0%, the Digital Vibrance setting isn't preserved after resuming from sleep/hibernate mode. [577014]
- GeForce 8 Series: When using the S-Video connection, upon changing the resolution to 1024x768 or 800x600 the screen turns blank. [584896]

#### Multi-GPU Resolved Issues

- [SLI], GeForce GTX 285: The Yes/No confirmation box does not appear after switching from Dualview mode to single-display mode. [576117]

- [3-way SLI], Hybrid GeForce GTX 260 + nForce 780a SLI: The default Digital Vibrance setting cannot be restored. [557497]

## Fixed Issues Windows 7 (64-bit)

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### Single GPU Resolved Issues

- Sometimes there is no NVIDIA Control Panel available after installing the driver. [589854]
- The NVIDIA Control Panel is unable to change the desktop size for TVs. [565874]
- 3D Vision: Fear Perseus Mandate (DirectX 9)–water doesn't render in stereo. [589797]
- 3D Vision: Hellgate London (DirectX 10)–the application crashes when launched with stereo enabled in the NVIDIA Control Panel. [589285]
- GeForce GT 220: Unreal Tournament 3 (DirectX 9)–ambient occlusion does not work with the game. [584590]
- GeForce GT 220, nForce 740i SLI: After installing the driver and rebooting the system, Windows fails to load. [576100]
- GeForce GTX 285: After changing the resolution on an S-video or composite display, several problems occur–the display becomes black and white, the control panel "TV format" list box becomes blank, and the connector type is set to "Auto". [580025]
- GeForce 9800 GTX: HDTV cannot be set to 576i/480i format using the NVIDIA Control Panel desktop resize controls. [591614]
- GeForce 9600 GT: When set to 0%, the Digital Vibrance setting isn't preserved after resuming from sleep/hibernate mode. [577014]

### Multi-GPU Resolved Issues

- [SLI], GeForce GTX 285: The Yes/No confirmation box does not appear after switching from Dualview mode to single-display mode. [576117]
- [3-way SLI], Hybrid GeForce GTX 260 + nForce 780a SLI: The default Digital Vibrance setting cannot be restored. [557497]
- [Quad SLI], GeForce GTX 295: When switching the SLI focus to another display on the same GPU, the desktop switches to Dualview mode instead. [521230]

## Changes in Version 190.62

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The following sections list the changes made and issues resolved since driver version 190.38.

The NVIDIA bug number is provided for reference.

### Fixed Issues–Windows 7 (32-bit)

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#### Single GPU Resolved Issues

- GeForce 9500 GS: With a VGA and S?Video display connected in Clone mode, the NVIDIA Control Panel Change REsolution controls do not work. [558589]

### Fixed Issues Windows 7 (64-bit)

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#### Multi-GPU Resolved Issues

- [Quad?]SLI], GeForce 7950 GX2: Quad SLI cannot be enabled when the NVIDIA Control Panel is maximized. [575191]

## Changes in Version 190.38

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The following sections list the changes made and issues resolved since driver version 186.18.

The NVIDIA bug number is provided for reference.

### Fixed Issues–Windows 7 (32-bit)

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#### Single GPU Resolved Issues

- GeForce GTX 285: When setting a custom resolution on the secondary Dualview display using the NVIDIA Control Panel “Manage Custom Resolutions” page, the primary display switches to the newly created resolution. [539807]

### Fixed Issues Windows 7 (64-bit)

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#### Single GPU Resolved Issues

- GeForce GTX 285: When setting a custom resolution on the secondary Dualview display using the NVIDIA Control Panel “Manage Custom Resolutions” page, the primary display switches to the newly created resolution. [539807]

## Open Issues in Version 191.07

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As with every released driver, version 191.07 of the Release 191 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.

