/ISUS®

V9280 Series

Graphics Card

V9280 Video Suite
V9280S TVD
V9280 TD

USER'S MANUAL
Hardware & Video Drivers

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Product Name:	**ASUS V9280 Series**
Manual Revision:	**1.00 E1159**
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FCC & DOC COMPLIANCE

Federal Communications Commission Statement

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the 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 a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer's 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 harmful interference to radio or television 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.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING! The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

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I. Introduction

Thank you for purchasing an **ASUS AGP-V9280 Series GPU Graphics Card**. With this purchase, you join a legion of mainstream graphics enthusiasts.

Powered by the **NVIDIA™ GeForce 4 Ti 4200-8X** graphics processing unit (GPU), the **ASUS AGP-V9280** series delivers breakthrough leading-edge graphics performance. Enjoy superior image fidelity regardless of the CPU (central processing unit) employed by the computer system.

With the **ASUS AGP-V9280** series, you will not only see but also experience stunning, dynamic, realistic 3D worlds and characters.~ Ensures braod application support

Highlights

- **Powered by the most integrated graphical engine: NVIDIA® GeForce 4 Ti 4200-8X**
  ~ Bringing 3D environments to life
- **AGP 8X support**
  ~ AGP 8X provides double the bandwidth of AGP 4X for increased graphics performance with up to 2.1 GB/sec of bandwidth
- **Built-in 128MB Double Data Rate frame buffer:**
  ~ More resolutions and color depths up to 2048x1536 @ 75Hz
- **Lightspeed Memory Architecture™ II:**
  ~ Advanced power behind the GPU delivers outstanding performance at all resolutions: up to 6.4 GB/Sec bandwidth
- **nVIEW™ display technology:**
  ~ The TV encoder integrates 1024x768 resolution with two independent display pipelines, providing the ultimate multiple display flexibility and user control
- **Accuview Anti-Aliasing:**
  ~ Dedicated multisample AA hardware brings 8X GeForce 4 Ti 4200 performance
- **Optimized for DirectX® 8.1 and OpenGL® 1.3 Features:**
  ~ Ensures broad application support

Available Models

V9280 Video Suite
- DDR Frame Buffer + DVI-I (1st VGA) + DVI-I (2nd VGA) + TV-Out + Video-In

V9280S/TVD
- DDR Frame Buffer + VGA +DVI-I (2nd VGA) + TV-Out

V9280 TD
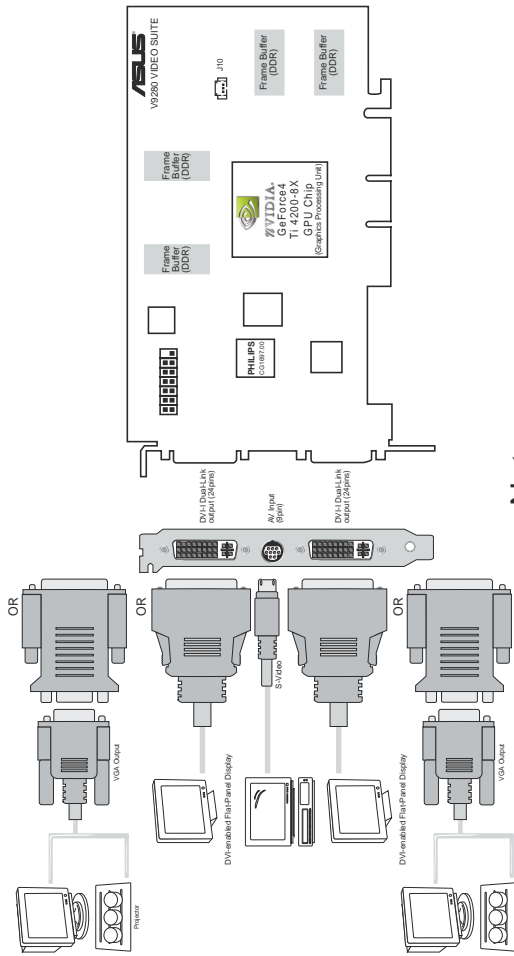- DDR Frame Buffer + VGA + TV-Out

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1. Introduction

Features

- The most graphically integrated engine yet: the GeForce 4 Ti 4200-8X delivers unprecedented features and effects to the demanding mainstream user. Realistic 3D characters and effects are now more life-like than ever before!

- nFiniteFX II engine, dual vertex shaders and pixel shader for full programmability.

- Accuview provides high resolution anti-aliasing.

- Lightspeed Memory Architecture II for lossless Z-compression and Z-occlusion calling.

- AGP 8X/4X/2X/1X complete support

- All new 64/128MB DDR memory dramatically boosts bandwidth efficiency up to 6.4GB/sec

- First to offer high resolution, high frame rate, Full-Scene Anti-aliasing (FSAA)

- Optimized for DirectX® 8.1 and OpenGL® 1.3 acceleration

- 8 texture-mapped, filtered, lit texels per clock cycle

- Single-pass multitexturing, 32-bit colors, Z/stencil buffer

- Advanced per-pixel lighting, texturing, shading and reflecting

- Cube environment mapping, environment bump mapping, S3 texture compression, phong-style lighting

- Integrated TV encoder at 1024x768 resolution

- High definition video processor for full frame rate, full scene playback of DVD.

