GeForce FX 5900 XT Series

VGA Card

User's Guide

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FCC Compliance Statement

This equipment has been tested and found to comply with limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in residential installations. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television equipment reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Move the equipment away from the receiver.
- Plug the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for additional suggestions.

Only equipment certified to comply with Class B should be attached to this equipment, and must have shielded interface cables. You are cautioned that any change or modifications to the equipment not expressly approved by the party responsible for compliance could void your authority to operate such equipment. This device complies with Part 15 of the FCC rule. Operation is subjected to the following two conditions:

1) This device may not cause harmful interference.

2) This device must accept any interference received, including interference that may cause undesired operation.

Nov 2003
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Chapter 1 Introduction

Product Specifications

Interface

AGP 4x/8x and AGP texturing support

Chipset

NVIDIA GeForce FX5900 XT Series

Memory Interface

Supports 128 MB DDR SDRAM

Features

- 256-bit advanced memory interface
- 256-bit graphics architecture
- 400 MHz internal RAMDAC
- 22.4 GB/sec memory bandwidth
- 8 pixels per clock rendering engine
- 16 texels per pixel with 8 textures applied per clock
- NVIDIA CineFX 2.0 Engine
- Advanced Display Pipeline with full nView Capabilities
- High-performance, high-precision 3D rendering engine
- High-Performance 2D rendering engine
- UltraShadow technology
- Intellisample HCT Performance Technology
- Digital Vibrance Control (DVC) 3.0
- NVIDIA nView multi-display technology
- Unified Driver Architecture (UDA)

High quality video playback

- Dual, 400MHz RAMDACs for display resolutions up to and including 2048x1536 @ 85Hz
- Integrated NTSC/PAL TV encoder support resolutions up to 1024x768 without the need for panning with built-in Macrovision copy protection
- DVD and HDTV-ready MPEG-2 decoding up to 1920x1080i resolutions
- Support for dual-link DVI for compatibility with next-generation flat panel displays with resolutions greater than 1600x1200 without the need for reduced blanking

Full Software Support

- Microsoft DirectX optimizations and support
- Full OpenGL 1.4 and lower support
- Complete support DirectX 9.0 and lower
- WHQL-certified Windows 2000 / XP (for Windows 9x / ME versions please visit NVIDIA's website for the latest update on drivers)

Others

- TV-out
- DVI-I (Optional)
- VIVO (Optional)

Package Contents

1. GeForce FX5900 XT Series VGA card
2. User's Guide
3. Driver Pack
   - Windows 2000/XP drivers (for Windows 9x / ME versions please visit NVIDIA's website or see later update on drivers)
   - 3Deep (Optional)
   - WinDVD 6 Channel
   - WinDVD Creator
   - WinRip
4. WinProducer 3.0 (Optional)
5. MDK2
6. Game Pack (5 in 1)
   - Age of Wonders2
   - Serious Sam2
   - Rally Trophy
   - Max Panye
   - Tropico
7. S-Video to S-Video cable
8. S-Video to AV cable (Optional)
9. DVI – I to VGA Adapter
10. Composite Cable (Optional)
11. VIVO cable (Optional)

System Requirements
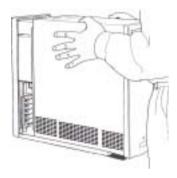
Computer System

- Intel Pentium® II or newer compatible CPU (Intel Pentium® III or AMD Athlon® or newer CPU's recommended)
- VGA/Super VGA monitor, supporting minimum 640x480 resolution.
- 64MB RAM or higher.
- 15MB HDD space.
- CD-ROM or DVD-ROM Driver.
- DirectX 9.0 and lower.
- Windows 2000 / XP operation system (for Windows 9x / ME versions please visit NVIDIA's website or see later update on drivers)
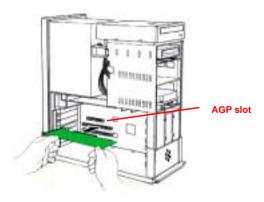
Chapter 2 Hardware Setup

Installing the Hardware

1. **Turn off** the computer's **power** and make sure the system is properly grounded (leave the power cord connected). Then disconnect the monitor signal cable.
2. Remove the computer chassis cover. Be sure to discharge your body's static electricity by touching the metal area of the computer each time before touching both the old and new VGA cards.