- [“Windows 7 32-bit Issues”](#) on page 12
- [“Windows 7 64-bit Issues”](#) on page 13

### Windows 7 32-bit Issues

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#### Single GPU Issues

- After creating a custom resolution with refresh rate of 59 Hz, the new resolution appears in the Add Resolutions page at 60 Hz and the corresponding check box is not checked. [571459]
- GeForce GTX 280: Assassin's Creed (DirectX 10)—the game hangs at the main menu screen when Ambient Occlusion is activated from the NVIDIA Control Panel. [545516]
- GeForce 200 Series, GeForce 9800 GX2: Changes to the NVIDIA Control Panel->Manage 3D Settings->Override Antialiasing control do not get applied when playing most DirectX 9 games in windowed mode. [555282]
- GeForce 9800 GX2: Sid Meier's Railroads—the RADAR graphic becomes corrupt after changing the in-game antialiasing level while in a game. [569877]
- GeForce 9800 GTX: 576i/480i format cannot be applied to HDTV + DVI displays connected in Clone mode. [591628]
- GeForce 9800 GTX: On the NVIDIA Control Panel Adjust desktop size and position page, the Resize desktop option does not appear for HD or SD resolutions. [595062]
- GeForce 9800 GTX: Far Cry 2—with the in-game resolution set to 1920x1200 and antialiasing set to 2x or higher, there is corruption when looking up at the sky. [555163]

#### Multi-GPU Issues

- [SLI], nForce 980a/780a: With two displays connected in Dualview mode, the primary and secondary displays cannot be switched a second time. [588038]
- [Quad-SLI], GeForce GTX 295: CUDA Post-Process in OpenGL—SLI antialiasing values remain on the desktop even after closing the application. [581588]
- [SLI], GeForce 9800 GX2: World in Conflict—grass textures flicker. [544657]



- [SLI], GeForce 9500 GT: With SLI enabled and two displays enabled on the primary GPU, the display output cannot be switched to a display connected to the secondary GPU. [587206]

## Windows 7 64-bit Issues

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### Single GPU Issues

- ION: The maximum resolution available is 1280x800, even though the display's native resolution is 2560x1600. [594726]
- GeForce 200 Series, NVIDIA Control Panel: After installing the driver, the preview animation (NVIDIA spinning logo) is missing from the Adjust Image Settings with Preview page, the screen flickers when navigating to another page, and Windows Aero cannot be enabled.[566196]

*The issue does not occur after you reboot the system.*

- GeForce GTX 295: Bioshock(Steam)–corruption/non-rendered blank patches appear after applying any value of override antialiasing from the NVIDIA Control Panel. [584872]
- GeForce GTX 280: The NVIDIA Control Panel becomes unresponsive if Alt+Tab is pressed while on the 3D Vision Setup page. [591546]
- GeForce GTX 280: Assassin's Creed (DirectX 10)–the game hangs at the main menu screen when Ambient Occlusion is activated from the NVIDIA Control Panel. [545516]
- GeForce 9800 GTX: 576i/480i format cannot be applied to HDTV + DVI displays connected in Clone mode. [591628]
- GeForce 9800 GTX: Arma 2–textures are blurry.[582287]
- GeForce 9800 GTX: On the NVIDIA Control Panel Adjust desktop size and position page, the Resize desktop option does not appear for HD or SD resolutions. [595062]

### Multi-GPU Issues

- [SLI], GeForce 200 Series: With two displays connected in Dualview mode, changes to the NVIDIA Control Panel-> Adjust Desktop Color Settings->NVIDIA settings are not preserved after enabling or disabling SLI mode. [554097]
- [SLI], GeForce 200 Series: When adding a display in extended mode, it automatically becomes the primary display. [583031]
- [Quad-SLI], GeForce GTX 295: CUDA Post-Process in OpenGL–SLI antialiasing values remain on the desktop even after closing the application. [581588]
- [SLI], GeForce 9600 GS: HDTV name on the Set up multiple displays page changes to TV after enabling SLI in single-display mode. [591498]

- [SLI], GeForce 8600 GT: Gears of War (DirectX 10)–with SLI mode enabled, there is corruption and flickering with the default settings and in-game antialiasing enabled. [541836]

## 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 7.

- “Unsupported Features” on page 15
- “Feature Differences from Windows Vista” on page 16
- “OpenGL Application Issues” on page 17
- “Application Issues” on page 17

## 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 7:

- **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.

- **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 from Windows Vista**

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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

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/Windows 7
  - 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

- World of Warcraft—if you have run the 3D Vision setup wizard, then the game automatically enables 3D stereo even after you disable it.

