NVIDIA 3DTV PLAY

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User Guide

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PREFACE

The document is organized into the following chapters:

Chapter 1: **Introduction**
Provides the intention of this document and list the minimum system requirements, supported HDMI audio formats, and 3D-capable NVIDIA graphic cards.

Chapter 2: **Setup and Software Installation**
Provides the basics of configuring a PC featuring NVIDIA 3DTV Play connected to a 3D TV. These instructions focus on setting up 3DTV Play software, 3D TV settings, and using the connector a graphics card to an HDMI port on your HDTV since newer HDTVs are shipping with additional HDMI ports.

Chapter 3 **Using NVIDIA 3DTV Play**
Provides instructions on how setup and use the software to play 3D games, view 3D movies, and view 3D photographs.

CHAPTER 1: INTRODUCTION

Turn your 3D TV into the ultimate, high-definition, 3D entertainment experience by connecting it to your NVIDIA® GeForce® GPU-powered PC or notebook. NVIDIA 3DTV Play™ allows you to leverage the 3D processing power of your GeForce GPU and all of the content available on your PC to create an immersive 3D experience in your own home.

NVIDIA 3DTV PLAY SOFTWARE KEY FEATURES:

- Works with HDMI 1.4 3D TVs and compatible 3D glasses system, including Panasonic® VIERA® Full HD 3D Plasma TVs
- Enjoy crisp, stunning Blu-ray™ 3D movies in full 1080p HD playback.[1] Your GeForce GPU accelerates the video decoding to provide seamless 3D quality.
- Converts your standard PC games into 3D so you can play over 425 PC games in stunning 3D environments, such as StarCraft® II: Wings of Liberty™, Mafia® II, and Lost Planet® 2.
- Browse 3D photographs on your 3D TV or view them in a slideshow with the included 3D photo viewing software

[1] Blu-ray 3D support requires the purchase of a compatible video playback software application from Corel, CyberLink, ArcSoft, or Roxio.

MINIMUM SYSTEM REQUIREMENTS

- CPU
  Intel® Core™2 Duo or AMD Athlon™ X2 CPU or higher
- Operating System
  - Windows 7 32-bit
  - Windows 7 64-bit (recommended)
- System Memory
  2 GB of system memory (4 GB recommended)
- 3D Vision USB IR emitter or notebook PC with Built-in 3D Vision IR emitter. The USB IR emitter must be plugged into the PC to use NVIDIA 3DTV Play

> **Note:** The 3D Vision USB IR emitter does not emit any signals when 3DTV Play is active, and is only used to confirm a previous purchase of 3D Vision. When using 3DTV Play software to connect to a 3D TV, 3D Vision active shutter glasses are not used. Instead the 3D TV manufacturer's 3D glasses are used.

- 3D TV that supports the following HDMI 1.4 3D formats
  - For Blu-ray 3D and movie content
    – Frame Packing 1080p @ 23.98Hz
    – Frame Packing 1080p @ 24Hz
  - For 3D game content:
    – Frame Packing 720p @ 50Hz
    – Frame Packing 720p @ 59.94Hz
    – Frame Packing 720p @ 60Hz
- GeForce Graphics Processors
  See Table 1 for a current list of supported GeForce GPUs. Refer to the *3DTV Play System Requirements* at www.nvidia.com/3dtv for an up-to-date list of supported GeForce GPUs

Table 1. NVIDIA GeForce Desktop Graphics Processors

	Ideal User	GeForce Model	3D Gaming	Blue-ray 3D	3D Picture Viewing
Desktop	Extreme Gamer, Power User, Multimedia Enthusiast	GeForce GTX 480	Excellent	Y	Y
		GeForce GTX 470	Excellent	Y	Y
		GeForce GTX 465	Excellent	Y	Y
		GeForce GTX 460	Excellent	Y	Y
		GeForce GTS 450	Excellent	Y	Y
		GeForce GTX 295	Excellent	Y*	Y
		GeForce GTX 285	Excellent	Y**	Y
		GeForce GTX 280	Excellent	Y*	Y
		GeForce GTX 275	Excellent	Y*	Y
		GeForce GTX 260	Excellent	Y*	Y
	Gamer, Multimedia User	GeForce GT 340	Good	Y	Y
		GeForce GT 330	Good	Y	Y
		GeForce GT 320	Good	Y	Y
Notebook	Extreme Gamer, Power User, Multimedia Enthusiast	GeForce GTX 480M	Excellent	Y	Y
		GeForce GTX 470M	Excellent	Y	Y
		GeForce GTX 460M	Excellent	Y	Y
	Gamer, Multimedia User	GeForce GTS360M	Good	Y	Y
		GeForce GTS 350M	Good	Y	Y
		GeForce GT 435M	Good	Y	Y
		GeForce GT 425M	Good	Y	Y
		GeForce GT 335M	Good	Y	Y