3. Remove the old card, if it exists.
4. Grasp the edge or bracket of the card, align your card with an empty AGP expansion slot and slide it into place.
5. Replace the screw to fasten the card onto the chassis, and replace the computer chassis cover.
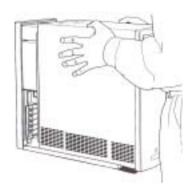6. Plug the monitor cable into your card, and then turn on the computer and the monitor.

AGP slot

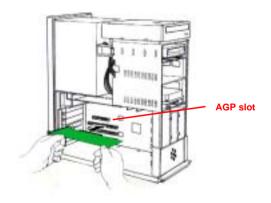1.
2.

3.
4.   AGP
5.

6.

AGP slot

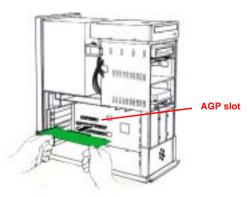## Installation du matériel

1. **Eteignez** votre ordinateur et **déconnecté** votre écran**.**

2. Enlevez le couvercle ou les panneaux de côté de votre ordinateur (consultez le manuel d'instructions de votre ordinateur pour les instructions de montage et de démontage).

3. Enlevez la carte graphique AGP présente -o u – enlevez la languette de métal qui recouvre l'emplacement du connecteur AGP.

4. Alignez le côté de votre carte où se trouvent les connecteurs avec l'emplacement du connecteur AGP et appuyez fermement jusqu'à ce qu'elle soit complètement mise ne place (ne SURTOUT PAS forcer la carte dans son emplacement – appliquez une poussée uniforme de chaque côté de la carte).

5. Visez la carte au châssis, et remonté le couvercle du boîtier.

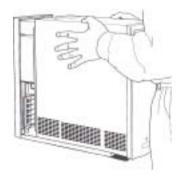6. Branchez le cordon VGA à la carte graphique et reconnectez votre moniteur ainsi que le reste des câbles.

AGP slot

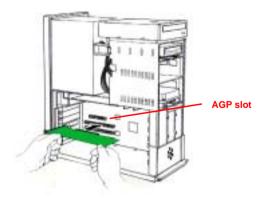## 하드웨어 설치

1. 먼저 컴퓨터의 전원을 차단하고 전원이 완전히 차단되었는지 확인한 후에 모니터 시그널 케이블을 분리해 주십시오.

2. 컴퓨터 케이스의 덮개를 열고 VGA 카드를 장착하기에 앞서 컴퓨터를 전자기로부터 보호하기 위해 전자기로부터 안전한 복장 및 도구를 착용하거나 이용해 주십시오.

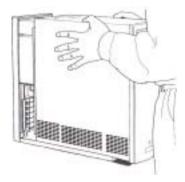3. 만약 구형카드가 시스템에 장착되어 있다면 먼저 구형카드를 시스템에서 분리해 주십시오.

4. 케이스 뒷면 브라켓 장착 부분과 PCI 확장 슬롯에 수직이 되도록 하여 카드를 조심스럽게 PCI 확장 슬롯에 장착해 주십시오.

5. VGA 카드를 장착한 후 컴퓨터 케이스 덮개를 씌워 주십시오.
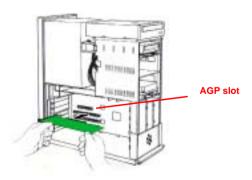
6. VGA 카드에 모니터 케이블을 연결한 후 컴퓨터 본체와 모니터의 전원을 켜주십시오.

AGP slot

Installation der Hardware

1. **Schalten Sie** den Computer **aus,** und stellen Sie sicher, dass das Gerät richtig **geerdet** ist **(lassen Sie das Netzkabel sowohl am PC als auch an der Netzsteckdose angeschlossen).** Trennen Sie jetzt das Signalkabel des Monitors vom VGA-Anschluß.
2. Entfernen Sie die Abdeckung des PC-Gehäuses. Stellen Sie sicher, dass Sie sich jedes mal durch Berührung des Metallgehäuses von statischer Elektrizität befreien, bevor Sie die alte oder neue VGA-Karte anfassen!

3. Remove the old card, if it exists.
4. Grasp the edge or bracket of the card, align your card with an empty AGP expansion slot and slide it into place.
5. Replace the screw to fasten the card onto the chassis, and replace the computer chassis cover.
6. Plug the monitor cable into your card, and then turn on the computer and the monitor.