- Motion compensation allows for DVD decoding at low CPU usage

- Multibuffering (double, triple, quad) for smooth animation and video playback

- Multiple video windows with hardware color space conversion and filtering (YUV 4:2:2 and 4:2:0)

2. Hardware Setup

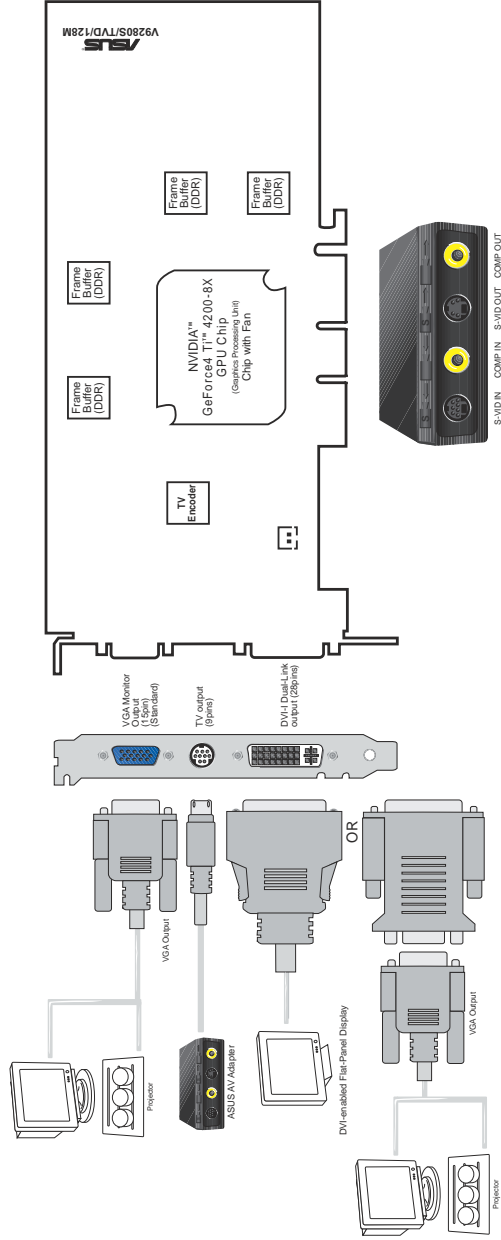## ASUS V9280 Video Suite Layout
128MB DDR Frame Buffer

ASUS V9280 VIDEO SUITE

Frame Buffer (DDR)

Frame Buffer (DDR)

J10

Frame Buffer (DDR)

NVIDIA GeForce4 Ti 4200-8X GPU Chip (Graphics Processing Unit)

Frame Buffer (DDR)

PHILIPS CG9867/00

DVI-I Dual-Link output (24pins)

AV Input (9pin)

DVI-I Dual-Link output (24pins)

OR

OR

OR

S-Video

VGA Output

VGA Output

DVI-enabled Flat-Panel Display

DVI-enabled Flat-Panel Display

Projector

Projector

Item Checklist
- ☑ ASUS V9280 Video Suite Graphics Card (PAL or NTSC)
- ☑ This User's Manual
- ☑ ASUS V9280 Driver and Utility CD Disc

Notes
- Use the same TV standard for all devices.
- ✎ and ✎ cannot be connected at the same time.
- Drawings are for reference only; actual cards may vary.
- The signal of upper DVI-I cannot be outputted simultaneously with signal of TV-out port. This is a limitation of the NVIDIA GPU chip.

2. Hardware Setup

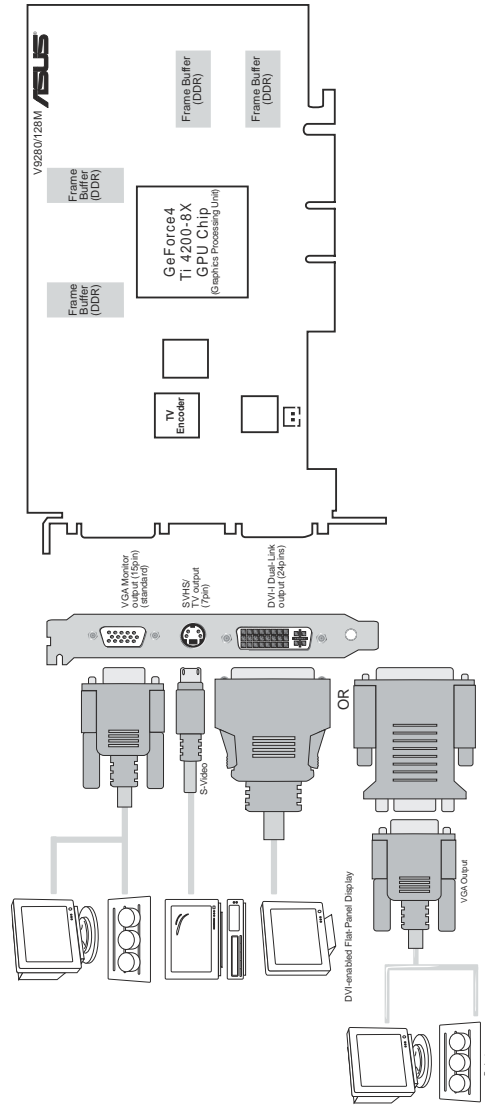## ASUS V9280S/TVD Layout
128MB DDR Frame Buffer

V9280S/TVD/128M

Frame Buffer (DDR)

Frame Buffer (DDR)

Frame Buffer (DDR)

Frame Buffer (DDR)

Frame Buffer (DDR)

NVIDIA™ GeForce4 Ti™ 4200-8X GPU Chip (Graphics Processing Unit) Chip with Fan

TV Encoder

S-VID IN   COMP IN   S-VID OUT   COMP OUT

VGA Monitor Output (15-pin) (Standard)

TV output (9 pins)

DVI-I Dual-Link output (28pins)

VGA Output

ASUS A/V Adapter

Projector

OR

DVI-enabled Flat-Panel Display

VGA Output

Projector

Item Checklist

☑ ASUS V9280S/TVD Graphics Card (PAL or NTSC)
☑ This User's Manual
☑ ASUS V9280 Driver and Utility CD Disc

Notes

- Use the same TV standard for all devices.
- and cannot be connected at the same time.
- Drawings are for reference only; actual cards may vary.