** Blu-ray 3D playback requires compatible Blu-ray 3D player software from companies such as CyberLink, Arcsoft, Corel or Roxio.*

- Supported 3D TVs
  Refer to the *3DTV Play System Requirements* at www.nvidia.com/3dtv for an up-to-date list of supported 3D TVs
- Supported Home Theater Receivers
  - 3DTV Play software supports home theater receivers that support HDMI 1.4 3D inputs. You can connect your PC directly to these receivers and let the receiver switch between compatible HDMI 1.4 devices
  - Refer to the *3DTV Play System Requirements* at www.nvidia.com/3dtv for an up-to-date list of supported home theater receivers
- HDMI cable or adapter
  - GPUs with HDMI connector: Standard HDMI cable
  - GPUs with mini HDMI connector: mini-HDMI to HDMI cable
  - GPUs with DVI connector: DVI to HDMI adapter cable

Note: If you need to purchase HDMI cables or an adapter for your NVIDIA GPU, please visit the NVIDIA Store (http://store.NVIDIA.com) and search for these compatible cables:

Part Number	Cable Type
030-0292-000	Astron mini HDMI to HDMI Cable (6ft)
320-0402-000	Wieson DVI-I to HDMI converter
030-0224-000	BizLink DisplayPort to HDMI Converter

- HDMI audio support
  - GPUs with HDMI or mini-HDMI connectors: no additional cables are needed since audio is carried over the HDMI cable.
  - GPUs with DVI connector:
    - HDMI audio can be carried over DVI to HDMI cable depending on the graphics card. For newer GPUs, you just need to set the HDMI audio device in the Windows Sound control panel. Older GPUs need to use a digital audio S/PDIF cable to connect from the PC to the graphics board's on board S/PDIF connector.
    - If your graphics card does not support HDMI audio over DVI or it does not have an S/PDIF cable built onto the card, you can use the motherboard's digital or analog audio connectors to output audio to the 3D TV or an external receiver. You will also need to disable the HDTV HDMI audio option from the NVIDIA Control Panel.
    - For more information, please consult the NVIDIA Knowledge Base at http://support.nvidia.com)

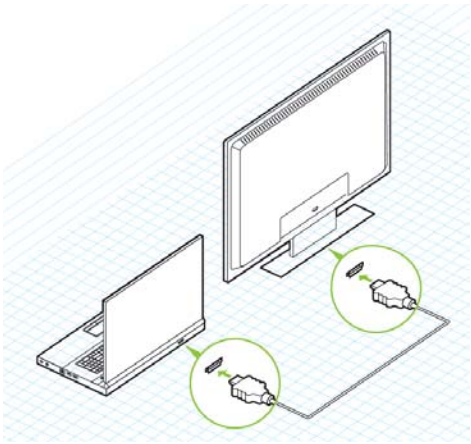
CHAPTER 2.
SETUP AND SOFTWARE INSTALLATION

CONNECT A GEFORCE-BASED PC TO A 3D TV

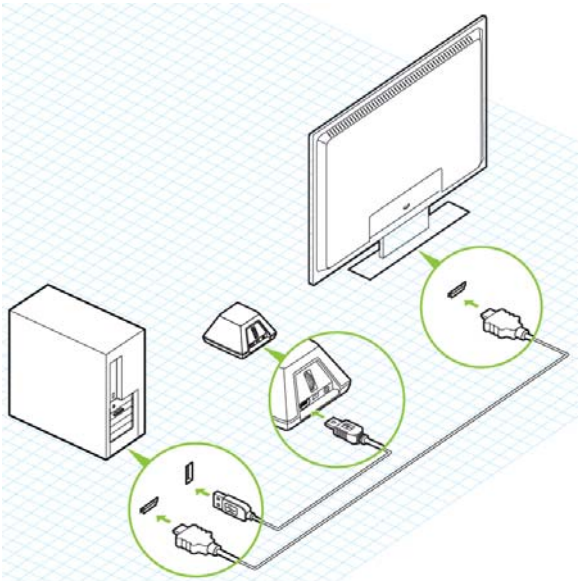
Use the following procedure to connect your system to a 3D TV:

1. Check the video connectors on your GPU and use the correct cables or adapters to connect HDMI video:
   - GPUs with HDMI connector use a standard HDMI cable
   - GPUs with mini HDMI connector use a mini-HDMI to HDMI cable
   - GPUs with DVI connector use a DVI to HDMI adapter cable
2. (Optional) Connect audio as follows:
   - GPUs with HDMI or mini-HDMI connectors, no additional audio cables are needed since audio is carried over the HDMI cables.
   - GPUs with DVI connectors:
     - HDMI audio can be carried over DVI to HDMI cable depending on the graphics card. For newer GPUs, you just need to set the HDMI audio device in the Windows Sound control panel. Older GPUs need to use a digital audio S/PDIF cable to connect from the PC to the graphics boards' on-board S/PDIF connector.
     - If your graphics card does not support HDMI audio over DVI or it does not have an S/PDIF cable built onto the card, you can use the motherboard's digital or analog audio connectors to output audio to the 3D TV or an external receiver. You will also need to disable the HDTV HDMI audio option from the NVIDIA Control Panel after the driver is installed.

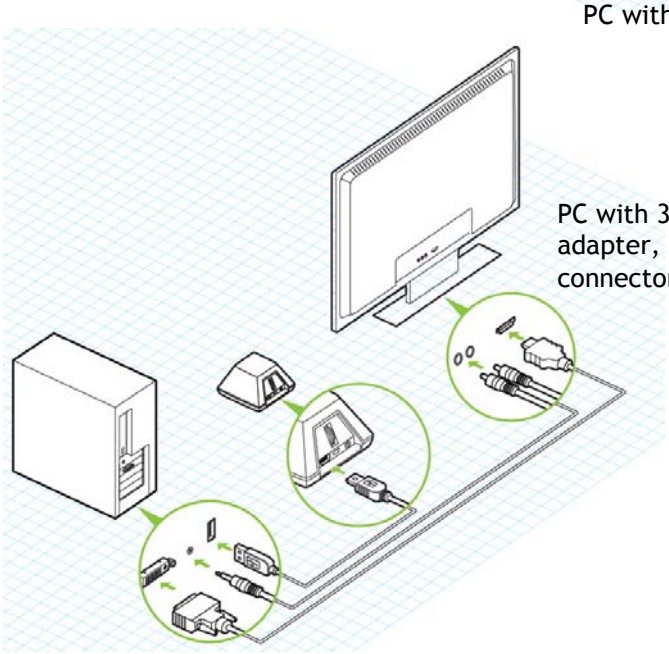
3. Ensure you have the correct drivers that support 3DTV Play.
   - If you have purchased a preconfigured PC with 3D Vision or 3DTV Play installed, you may not need to install new drivers and you can skip Step 5. Check with your manufacturer first to ensure you have the drivers that include 3DTV Play software.
   - If you are using a 3D Vision PC, 3DTV Play is supported in the GeForce Release 260 graphic drivers and 3D Vision Controller Driver available from www.nvidia.com/drivers. Please follow the instructions in Step 5.
4. Confirm your hardware is properly connected Using the diagrams in Figure 1 before you begin any software installation



PC with 3DTV Play pre-installed using HDMI cable



PC with 3D Vision Controller and HDMI cable



PC with 3D Vision Controller, DVI-to-HDMI adapter, and analog RCA 2-channel audio connectors

Figure 1. Hardware Connectivity Diagrams

5. Install the NVIDIA driver on your 3D Vision PC to enable 3DTV Play
   a) Install the GeForce Release 260 drivers. The GeForce Release 260 drivers include the core 3DTV Play driver features such as control panel, setup wizard, and game profiles.
   b) Install the 3D Vision Controller Driver. This driver supports the 3D Vision USB IR emitters and Notebooks with built-in IR emitters. The 3D Vision IR emitter is used to enable 3DTV Play only and does not emit IR codes when 3DTV Play is operating.
      - After installing the 3D Vision controller driver, plug in your 3D Vision USB IR Emitter. If you have a 3D Vision notebook with built-in IR emitter, there is no need to plug in a USB IR emitter.
      - Installing this option will now allow 3DTV Play software to be enabled from the **NVIDIA Control Panel**→**Stereoscopic 3D settings** page
6. Set-up your HDMI 1.4 3D TV.