AGP slot

Chapter 3 Driver Setup

Introduction

This chapter explains how to install AGP VGA card drivers using the VGA Driver Setup tool that is included in the CD-ROM that came with your AGP VGA card.

DirectX 9.0

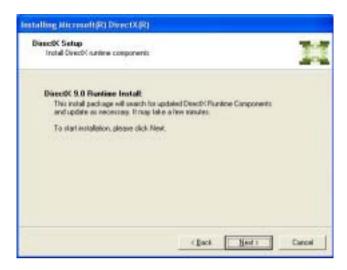1. If an older version of DirectX has been installed in the system, please click on [**DIRECTX 9.0**] to upgrade to the latest version.

2. After reading the license agreement, please click [**Next >**] to continue.

3.   Please click [**Next >**] to continue.

4.   Please click **[Finish]** to complete the setup process.

Display Drivers Setup

For Driver setup in Win98se/ME/2000/XP mode, please follow the steps below.

1.   Insert VGA Driver Package CD into CD-ROM driver.
2.   Click on [**Display Drivers**] to begin driver installations.

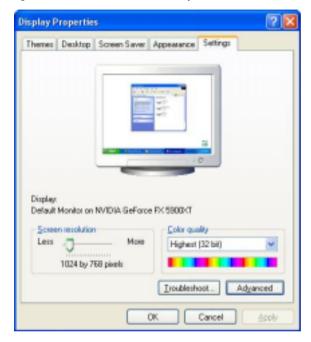3.   Please click [**Next >**] to continue.

4. Please select [**Yes**] to restart computer now or [**No**] for restart later, then click [**Finish**] to complete the installation.

Chapter 4 Display properties

In order to open **Display Properties** window, select from [**Start**] -> [**Settings**] -> [**Control Panel**] ->[**Display Properties**]. Otherwise, you may simply right-click the blank Windows® desktop area and choose [**Properties**] in the pop-up menu. The **Display Properties** window below will show on your screen:

Please click the [**Advanced**] button to enter the advanced setup for your display card.

Choose [**GeForce FX5900XT**] series tab in the pop-up menu to access further settings on VGA card feature.

nView Display Setup

In order to open **Display Properties** window, select from [**Start**] ->[**Settings**] ->
[**Control Panel**] -> [**Display Properties**] to open the submenu. From [**Display Properties**] -> [**Settings**] -> [**Advanced**] -> [**GeForce FX5900XT**] tab we can select the various functions of this VGA card.

Please click on **nView Display Mode** to enter its submenu that allows you to setup the various nView options.

1) nView Modes

a) Single display

Selects the standard, single display mode. Use this mode if you have only one display device attached to your NVIDIA graphics adapter.

b) Clone

This mode outputs an exact copy of the primary display on the secondary device.

c) Horizontal Span

This mode allows you to extend the Windows desktop across two display devices horizontally. In this mode the two displays combine to form a wide, spanned display surface, which is useful when viewing items that are wider than a single display.

d) Vertical Span

This mode allows you to extend the Windows desktop across two display devices vertically. In this mode the two displays combine to form a tall, spanned display surface, which is useful when viewing items that are larger than a single display.

2) Current Display

If more than one device is connected and you have switched to a mode other than the Standard one, you can select the current display of your choice.

You can also click on the monitor image directly above the display control to select it as the current display.

Notes:

    nView Display Devices select:

First Display	→	*D-Sub Connector*
Second Display	→	*DVI-I Connector*
Third Display	→	*TV-out*

3) Make this the primary display

Use this option to select which display contains the top left corner of the desktop. The most obvious effect of this option is that it swaps the positions of the monitor images.

4) Disable auto-panning on secondary device (viewport lock)

Turning on this feature locks the current pan position on the secondary clone display. This lets you effectively freeze the virtual desktop at a certain position, which is useful for presentations or fine-detailed work in applications.
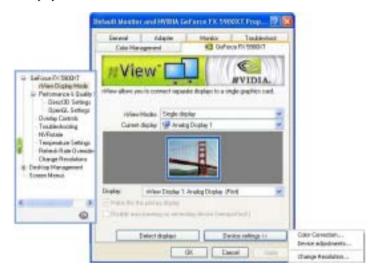
5) Detect Displays

Click to detect all displays connected to this video adapter. Use this feature if you have plugged in any displays after the control panel was opened.
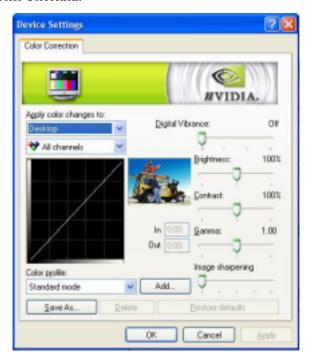
6) Device Setting >>

Click this button to set up or change settings related to the output device used for the current display.

a) Color Correction:

The slider control allows you to adjust the brightness, contrast or gamma values for the selected color channel.