ASUS V9280 TD Layout
128MB DDR Frame Buffer

V9280/128M

Frame Buffer (DDR)

Frame Buffer (DDR)

Frame Buffer (DDR)

Frame Buffer (DDR)

GeForce4 Ti 4200-8X GPU Chip
(Graphics Processing Unit)

TV Encoder

VGA Monitor output (15pin) (standard)

SVHS/ TV output (7pin)

DVI-I Dual-Link output (24pins)

S-Video

OR

DVI-enabled Flat-Panel Display

VGA Output

Projector

Item Checklist

☑ ASUS V9280 TD Graphics Card
☑ This User's Manual
☑ ASUS V9280 Driver and Utility CD Disc

Notes

- Use the same TV standard for all devices.
- and cannot be connected at the same time.
- Drawings are for reference only; actual cards may vary.

2. H/W Setup
V9280 MAGIC / T

NOTE: This graphics card series can only be installed in motherboards with an AGP slot.

WARNING! Computer boards and components contain very delicate Integrated Circuit (IC) chips. To protect the computer board and other components against damage from static electricity, you must follow some precautions.
1. Make sure that you unplug your power supply when adding or removing expansion cards or other system components. Failure to do so may cause severe damage to both your motherboard and expansion cards.
2. Keep all components such as the host adapter in its antistatic bag until you are ready to install it.
3. Use a grounded wrist strap before handling computer components. If you do not have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case. Hold components by the edges and try not to touch the IC chips, leads, or circuitry.
4. Place components on a grounded antistatic pad or on the bag that came with the component whenever the components are separated from the system.

Installation Procedures
New VGA Cards
1. Unplug all electrical cords on your computer.
2. Remove the system unit cover.
3. Locate the AGP bus expansion slot. Make sure this slot is unobstructed.
4. Remove the corresponding expansion slot cover from the computer chassis.
5. Ground yourself to an antistatic mat or other grounded source .
6. Pick up the board (still in its sleeve) by grasping the edge bracket with one hand and then remove the plastic sleeve.
7. Position the card directly over the AGP slot and insert one end of the board in the slot first. Firmly but gently press the bus connector on the bottom of the card down into the slot. Be sure the metal contacts on the bottom of the host adapter are securely seated in the slot.
8. Anchor the board's mounting bracket to the computer chassis using the screw from the slot cover that you set aside previously.
9. Replace the cover on the system unit.
10. Connect your analog monitor's 15-pin VGA connector to the card and fasten the retaining screws (if any).
11. Connect other cables and devices if available -You are now ready to install the software drivers and utilities.

Systems with Existing VGA Card
1. Change your display driver to Standard VGA.
2. Shut down your computer and unplug all electrical cords.
3. Replace the existing VGA card with your graphics card.
4. Restart your computer.
5. Install the ASUS V9280 display driver.

2. Hardware Setup

Operating System Requirements

NOTE: This graphics card requires a motherboard with an AGP slot.

Windows 98

Windows 98 supports full Direct3D and AGP features. If you are using a beta version of Windows 98 and you want to fully take advantage the Direct3D and AGP features, you must upgrade it to the release version before installing the AGP display driver.
Windows 98 includes VGARTD for the major chipsets but it is recommended that you install VGARTD from the ASUS support CD to make sure that you have the latest version of VGARTD (*see* **3. Software Setup | Install GART Driver**).

NOTES

- VGARTD stands for Virtual Graphics Address Remapping Table Driver, which is necessary to use the DIME feature of AGP. DIME means Direct Memory Execute, which is accessed *directly* by most AGP chips (when VGARTD is installed) for complex texture-mapping operations.

- For other notes or release information, see the README files in the installation CD disc.

- This Manual assumes that your CD-ROM disc drive is drive D: and that Windows is in C:\WINDOWS. Replace either with the actual location, if necessary.

IMPORTANT!

- **To avoid damage to your graphics card**, unplug your computer's power supply before inserting your graphics card into the AGP slot.

- Make sure that the power supply of your motherboard can provide enough electrical current on the 3.3V lead to maintain normal operation.

- **Windows 98 and VIA Systems:** If your motherboard has a VIA-based chipset, the VIA VGARTD must be installed in normal mode.

3. Software Setup

Display Driver Installation

You can use one of the recommended methods to install the display drivers for your graphics card, depending on your operating system. The ASUS fine-tuned enhanced driver delivers the best 3D performance on your video output.

NOTE: The screen displays in this manual may not reflect exactly the screen contents displayed on your screen. The contents of the support CD are subject to change at any time without notice.

Windows 98/ME

Method 2 and Method 3 will not install the appropriate AGP GART driver if your motherboard does not use the Intel AGPset. Installing the AGP GART driver will ensure that the AGPset's AGP functions are available. Method 2 and Method 3 will not install also the DirectX runtime libraries. DirectX must be installed so that your video player can take advantage of hardware acceleration. *See* **3. Software Setup | Install GART Driver** and **3. Software Setup | Install DirectX** later in this manual for the setup steps.

Method 1: ASUS Quick Setup Program

NOTE: *See* **3. Software Setup | Drivers | Install Display Driver** for more information.

1. Start Windows.
2. Switch display to Windows' Standard Display Adapter (VGA) mode and then restart Windows.
3. Insert the CD installation disc into your CD-ROM drive.
4. The autorun screen appears. Click **Drivers** and then click **Install ASUS Enhanced Driver** on the **Drivers** dialog box.

5. Follow the onscreen instructions to complete the setup.
6. When Setup has finished installing all the necessary files on your computer, it will prompt you to restart your computer. Click **Yes...** and then **Finish** to restart your computer and to complete Setup.

3. Software Setup

Method 2: Display Property Page

1. Start Windows.

2. Right-click the Windows desktop and click **Properties**.

3. Click the **Settings** tab and then click **Advanced**. The **Standard Display Adapter (VGA) Properties** dialog box appears.