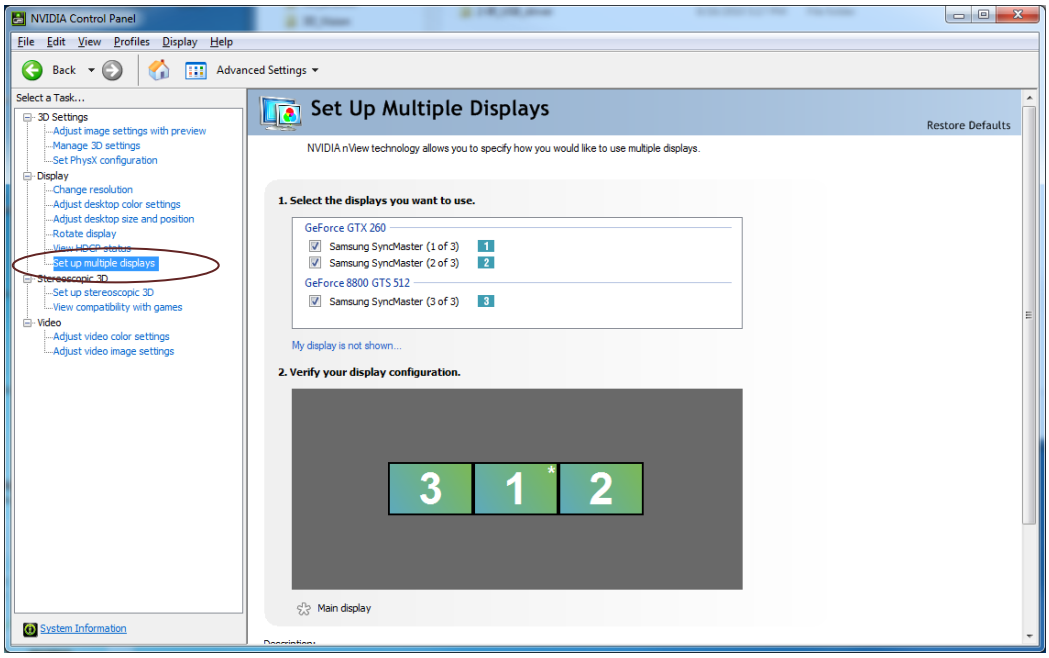
Note: The following set-up example is based upon Panasonic VIERA TC-P50VT25 3D Plasma TV. Every 3D TV has different settings to configure 3D. Please Consult your TV manufacturer's user manual for information on configuring these settings.

- Press the **Menu** button on the remove and browse to the 3D menu settings.
- Under the 3D menu settings, set 3D mode to **Automatic**
- Set the eye order (for the glasses) to **Default** or **Normal**. Once that has been configured, do not change this when using NVIDIA 3DTV Play as the NVIDIA driver will control the glasses.
- If you are viewing your Windows desktop and the start menu or taskbar cannot be seen, you can use many of the new 3D TVs built-in option to fix the display size and allow the desktop to be seen. As an example, Panasonic 3D TVs have a setting under **Picture options** called **Aspect adjustments** which will allow you to see your Windows desktop.

7. Ensure the 3D TV is assigned as the *primary* display.

> **Note:** If you are using a notebook or multiple monitors 3D TV will typically be set as the secondary display.

a) Browse to the **NVIDIA Control Panel→Set up multiple displays**



b) Right mouse click on the **3D TV** under Step 2. Verify your display configuration and select **Make this the Windows primary display**

8. Enable 3DTV Play

a) Go to **NVIDIA Control Panel→Stereoscopic 3D**.

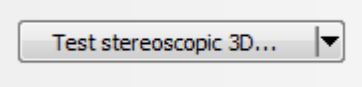
b) Select **Set up Stereoscopic 3D**.

c) Click the checkbox **Enable Stereoscopic 3D**. The 3DTV Play Setup Wizard begins.