The color correction controls help you to compensate for variations in luminance between a source image and its output on a display device. When you are working with image processing applications, this helps provide more accurate color reproduction of images (such as photographs) that are displayed on your monitor.

Also, many 3D-accelerated games may appear too dark to play. Increasing the brightness and/or the gamma value equally across all channels makes these games appear brighter and more playable.

b) Device Adjustments

i) Screen Adjustment

This will access the Screen Adjustment panel as below.

This allows you to adjust the center of your screen, to adjust the screen position, move the mouse over the monitor image and drag the desktop to the desired position while holding down the primary mouse button. Use the arrow positioning buttons for fine adjustments. You can also click the [**Default**] button to return to its original state. Click [**OK**] when you finish adjusting the screen.
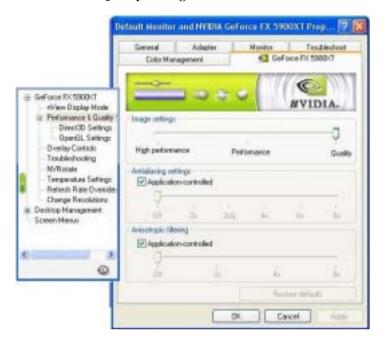
ii) Display Timing

This option allows users to select the various timing mode for the monitor. Click [**Restore Defaults**] to restore the default timing mode of the monitor.

Performance and Quality Settings

1) Performance

Drag the slider to select the performance setting (as described below) for quality enhancements in Direct3D and OpenGL applications.

2) Antialiasing

Antialiasing is a technique used to minimize the "stairstep" effect sometimes seen along the edges of 3D objects. This option automatically enables the optimal antialiasing settings for those 3D applications that support antialiasing.

3) Anisotropic Filtering

Availability of options described below may depend on the NVIDIA GPU you are using.Use this slider by dragging it to set the degree of anisotropic filtering for improved image quality. Enabling this option improves image quality at the cost of performance.

4) Texture Sharpening

To improve image quality, select this option to sharpen textures when running 3D applications with antialiasing enabled.

Direct 3D Settings

This tab allows you to adjust the values of **Performance and Compatibility, Mipmapping** and **PCI Texture Memory Size** for 3D games.

1) **Performance and Compatibility Options**

   This option contains items that allow you to set up the options influencing the performance and compatibility in 3D games.

2) **Mipmap Detail Level**

   This option allows you to set up the mipmap level for a higher performance or better image effects.

3) **PCI Texture Memory Size**

   This option allows you to adjust the size of the PCI texture memory. For some applications using the Direct3D technology, typing a higher value in this spin box may significantly increase the performance. However, this option does not work on display adapter using an AGP bus.

4) **Custom Direct3D Settings:**

   This option allows you to save your settings for future reference.

OpenGL Settings

This tab allows you to adjust the **Performance and Compatibility Options** for your OpenGL application.

1) **Performance and Compatibility Options**

   This feature allows you to set up the various options influencing the performance and compatibility in your OpenGL applications.

2) **Default Color Depth for Textures**

   This option determines the default textures of a specific color depth in OpenGL applications.

3) **Buffer Flipping Mode**

   When running the OpenGL application under Full-Screen mode, turning on the page- flipping function may significantly increase the performance.

4) **Vertical Sync**

   This option allows you to choose the type of vertical sync.
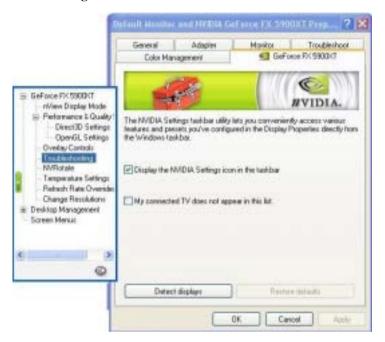
Overlay Controls

Use these controls to adjust the quality of video or DVD playback on your monitor.
You can independently control the **Brightnes**s, **Contrast**, **Hue** and **Saturation** to achieve optimal image quality during video or DVD movie playback on your computer.