4. Click **Change** on the **Adapter** tab. The **Update Device Driver Wizard** dialog box appears. Click **Next**, click **Display a list of all the drivers**... and then click **Next**.

5. Click **Show all hardware** and then click **Have Disk**....When the **Install From Disk** dialog box appears, type the location of the ASUSNV9X.INF file (WIN9X folder) and then proceed to step 9. Otherwise, proceed to the next step.

6. Click **Browse** to search the CD-ROM drive. In the **Drives** box of the **Open** dialog box, select your CD-ROM drive and then click **OK**.

7. In the **Folders** box, double-click the WIN9x folder and then select ASUSNV9X.INF in the **File name** box.

8. Click **OK**. A list of video cards appears. Select your VGA card type for your operating system and then click **OK**.

9. The **Update Driver Warning** box appears. Click **Yes** to confirm the setting up of the ASUS enhanced display drivers and then follow the onscreen instructions to start the setup.

10. Setup will prompt you when it has finished installing all the necessary files on your computer. Click **Finish** to close Setup.

11. When you are returned to the **Standard Display Adapter (VGA) Properties** box, click **Close**. The **Display Properties** box appears. Click **Close**.

12. The system will prompt you to restart your computer. Click **Yes** to restart your computer and to complete Setup.
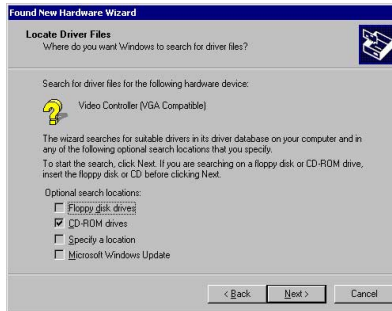
3. S/W Setup
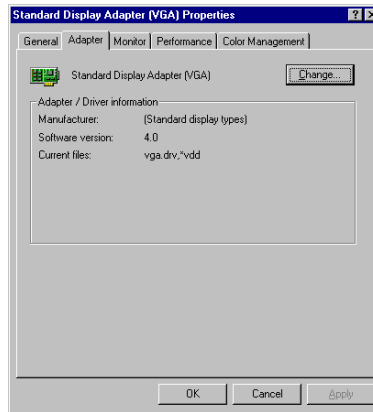
3. Software Setup

Method 3: Plug and Play

NOTE: Before proceeding with the following steps, replace your old VGA card with the ASUS V9280 series graphics card.

1. Start Windows.

2. When Windows detects your ASUS V9280 series graphics card, the **New Hardware Found** dialog box appears.

3. Click **Driver from disk provided by hardware manufacturer**.

4. When Setup prompts you for the location of the driver, type D:\WIN9xMe to direct Setup to the INF file and then click **Finish** to install the driver.

5. When Setup has finished installing all the necessary files on your computer, it will prompt you to restart your computer. Click **Yes** to restart your computer and to complete Setup.

Windows 2000/XP

Method 1: ASUS Quick Setup Program

1. Start Windows.

2. When Windows detects your ASUS graphics card, the **Found New Hardware Wizard** dialog box appears.

3. Click **Cancel** to enter the Windows desktop.

4. Insert the CD installation disc into your CD-ROM drive.

5. The ASUS Windows 2000 autorun screen appears. Click **Drivers** and then click **Install ASUS Enhanced Driver** on the **Driver** dialog box.

6. Follow the onscreen instructions to complete the setup.

7. When Setup has finished installing all the necessary files on your computer, it will prompt you to restart your computer. Click **Yes** to restart your computer and to complete Setup.

3. Software Setup

Method 2: Plug and Play

1. Start Windows.

2. When Windows detects your ASUS graphics card, the **Found New Hardware Wizard** dialog box appears.

3. Click **Next**.

4. When the next **Found New Hardware Wizard** dialog box appears, select **Search for a suitable driver for my device (recommended)** and then click **Next**.

5. Insert the CD installation disc into your CD-ROM drive to bring up the **Locate Driver Files** item of the **Found New Hardware Wizard** dialog box.

6. Check **CD-ROM drives**, uncheck all other options and then click **Next** to search for the drivers of your graphics card.

3. Software Setup

7. When the wizard has finished searching for driver files for your graphics card, select **Install one of the other drivers** and then click **Next** from the **Driver Files Search Results** item of the **Found New Hardware Wizard** dialog box.

8. When prompted to select the display driver to install in your system, select the one that is located in the D:\WIN2KXP\ASUS and then click **Next**.

9. Follow the onscreen instructions to complete the setup.

10. When Setup has finished installing all the necessary files on your computer, it will prompt you to restart your computer.

11. Click **OK** to restart your computer and to complete Setup.

3. Software Setup

Windows NT 4.0

Method 1: Display Property Page

WARNING! Before installing the display driver in Windows NT 4.0, make sure that you have installed **Windows NT 4.0 Service Pack 3 or later, to take full advantage of the AGP features of your card.** (You may download service packs at http://www.microsoft.com/ntworkstation/downloads.)

NOTE: The following steps assume your CD-ROM drive letter is D.

1. Start Windows NT, switch display properties to VGA mode (16 colors, 640 x 480 pixels), then restart your computer to make the change.
2. After your computer restarts, right-click the desktop and click **Properties**.
3. Click the **Settings** tab.
4. Select **Change Display Type**.
5. Select **Adapter Type** and click **Change**.
6. Click **Have Disk**.
7. Insert the CD installation disc.
8. Type **D:\NT40** or click **Browse** to select the path of the display driver for Windows NT. Click **OK.**
9. Select **ASUS V9280** and then click **OK**.
10. Windows NT will once again prompt for confirmation. All appropriate files are then copied to the hard disk. When all files are copied, go back to the **Display Properties** box by clicking **Close**. Click **Apply.**
11. The **System Settings Change** dialog box is displayed. Click **Yes** to restart Windows.
12. Windows NT will restart with the default settings. The Display applet will appear to allow for mode selection.