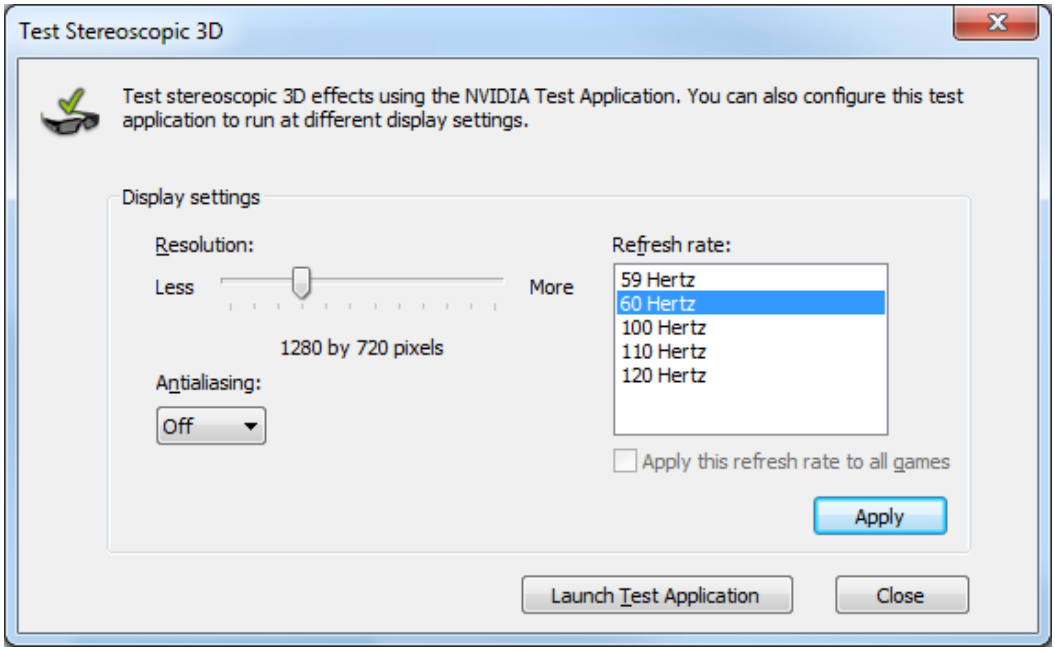
d) Check to ensure that the 3DTV Play logo displays in the control panel as the Stereoscopic 3D display type.

> **Note:** When in HD 3D mode, you may notice decreased performance when running your games even without 3DTV Play enabled. In this mode, 3DTV Play is still running and rendering both frames for your 3D games. To maximize performance when not using 3DTV Play, switch to a HD or SD mode

9. Ensure that 3DTV Play is working properly when the Wizard completes:
   a) Go to **NVIDIA Control Panel→Stereoscopic 3D→Set up Stereoscopic 3D**.
   b) Select **Test stereoscopic 3D**…



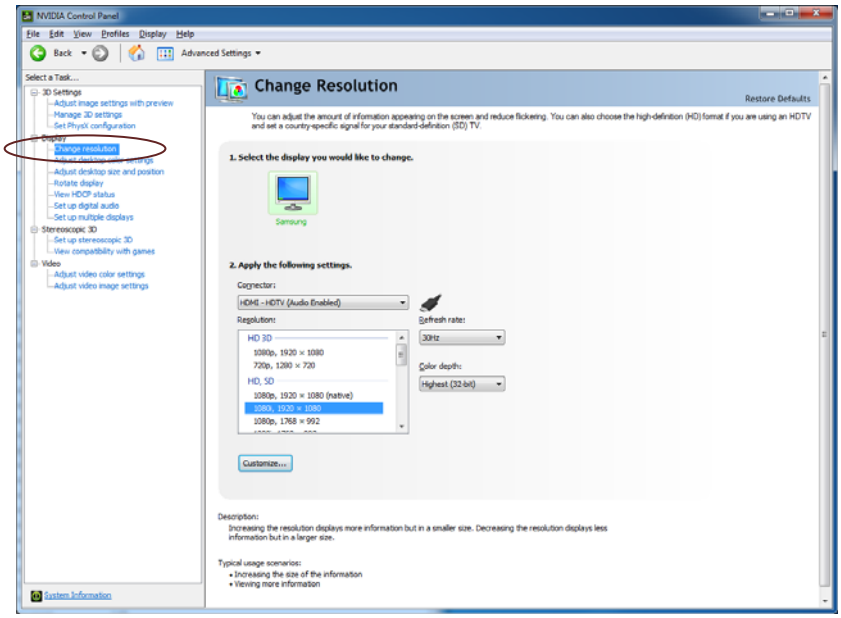
   c) Select resolution **1280x720** with a refresh rate of **60 Hz.**