Zoom control: Let you zoom in on or out of the selected portion of the video playback screen.

TroubleShooting

1) Display the Media Center icon in the taskbar:

Adds the NVIDIA Media icon to the Windows taskbar by checking the appropriate box on the screen. The icon allows you to apply any of the custom Direct3D, OpenGL or color settings **on the fly** from a convenient pop-up menu. The menu also contains items for restoring default settings and accessing the Display Properties dialog box.

2) Detect Display

Click this button to allow detection of any new displays added for the nView Display Mode.

3) Restore Defaults

Click [**Restore defaults**] to restore the default timing mode of the monitor.

NVRotate

The NVRotate feature lets you view your Windows desktop in **Landscape** or **Portrait** mode. You can rotate desktop by 90, 180 or 270 degrees.

1) Landscape (0 degree rotation)

This is the default setting that will leave the screen in its original state.

2) Portrait (90 degree rotation)

This will rotate the display screen 90 degrees to the right.

3) Inverted Landscape (180 degree rotation)

This will rotate the display screen 180 degrees upside down.

4) Portrait (90 degree rotation)

This will rotate the display screen 270 degrees (i.e. 90 degrees to the left).

Temperature Setting (For specific products only)

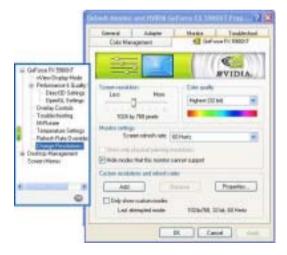This gives an indication of the current status of the GPU temperature setting.

Refresh Rate Override

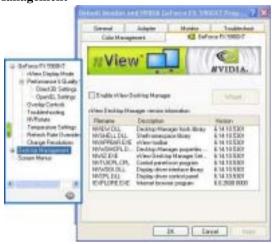This tab allows you to select **Refresh Rate Override** to be used in Direct3D applications.

Change Resolutions

This option gives the details of the screen resolution and allows users to change screen resolution, color quality and refresh rates for the monitor. In **Custom Resolutions and Refresh Rates**, users can customize their own resolutions and refresh rates by clicking [**Add**] or [**Remove**] button. When checking the [**Only show custom modes**] box only custom modes are shown.

Desktop Management

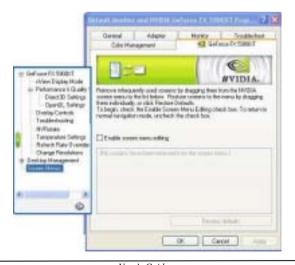#### Enables the NVIDIA Desktop Manager:

The NVIDIA Desktop Manager enables additional functions such as hot keys for window management, re-centering of dialog boxes, and zooming in when nView's multi-monitor configurations are in use. The Desktop Manager also adds support for multiple desktops to help you better organize your application workspace.

Screen Menus

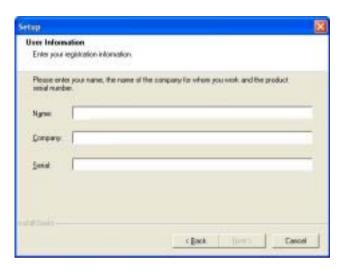This gives an indication of the current status of the GPU temperature setting.

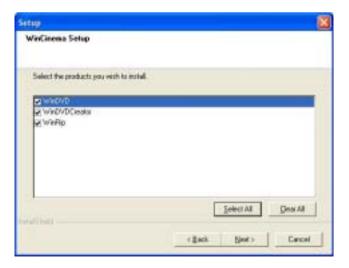# Appendix

WinCinema

1. Enter personal information on boxes below to register the product.

2. Choose [**Select All**] to select all the products, in this case **WINDVD**, **WinDVDCreator** and **WINRIP**, and [**Clear All**] to deselect them. Click [**Next >**] to proceed.
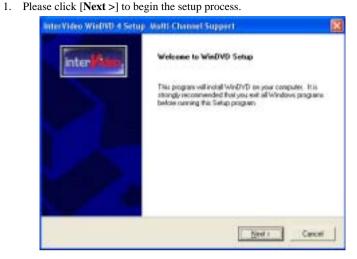
1) WinDVD

It is a simple-to-use software DVD player combining all the features of a standard consumer DVD player with some very advanced functionality only possible on a software DVD player.
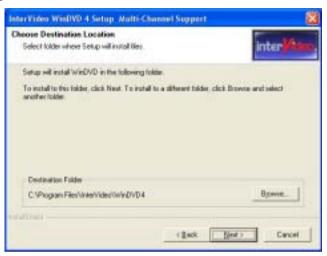

InterVideo(R) WinDVD(R) 4
(c) 1999, InterVideo, Inc. All Rights Reserved.