3. S/W Setup
Drivers

3. Software Setup

Drivers

NOTES: 1) The screen displays in this manual may not reflect exactly the screen contents displayed on your screen. The contents of the support CD are subject to change at any time without notice.

2) Unless otherwise indicated, the procedures under **Drivers** apply to all the operating systems supported, namely, Windows 98, Windows 2000, and Windows NT 4.0.

Install NVIDIA WHQL Driver

The NVIDIA reference driver to Microsoft's Windows Hardware Quality Labs (WHQL) is a procedure to guarantee that this video peripheral is compatible with the Windows operating system.

1. Insert the CD installation disc into your CD-ROM drive or double click the CD drive icon in My Computer to bring up the autorun screen or run **Setup.exe** in the root directory of your CD-ROM drive.
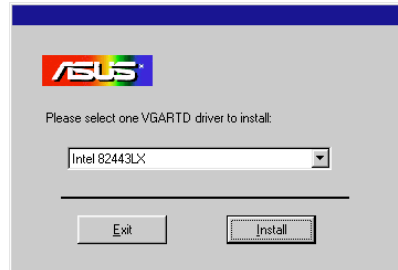
   Click **Drivers**.

2. The **Drivers** box appears. Click **Install NVIDIA WHQL Driver** to copy necessarily files to your operating system.

3. Setup will prompt when it has finished copying all the files to your computer. Click **OK** to finish the installation.

NOTE: Some features of ASUS display card is not supported by this reference driver.

3. Software Setup

Install DirectX

Microsoft DirectX allows 3D hardware acceleration support in Windows 98. For Software MPEG support in Windows 98, you must first install Microsoft DirectX, and then an MPEG-compliant video player.

1. Insert the CD installation disc into your CD-ROM drive or double click the CD drive icon in My Computer to bring up the autorun screen or run **Setup.exe** in the root directory of your CD-ROM drive.
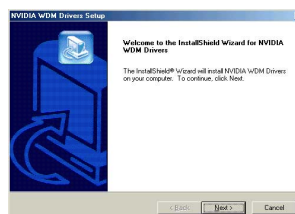
   Click **Drivers**.

2. The **Drivers** box appears. Click **Install DirectX** to select the DirectX version you want to install.

3. The installation program will automatically install the DirectX runtime libraries into your system.

4. Setup will prompt when it has finished copying all the files to your computer. Click **OK** to finish the installation.
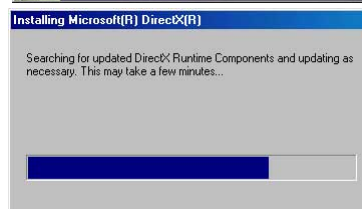
WARNING! Some games written for older DirectX versions may not work properly under DirectX. Make sure that your applications or games support DirectX before installing the DirectX runtime libraries. DirectX currently cannot be uninstalled by regular means, such as outlined in **3. Software Setup | Uninstall Display Driver**.

---

3. Software Setup

Install GART Driver

The AGP GART Driver is used to support AGP functionality for the chipset on your PC's motherboard. It is recommended to install the GART driver if it is newer than the one you have installed in your system. The GART driver is only necessary for an AGP graphics card.

NOTE: Installation dialogs are slightly different for each chipset. Follow the on-screen instructions to finish the GART driver installation. The succeeding steps assume that you are installing for an Intel chipset.

1. Insert the CD installation disc into your CD-ROM drive or double click the CD drive icon in My Computer to bring up the autorun screen or run **Setup.exe** in the root directory of your CD-ROM drive.

   Click **Drivers**.

2. The **Drivers** box appears. Click **Install GART Driver** to install AGP support for motherboards with Intel, AMD, VIA, SiS, or ALi chipsets.

3. The **AGP VGARTD Driver Detection** box appears with the chipset detected on your motherboard. Click **OK** to install the appropriate driver for your AGPset.

3. Software Setup

4. If you selected **No...**, on the previous screen before clicking **OK**, you will be presented with a selection of other drivers. Make your driver selection and click **Install**.

Please select one VGARTD driver to install:

Intel 82443LX

Exit   Install

5. When the **Welcome** screen appears, click **Next** to continue.

Welcome

Welcome to the Intel VGARTD Driver Setup program. This program will install Intel VGARTD Driver on your computer.

It is strongly recommended that you exit all Windows programs before running this Setup program.

Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.

WARNING: This program is protected by copyright law and international treaties.

Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.

Next >   Cancel

6. Once the driver installation is finished, click **Finish.**

Setup Complete

Setup has finished copying files to your computer.

Before you can use the program, you must restart Windows or your computer.

○ Yes, I want to restart my computer now.
○ No, I will restart my computer later.

Remove any disks from their drives, and then click Finish to complete setup.

< Back   Finish

3. Software Setup

Install WDM Capture Driver

The Windows Drive Model (WDM) Capture Driver let applications capture video from video input port.

1. Insert the CD installation disc into your CD-ROM drive or double click the CD drive icon in My Computer to bring up the autorun screen or run **Setup.exe** in the root directory of your CD-ROM drive.

   Click **Drivers**.

<div style="..."></div>
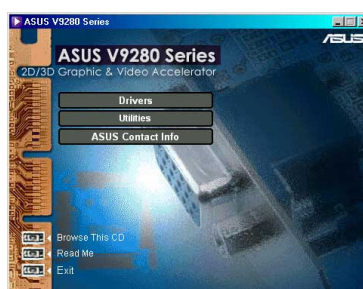
2. The **Drivers** box appears. Click **Install WDM Capture Driver** to install files for video capture from video input port.
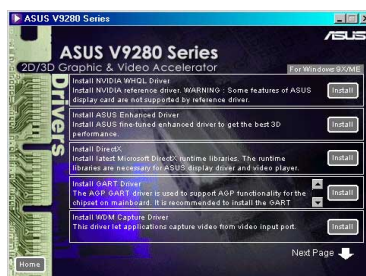
3. The **NVIDIA WDM Drivers Setup** dialog box appears, click **Next>** to install the appropriate driver for your VGA card.