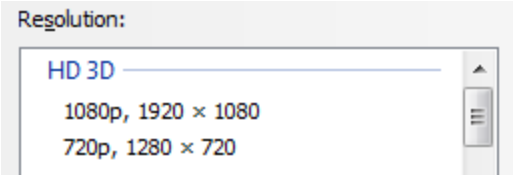
10. Select **Launch Test Application** button.
    The NVIDIA 3D test application will now launch showing you a real-time 3D application.

11. After you have enabled 3DTV Play, you may have to change your Windows Desktop resolution for your content. Use the following the instructions to change your desktop.

    a) Go to **NVIDIA Control Panel** and select **Change resolution** from the left hand menu.



    b) Under the **Resolution** section, there is a new section called **HD 3D**. Select the best HDMI 1.4 resolution and refresh rate.



- **For Blu-ray 3D:** Change the Windows resolution to the HD 3D mode **1080p, 1920x1080** with a refresh rate of **24 Hz**. If you do not set this mode and start watching a Blu-ray 3D, the software player application will not be in 3D mode. Future Blu-ray 3D software player applications will automatically switch into an HDMI 1.4 3D mode.
- **For 3D Gaming:** You do not need change the Windows Desktop Resolution to an HD 3D mode. Instead, you simply select the resolution 1280x720 and 60 Hz refresh rate from inside the game's video settings menu to switch to 3D mode. However, if you are using a game that uses the Windows desktop resolution when running the game, it is recommended you select HD 3D mode 720p, 1280x720 with a refresh rate of 60 Hz or 50 Hz. As a general rule, if you are in a country that uses PAL timing with 50 Hz or 100 Hz monitors, 50 Hz refresh

rate. If you are in North America or countries that use NSTC timings with 60 Hz or 120 Hz, select 60 Hz refresh rate.

- **For 3D movie file playback**: You must set the Windows resolution to any HD 3D mode. However, it is recommended to select a mode that matches the frames-per-second of your video content.
- **For 3D photograph viewing**: You must set the Windows resolution to any HD 3D mode. However, it is recommended to select a higher resolution mode so you can view your pictures at the highest resolution possible.

12. (Optional) Confirm HDMI audio is working on the TV speakers.
    To test HDMI audio, start playing any movie, game, or music content and change the volume on the TV speakers

You are now ready to use 3DTV Play software. The next chapter will give you information on selecting the correct modes for your content.

CHAPTER 3.
USING NVIDIA 3DTV PLAY

With 3DTV Play installed, you can now enjoy rich 3D content on your PC. 3DTV Play supports the following 3D content:

- Play over 425 standard PC games in 3D.
- Browse 3D photographs on your 3D TV or view them in a slideshow with the included NVIDIA 3D Photo viewing software.
- Watch Blu-ray 3D movies in stunning 1080p 3D.
- View 3D movie files played directly from your hard drive.

3D GAMES

NVIDIA 3DTV Play supports the same games as NVIDIA 3D Vision. If you see a game with the logo "NVIDIA 3D Vision-Ready," it will work on NVIDIA 3DTV Play as well. Visit the following website for a full list of supported games: http://www.nvidia.com/object/3D_Vision_3D_Games.html.

Playing Games in 3D

1. Launch your game in fullscreen mode.

   3D TVs only support one resolution for 3D gaming: 1280x720. When you start the game, you may notice a red message at the bottom of the game that indicates that your current game is not running in a compatible HDMI 1.4 3D mode. This message is normal since many games launch with an initial in-game resolution that is not 1280x720. For example, if your game starts at 1600x900 at 60 Hz, the 3D TV does not support operating 3D in that mode and you will see a message that says **Current mode 1600x900@60 is not HDMI 1.4 3D compatible.**

2. Select the in-game resolution **1280x720.** This is the HD 3D mode of **720p, 1280x720**.

   Once you are running in this resolution, the red text is no longer displayed and you can now play your games in 3D.