*To work around this issue, you must uninstall the 3D Vision driver.*

## 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 18
- “Using HDMI/DisplayPort Displays that do not Support Audio” on page 19
- “Using HDMI/DisplayPort Audio in Dualview or Clone Mode Configurations” on page 20
- “Flat Panel Scaling Controls are Non-functional for Some TV Modes for Some Displays” on page 20
- “GPU Runs at a High Performance Level in Multi-display Modes” on page 21
- “Automatic Desktop Scaling for Analog Displays” on page 21
- “GeForce GTX 295 Fan Control and NVIDIA Control Panel Performance Group version 6.03.06.00” on page 21
- “1280x1024 @ 60 Hz not Available on BenQ FP241W Monitors” on page 21
- “Image Sharpening Control not Available with GeForce 8 Series and later GPUs” on page 21
- “Gigabyte GA-6BX Motherboard” on page 22

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

---

*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:

- 1280x720p @ 50 Hz (16x9)
- 1280x720p @ 59.94 Hz (16x9)
- 1440x480i @ 59.94 Hz (16x9)
- 1440x480i @ 59.94 Hz (4x3)
- 1440x576i @ 50 Hz (16x9)
- 1440x576i @ 50 Hz (4x3)
- 1920x1080i @ 50 Hz (16x9)
- 1920x1080i @ 59.94 Hz (16x9)
- 1920x1080p @ 50 Hz (16x9)
- 1920x1080p @ 59.94 Hz (16x9)
- 640x480p @ 59.94 Hz (4x3)
- 720x480p @ 59.94 Hz (16x9)
- 720x480p @ 59.94 Hz (4x3)
- 720x576p @ 50 Hz (16x9)
- 720x576p @ 50 Hz (4x3)



## **GPU Runs at a High Performance Level in Multi-display Modes**

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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.

## **Automatic Desktop Scaling for Analog Displays**

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(As of Release 185) To prevent unsupported timings from being applied to digital displays that use the analog (VGA) connection, the Windows 7 driver scales the desktop automatically.

This limits the available resolutions to those supported in the monitor EDID. While not recommended, you can attempt to set other resolutions by creating and then applying a custom resolution using the NVIDIA Control Panel Change Resolution page.

In a future driver release, controls will be available in the NVIDIA Control Panel to let you select the scaling method.

## **GeForce GTX 295 Fan Control and NVIDIA Control Panel Performance Group version 6.03.06.00**

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The GeForce GTX 295 fan control does not function properly when using the NVIDIA Control Panel Performance Group version 6.03.06.00. For proper fan control, use version 6.03.12.00 or later.

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

---

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**

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

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

## **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 191 DRIVER

This chapter covers the following main topics:

- “Hardware and Software Support” on page 23
- “Driver Installation” on page 27

## Hardware and Software Support

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### Supported Operating Systems

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The Release 191 driver, version 191.07, has been tested with Microsoft Windows® 7 RC build version 7100, and supports both 32-bit and 64-bit versions.

## Supported NVIDIA Products

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Table 3.1 lists the NVIDIA products supported by the Release 191 driver, version 191.07

**Table 3.1** Supported NVIDIA Products

### Consumer Products

GeForce GTX 295  
GeForce GTX 285  
GeForce GTX 280  
GeForce GTX 275  
GeForce GTX 260  
GeForce GTS 250  
GeForce GTS 240  
GeForce GT 220  
GeForce G210  
GeForce 210  
GeForce GT 140  
GeForce GT 130  
GeForce GT 120  
GeForce G100  
GeForce 9800 GX2  
GeForce 9800 GTX+  
GeForce 9800 GTX  
GeForce 9800 GT  
GeForce 9600 GT  
GeForce 9600 GS  
GeForce 9600 GSO  
GeForce 9500 GT  
GeForce 9500 GS  
GeForce 9400 GT  
GeForce 9400  
GeForce 9300 GS  
GeForce 9300 GE  
GeForce 9300  
GeForce 9200  
GeForce 8800 Ultra  
GeForce 8800 GTX  
GeForce 8800 GTS 512  
GeForce 8800 GTS  
GeForce 8800 GT  
GeForce 8800 GS  
GeForce 8600 GTS  
GeForce 8600 GT  
GeForce 8600 GS  
GeForce 8500 GT  
GeForce 8400 GS  
GeForce 8400 SE