4. Once the driver installation is finished, click **Finish.**

   NOTE: This feature only works on display cards with video-in function.

3. Software Setup

Uninstall Display Driver

If you want to update your display drivers or if you no longer need the display drivers for your card, you can use one of the following procedures to completely uninstall the drivers from your system to save disk space.

Windows 98/ME

Method1: Using the Autorun Screen

1. Insert the CD installation disc into your CD-ROM drive or double click the CD drive icon in My Computer to bring up the autorun screen or run **Setup.exe** in the root directory of your CD-ROM drive.

   Click **Drivers**.

2. Click **Uninstall Display Driver** and follow the on-screen directions.

Method 2: Using Control Panel

1. Click **Start**, and then point to **Settings**.

2. Click **Control Panel**.

3. Double-click the **Add/Remove Programs** icon.

4. Click the **Install/Uninstall** tab.

5. Click **ASUS Display Drivers** from the list**.**

6. Click **Add/Remove**.

7. The system will prompt you to restart your computer. Click **Yes** to restart.

3. Software Setup

Windows 2000/XP

Method1: Using the Autorun Screen

See **Windows 98** | **Method 1: Using the Autorun Screen** earlier in this section for the procedures.

Method 2: Using Control Panel

1. Click **Start**, and then point to **Settings**.

2. Click **Control Panel**.

3. Double-click the **Add/Remove Programs** icon.

4. Click the **Change/Remove Programs** icon.

5. Click **ASUS Display Drivers** from the list**.**

6. Click **Change/Remove**.

7. The system will prompt you to restart your computer. Click **Yes** to restart.
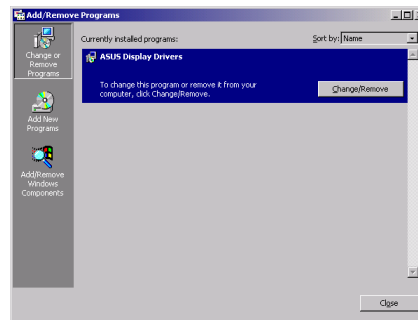
Windows NT 4.0

Method 1: Using Control Panel

1. Click **Start**, and then point to **Settings**.

2. Click **Control Panel**.

3. Double-click the **Add/Remove Programs** icon.

4. Click the **Install/Uninstall** tab.

5. Click **ASUS Display Drivers** from the list**.**

6. Click **Add/Remove**.

7. The system will prompt you to restart your computer. Click **Yes** to restart.

3. Software Setup

Utilities

Install Smart Doctor *(V9280 Video Suite only)*

The Smart Doctor monitor the VGA card's health and dynamically cool down VGA chipset. It also provides you access to adjust clock settings.

1. Insert the CD installation disc into your CD-ROM drive or double click the CD drive icon in My Computer to bring up the autorun screen or run **Setup.exe** in the root directory of your CD-ROM drive.

    Click **Utilities**.

2. The **Utilities** box appears. Click **Install Smart Doctor** to load Install Shield Wizard.

3. Click on **Finish**, after the setup is complete.
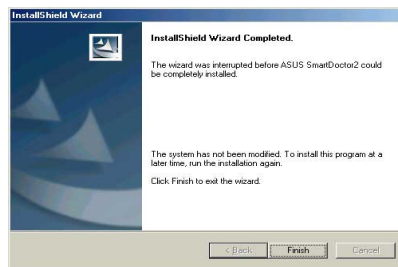
Note: The Smart Doctor utility is available only for VGA card models with built-in monitor chipset, otherwise, ASUS Tweak utility will be installed.
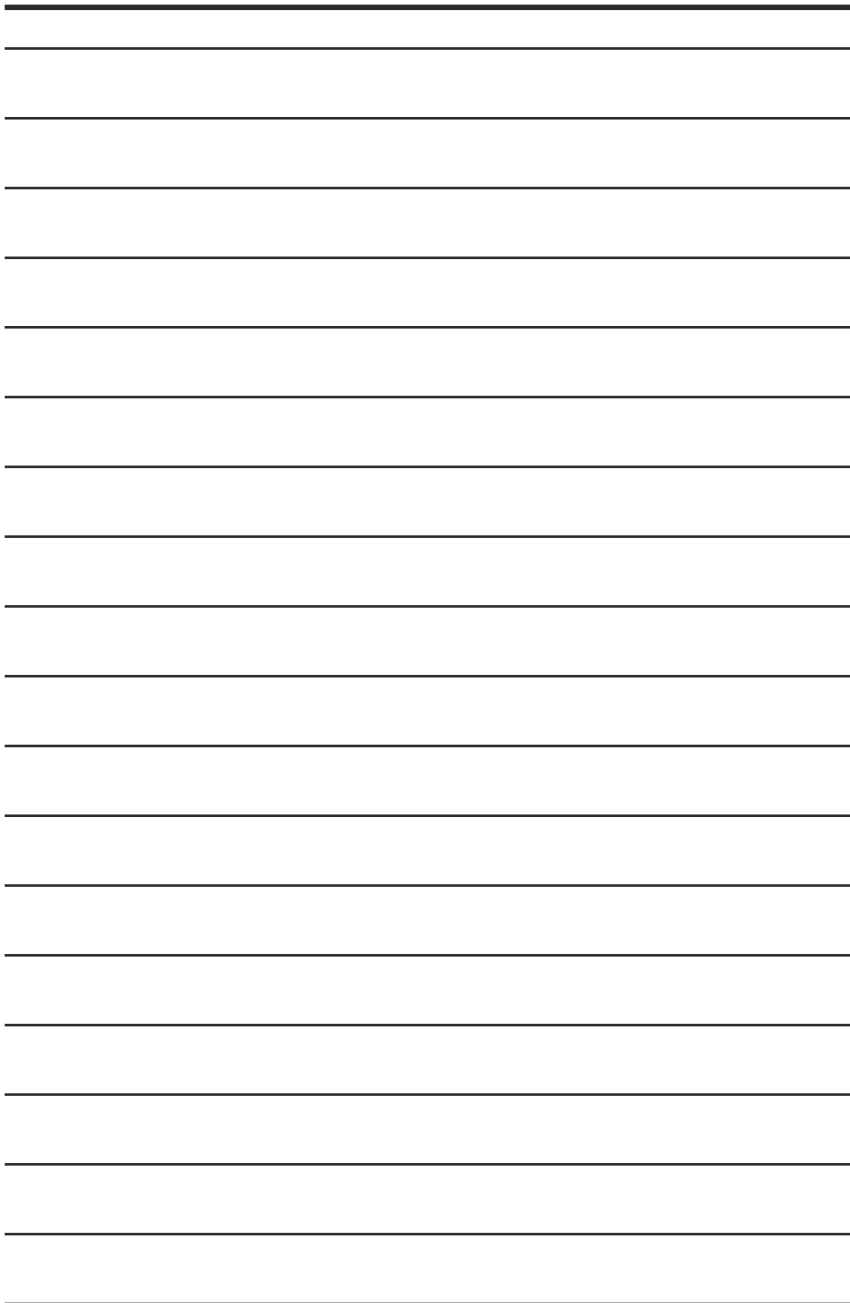
4. Software Reference