Customizing 3D Games

When you are playing your games in 3D, the game is being rendered in real-time on your NVIDIA GeForce GPU. Because of the processing power of the GPU, you have advanced control over how 3D looks, letting you increase or decrease 3D depth in real-time, making your games look amazing. Table 2 lists the keyboard shortcuts that are available to users:

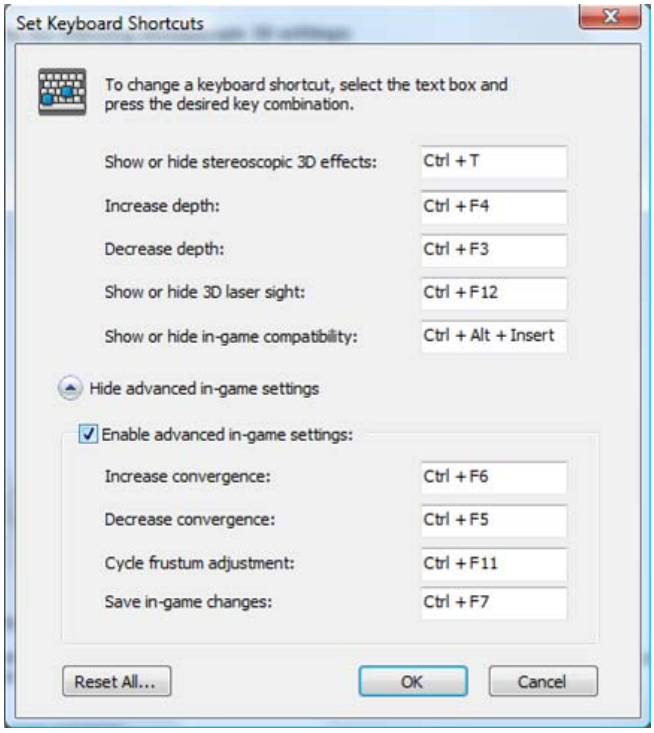
Table 2. 3D Keyboard Shortcuts

Keys	Descriptions	Actions
CTRL-F4	Increase 3D Depth	Increases the depth amount realtime in the current game.
CTRL-F3	Decrease 3D Depth	Decreases the depth amount realtime in the current game.
CTRL-T	Show/Hide Stereoscopic 3D	Turns 3DTV Play off and on. The 3D TV will appear in 2D mode and the glasses will no longer be needed. Note while 3DTV Play and the 3D TV appear to not be working in 3D mode, you will notice decreased performance when running your games as NVIDIA 3DTV Play is still running and rendering both frames for your 3D games. To maximize performance when not using 3DTV Play, switch to a HD or SD mode
ALT-F1	Captures 3D game screenshot	This captures a 3D screenshot of your game and places it in the c:\Users\[username]\My Documents\NVStereoscopic3D.IMG directory. The files will be stored as stereoscopic JPEG files with the file extensions .JPS. These files can be viewed with the NVIDIA 3D Photo Viewer.
CTRL-ALT-Insert	Show/Hide in-game compatibility message	Displays the settings recommended by NVIDIA for the current game in the lower right hand corner of your display
CTRL-F6	Increase convergence	Moves objects towards you. Maximum convergence places all objects in front of the scene, in user space. Used to place the laser sight. (Advanced)
CTRL-F5	Decrease convergence	Moves objects away from you. Minimum convergence places all objects “behind” the scene, in user space. Used to place the laser sight. (Advanced)

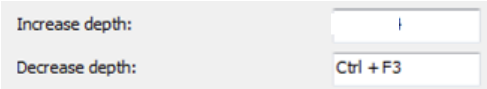
Setting Your Own Shortcut Keys

To configure a game in real-time you must be familiar with the keyboard shortcut keys (Table 1, page15). You can use the default setting or you can change the shortcut keys to suit your particular liking. To change the default settings of the keyboard shortcut keys, do the following:

1. Go to **NVIDIA Control Panel→Setup stereoscopic 3D.**
2. Select **Set keyboard shortcuts.**
   The following screen displays.



3. Select an action and click in the adjacent box displaying the shortcut.



4. Press the desired key combination.
   The keystrokes are displayed in the box.
5. Click **OK** to save your settings and exit the menu.
   The driver saves the settings in the registry.

3D PHOTOGRAPHS

The 3DTV Play lets you view immersive 3D pictures on your 3D TV with the built-in NVIDIA Photo viewer. The photo viewer is automatically installed with 3DTV Play software and supports viewing stereoscopic 3D photograph files; including those taken with the Fujifilm FinePix REAL D W1 and W3 point-and-shoot camera. You can also edit the 3D effects to display customized 3D pop-up experience.