**Table 3.1** Supported NVIDIA Products**Consumer Products**

GeForce 8400  
GeForce 8300 GS  
GeForce 8300  
GeForce 8200  
GeForce 8100 / nForce 720a  
nForce 780a SLI  
nForce 760i SLI  
nForce 750a SLI  
nForce 730a  
GeForce 7950 GX2  
GeForce 7950 GT  
GeForce 7900 GTX  
GeForce 7900 GT/GTO  
GeForce 7900 GS  
GeForce 7800 SLI  
GeForce 7800 GTX  
GeForce 7800 GT  
GeForce 7800 GS  
GeForce 7650 GS  
GeForce 7600 GT  
GeForce 7600 GS  
GeForce 7600 LE  
GeForce 7500 LE  
GeForce 7350 LE  
GeForce 7300 SE  
GeForce 7300 LE  
GeForce 7300 GT  
GeForce 7300 GS  
GeForce 7200 GS  
GeForce 7100 GS  
GeForce 7150 / NVIDIA nForce 630i  
GeForce 7100 / NVIDIA nForce 630i  
GeForce 7050 / NVIDIA nForce 620i  
GeForce 7050 / NVIDIA nForce 610i  
GeForce 7100 / NVIDIA nForce 620i  
GeForce 7050 PV / NVIDIA nForce 630a  
GeForce 7050 PV / NVIDIA nForce 630a  
GeForce 7025 / NVIDIA nForce 630a  
GeForce 6800 XT  
GeForce 6800 XE  
GeForce 6800 Ultra  
GeForce 6800 Series GPU  
GeForce 6800 LE  
GeForce 6800 GT  
GeForce 6800 GS/XT  
GeForce 6800 GS

**Table 3.1** Supported NVIDIA Products**Consumer Products**

GeForce 6800  
 GeForce 6700 XL  
 GeForce 6610 XL  
 GeForce 6600 VE  
 GeForce 6600 LE  
 GeForce 6600 GT  
 GeForce 6600  
 GeForce 6500  
 GeForce 6250  
 GeForce 6200SE TurboCache™  
 GeForce 6200 TurboCache™  
 GeForce 6200 LE  
 GeForce 6200 A-LE  
 GeForce 6200  
 GeForce 6150SE nForce 430  
 GeForce 6150 LE  
 GeForce 6150  
 GeForce 6100 nForce 420  
 GeForce 6100 nForce 405  
 GeForce 6100 nForce 400  
 GeForce 6100

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**Supported Languages**

The Release 191 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 32-bit is minimum 105 MB for English-only, and 142 MB for International.

The hard disk space requirement for 64-bit is minimum 135 MB for English-only, and 170 MB for International.

## 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.

## 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.





## APPENDIX



## MODE SUPPORT FOR WINDOWS

This chapter details the Windows modes supported by the Release 191 driver for NVIDIA products. It contains these sections:

- “General Mode Support Information” on page 30
- “Default Modes Supported by GPU” on page 31
- “Modes Supported by TV Encoders” on page 34

## 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 31.

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

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

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

Display	Maximum Resolution
Apple 30" Cinema HD Display (Dual link DVI)	2560x1600 @ 60 Hz
Dell WFP 3007 (Dual Link DVI)	2560x1600 @ 60 Hz
HP LP3065 dual-link DVI flat panel	2560x1600 @ 60Hz.

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

Resolution
1680 x 1050
1366 x 768

## Default Modes Supported by GPU

---

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

- “GeForce 200, 100, 9 Series, 8 Series, 7 Series, 6 Series, and nForce 7xx/6xx GPUs” on page 32

## 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
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**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 200, 100, 9 Series, 8 Series, 7 Series, 6 Series, and nForce 7xx/6xx GPUs

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This sections lists the supported display resolutions, color depths, and refresh rates for the the products listed in [Table 3.1 on page 24](#).

### Standard Modes

640 x 480	8	60 70 72 75 85 100 120 140 144 150 170 200 240
720 x 480	8	60
720 x 576	8	50
800 x 600	8	60 70 72 75 85 100 120 140 144 150 170 200 240
1024 x 768	8	60 70 72 75 85 100 120 140 144 150 170 200 240
1152 x 864	8	60 70 72 75 85 100 120 140 144 150 170 200
1280 x 720	8	60
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
720 x 480	16	60
720 x 576	16	50
800 x 600	16	60 70 72 75 85 100 120 140 144 150 170 200 240
1024 x 768	16	60 70 72 75 85 100 120 140 144 150 170 200 240
1152 x 864	16	60 70 72 75 85 100 120 140 144 150 170 200
1280 x 720	16	60
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
-----			
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	
800 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
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

## 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.