ASUS Control Panel

After installing the display drivers, look for an **ASUS icon** on the **taskbar's status area**. **Clicking** this icon opens the **ASUS Control Panel**, a menu composed of shortcuts to the graphics board's various enhanced functions.

Alternatively: **right-click** the **Windows desktop**, then **click** the **Windows Display Properties field** and then **click** the **Settings tab**. With **Windows 98/2000**, next **click** the **Advanced** button on the **Settings menu**. Click the appropriate tab to change the display settings.

ASUS Control Panel icon

Refresh Rate

This control changes the refresh rate of the current screen resolution.

> **WARNING!** Be sure that the refresh rate that you select is supported by your monitor. Selecting a refresh rate that is beyond your monitor's specification may damage it. **Press ESC to restore your original settings in case of problems.**

Click/right-click the ASUS Control Panel icon, then point to **Refresh Rate**, and **click** the desired refresh rate.

Next, the system prompts whether to keep the setting. Click **OK** to keep the setting, otherwise, **click Cancel** or **press ESC**.
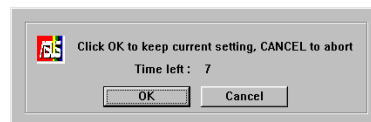
4. Software Reference

More Resolution

More Resolution lets you change the screen resolution of your monitor.

Click/right-click the ASUS Control Panel icon, point to **More Resolution**, and then click the desired screen resolution. The system will automatically set the resolution selected without restarting your computer.

WINDOWS 95 USERS: You will be prompted to restart your computer if you select a screen resolution with a different color depth, for example, from 800x600 HiColor to 800x600 TrueColor. Click **OK** to restart your computer to make the change.
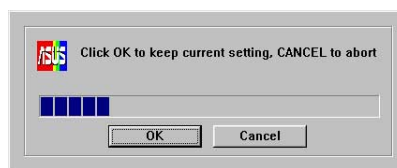
Information

Information lists pertinent data about the graphics card. It supplies links to the ASUSTeK COMPUTER, INC. web site for accessing updated data about the graphics board and its latest drivers.

4. Software Reference

Color

Color facilitates **adjustments** to the **brightness**, **contrast** and **gamma** values for each or all of the **RGB colors**. These adjustments can be made for **D3D/Game** and **OpenGL environments**.

D3D/Game

D3D/Game lets you make your favorite color settings for D3D games.
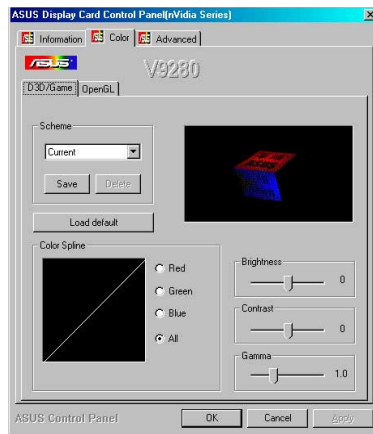
OpenGL

OpenGL lets you make your favorite color settings for OpenGL applications.
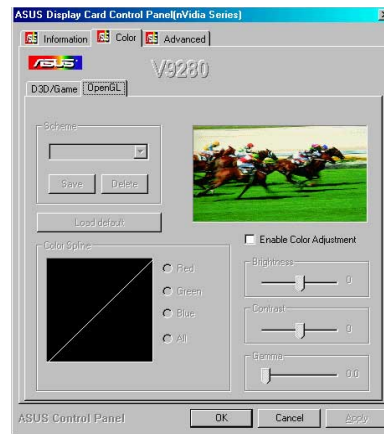
NOTE: The color settings of D3D/Game and OpenGL are not adjustable **below** 8-bit color depth.

4. Software Reference

General Functions

Brightness / Contrast / Gamma
Three sliders calibrate the brightness, contrast, and gamma output of the display card.
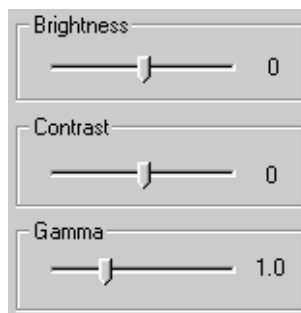
D3D/Game / OpenGL
Changes to color settings are shown immediately on your monitor. Dragging a slider to the left decreases the level and to the right increases it. The number at the right of each slider displays the brightness
Value Range: -128 to +128, default: 0, Contrast -30 to 30, default: 0; and Gamma value 0.2 to 3.0, default: 1.0.