1. Please click [**Next >**] to begin the setup process.

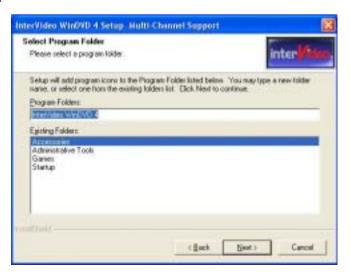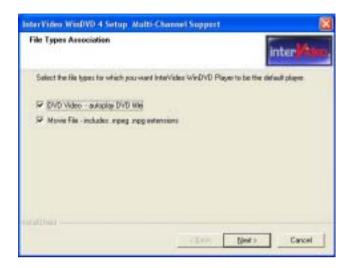2. After reading the license agreement, please click [**Yes**] to continue.

3. Please select a folder where the program will be installed and click [**Next >**] to proceed.

4. Please select one folder name from existing folders list and click [**Next >**] to proceed.

5. Please select the default player by checking the specific boxes and click [**Next>**] to proceed.

6. Click on [**Finish**] to complete the installation process.

2) WinDVD Creator Setup

WinDVD Creator's storyboard interface makes the entire DVD-making process as easy as moving pictures around on your screen.

There are four Easy Steps to make your DVD**:** Capture, Edit, Author & Make Movie.

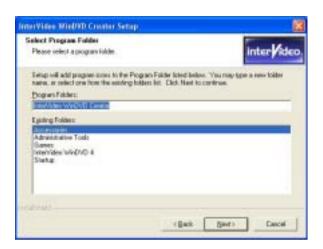1. Please click [**Next >**] to begin the setup process.

2. After reading the license agreement, please click [**Yes**] to continue.

3. Please select a folder where the program will be installed and click [**Next >**] to proceed.

4. Please select one folder name from existing list of folders and click [**Next >**] to proceed.

5. Please check the box to install the required third party product and click [**Next >**] to proceed.
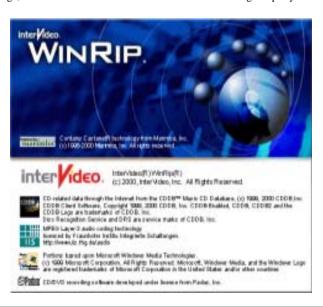
6. Click on [**Finish**] to complete the installation process.

3) WinRip 2.1 Setup

WinRip lets you record, store, organize, and enjoy you music collection - on your PC, CD player, and portable player. WinRip's IDI technology adds synchronized lyrics to your songs, then use the Karaoke and other DSP effects for a great party.

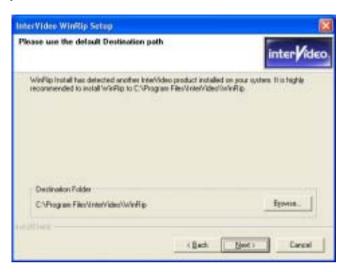1. Please click [**Next >**] to begin the setup process.

2. After reading the license agreement, please click [**Yes**] to continue.

3. Please select a folder where the program will be installed and click [**Next >**] to proceed.

4. Please select one folder name from existing list of folders and click [**Next >**] to proceed.

5. Click on [**Start >**] to begin WinRip Configuration Wizard.

6. Choose [**Select All**] to select all file extension types for WinRip and click [**Next >**] to continue.

7. Click on [**Next >**] to continue.

8. Select the type of recording format and click [**Next >**] to continue.

9. Click on [**Finish**] to complete the configuration process.

10. Click on [**Finish**] to complete the setup.

3Deep E-color (Optional)

3Deep ensures that your monitor displays 3D games with accurate lighting and shading exactly the way the creator intended. 3Deep delivers the precise imagery that the developer spent months working to achieve.