For more information on using the photo viewer or to download 3D photos, go to: http://www.nvidia.com/object/3d-vision-3d-pictures.html

BLU-RAY 3D

Want to experience 3D movies at home? Bring the 3D movie experience to your 3D PC and watch the latest Blu-ray 3D movies in the comfort of your home and enjoy 3D movies at full 1080p resolution with 3DTV Play software.

NVIDIA GeForce GPUs include a powerful, dedicated video processor that offloads complex video tasks from the computer CPU to enable a premium movie experience. Lower CPU utilization can result in reduced power consumption, heat and noise, and a longer battery life for notebook users.

For more information on using Blu-ray 3D, go to: http://www.nvidia.com/object/3d-vision-3d-blu-ray.html.

Supported Blu-ray 3D Software

The following players have been tested to work with 3DTV Play

- Cyberlink PowerDVD 9 and 10 Mark II
- Arcsoft TotalMedia Theater 3 and 4
- Sonic CinePlayer
- Corel WinDVD 10

Viewing Blu-ray 3D

When viewing a Blu-ray 3D movie, set the Windows desktop resolution to the **HD 3D** mode **1080p, 1920x1080** and **24 Hz** refresh rate. See Step 10 on page 10 to change the Windows resolution.

3D MOVIE FILE PLAYBACK

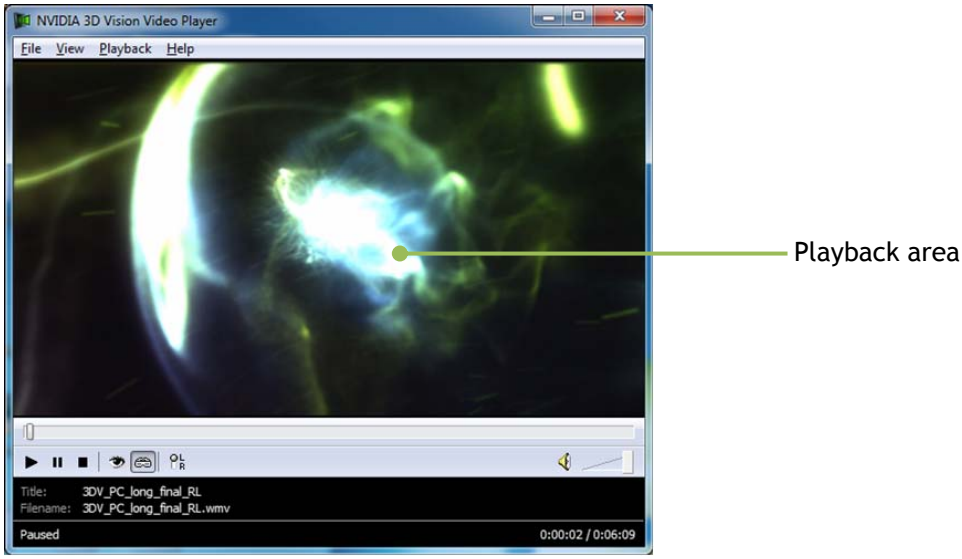
NVIDIA 3DTV Play software allows you to view immersive, 3D videos on your PC using the NVIDIA 3D Video player software. This software is available to download from http://www.nvidia.com/drivers

NVIDIA recommends downloading and using content from our website at http://www.nvidia.com/object/3d-vision-3d-movies.html

When viewing 3D movies, set the Windows desktop resolution to any supported HD 3D mode. However, it is recommended that you select a mode that matches the frames-per-second of your video content. For instance, if you have a 24 fps video, you should select the **HD 3D** mode **1080p, 1920x1080** and **24 Hz** refresh rate. See Step 10 on page 10 to change resolution.

Viewing 3D Movie Files

1. Download the movie to a temporary location on your hard disk.
2. Launch the 3D Vision Video Player.
3. Select **File→Open File** and select your file you saved.
4. Double click inside the video playback area to switch to fullscreen 3D mode.



Note: If you use other players such as the 3dtv Stereoscopic Player to watch 3D movies, you must switch the mode from any other rendering type (such as side/side) into NVIDIA 3D Vision mode. If you leave it in side/side mode, NVIDIA 3DTV Play software will not work.

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