1. Please click [**Next >**] to continue.

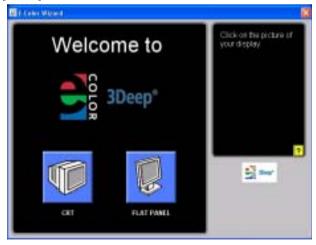2. After reading the license agreement, please click [**Yes**] to continue.

3. Please click [**Next >**] to continue.

4. Please click [**OK**] to allow the 3Deep E-color to tune up your display.
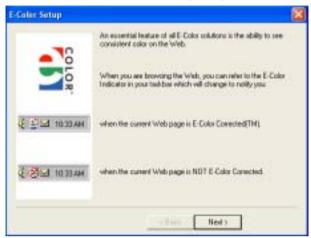

5. Choose your screen to be either **CRT** or **FLAT PANEL** and then press [**Next >**] to continue.

Please follow the setup procedure below to tune up your Display.

6. Please click [**Next >**] to continue installing 3Deep E-color.

7. Please check the box for the required files and then click [**Next >**] to end the installation process.

We recommend that you Tune-Up your monitor every three to six months.

Tuning Up Instruction

Double-click on the E-Color icon in your system tray and then click on the 'Tune-Up' tab.

1. Click on the 'Tune-up' button.
2. Complete the quick and easy E-Color Wizard, and then connect to the Internet.
3. When connected, 3Deep will complete the process enabling you to see E-Color Corrected images.

For Your Best Result

1. Let your monitor warm up for at least 30 minutes before beginning the E-Color Wizard (TM). This process allows the colors to stabilize.
2. If you have a third-party monitor calibration system installed (e.g., EFIcolor, AGFA FotoTune, or another), use either that system or 3Deep. Do not use both calibration systems. Using both systems will mis-calibrate the monitor. Search 3Deep Help for instructions for your application.
3. If your monitor has some type of color adjustment controls, adjust them to your liking first, before running 3Deep.
4. If your monitor has a degauss button press it before running the E-Color Wizard. If you don't have one, then your monitor has an automatic degauss cycle that works when you turn your monitor off and then on again, even if there is no outward indication of it.

Note:

See the Readme.txt file in the CD-ROM's root directory for installation instructions of this software.

*3Deep V3 **does not** operate properly in **256 color** mode on Microsoft® Windows® NT4 or 2000 systems. Please use a higher color Depth (16-bit or higher).*

WinProducer3 (Optional)

1. Please click [**Next >**] to continue installing WinProducer3.

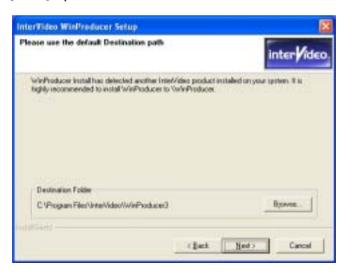2. Please click [**Yes**] to continue installing WinProducer3.

3. Enter personal information on spaces below to register the product.

4. Please select a folder where the program will be installed and click on [**Next >**] to proceed.

5. Please select one folder from existing list of folders and click on [**Next >**] to proceed.

6. Please click [**Next >**] to continue installing WinProducer 3.

7. Please click [**Finish**] to complete the WinProducer 3 installation program.

WinProducer 3 CD, or WinProducer 3 DVD These InterVideo applications let you combine your personal video, digital images, and audio into exciting, professional-quality movies. Whether you are editing your first movie or looking for a program that will let you take your productions to the next level, your WinProducer application's straightforward drag-and-drop editing style combined

with its comprehensive editing capabilities will meet your needs today and tomorrow.

With your WinProducer application, you can:

- Record and capture video, image, and audio content for your movie.

- Import video, image, and audio files in a wide variety of popular formats including: MPEG1, MPEG2, AVI, BMP, GIF, JPEG, MP3, and WAV.

- Use simple drag-and-drop operations to turn the clips into a compelling movie.

- Enhance you movie with professional-quality special effects.

- Perform DVD-authoring tasks. (only WinProducer3 CD and WinProducer 2 DVD support this feature.)

Save your finished movie in a variety of formats. As the following table indicates, the format you can use to save your movie depends on which WinProducer product you are using.

Application	Format			
	MPEG or AVI File	CD-RW	DVD Rewritable	DV Camera
WinProducer 3	●			●
WinProducer 3 CD	●	●		●
WinProducer 3 DVD	●	●	●	●

For further details on confirmations and operation instructions, please refer to the Help topics under the Help tool bar.

NOTE