Color Spline
This tool shows the distribution of **Red**, **Green and Blue** color channels as adjustments are made to the **Brightness**, **Contrast**, or **Gamma** sliders. Adjust all channels at once: (**All**); or, make individual changes to each channel: (**R**, **G**, or **B**).
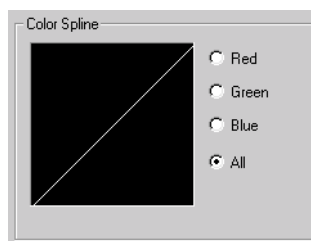
Scheme
This tool changes the appearance of many screen elements simultaneously and functions like a macro; saving a scheme retains particular system presets. Apply existing schemes, or create and save schemes by saving the current settings; existing schemes may be deleted. A scheme may be developed to satisfy the requirements of special situations, ie.: whenever playing a certain game or a movie.
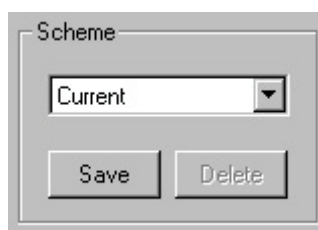
Important Note

D3D/Game
The color settings of **D3D/Game** take effect only when playing a **full-screen DirectDraw/Direct3D** type game.

4. Software Reference

Advanced

This menu supplies sophisticated settings for use with the **ASUS VR-100G 3D Glasses**. These settings are available only with the **Deluxe/TVR** models with **Video-In/TV-Out**, or models with the **ASUS VR-100 Optional Upgrade Kit**.

Direct3D

VR Effect

Lists all parameters to fine tune the stereoscopic effects for **Direct 3D** games.

Enable Stereoscopic Mode

When selected, this enables the stereoscopic mode when playing games or watching 3D videos.

NOTE: Quit all running DirectDraw/ Direct3D applications and then restart them for options to take effect.

Load Default

Restores the initial settings.

Depth

Adjust this to add more depth to the scene.

NOTE: A very high setting may cause eyes discomfort.

Embossment

Adjust this to add more to the impression that screen objects are being pulled or seem to pop from the screen. (*See* **On Screen Display** later in this section for more details.) *NOTE*: A very high setting may cause eyes discomfort.

Direction

Sometimes, moving the slider to the left when adjusting **embossment** does not give the expected effects. Therefore, it may be necessary to adjust the **direction** effect slider **leftwards** to gain added responsiveness.

Foreground

Foreground is set in conjunction with **background** to stretch the **histogram chart** on the **D3D OSD box** of current games to scale the depth of 3D objects (*see* pages 49 and 50 for an examples and more info). Move the **foreground** slider **leftwards** to shift the foreground along the Z-axis towards "0."

Background

Background is set in conjunction with **foreground** to stretch the **histogram chart** on the **D3D OSD box** of current games to scale the depth of 3D objects. Move the **foreground** slider **leftwards** to shift the foreground along the Z-axis toward "100."

Blind

This slider discards "garbage," cropping out unwanted areas from the left/right peripheries of the display. Setting to "0" does not discard any of the display area, while setting to a higher value crops them away.
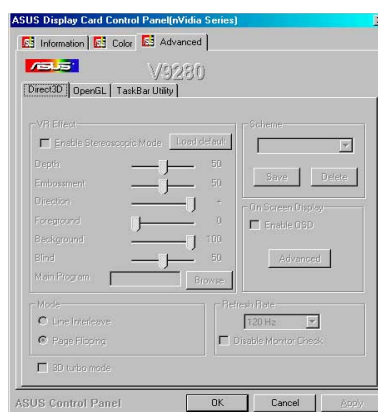
4. Software Reference

Main Program

This field is used in conjunction with the **Scheme** function **below**. When selecting a D3D OSD scheme for a specific program, load the scheme default file.

Mode

Line Interleave

Select this option for better monitor compatibility, particularly for monitors with less bandwidth or less range of horizontal/vertical frequency. Stereoscopic visual quality, however, will be poor since only half the vertical lines are generated.

Page Flipping

Select this option for the best stereoscopic visual quality. Page flipping provides double vertical resolution compared with Line Interleave. The monitor must be able to support the high frequency (at least 100Hz) necessary for this mode.

Refresh Rate

To prevent eye discomfort and fatigue, high refresh rates are preferred. Some monitors, however, may not be able to support a high refresh rate. Consult documentation to make sure that your monitor supports the selected refresh rate; otherwise, your monitor may become unstable, ie.: a blank screen may occur.

Disable Monitor Check

Disables the specification check on the monitor.

Note: Choosing a resolution or refresh rate in excess of monitor specifications may damage the monitor.

Scheme

This field lists the various default schemes that change the appearance of many screen elements simultaneously. Use existing schemes by selecting from the games listed in the drop-down menu and then go to the **main program** field to **browse** for the default settings file supplied with each game for D3D OSD settings. **Click** on **Save** to engage the file with the NVIDIA system. Create and save your own scheme by saving current custom settings. Unwanted schemes may be deleted. You may want to save a scheme that you created for some special situations, such as when you want to use the same settings when playing a certain game or a movie.

Tips for VR!

1. Make sure that the 3D screen objects do not appear either too far apart, or separated into slightly overlapping images. These effects indicate **over-** or **under-compensation**. **Readjust** the settings to avoid eyestrain.

2. Settings may be adjusted to make some objects appear to hover above the screen area as other objects float below the surface. A ratio of 1:3 to 1:5 of objects above to below is recommended.

3. For race games, use **embossment** to make your car appear above the screen.

4. For first-person shooting games, use **embossment** to make only your hand/weapon appear above the screen.

---

4. Software Reference

On Screen Display

Enable OSD

Clicking on the check box enables access to the **advanced** box. When selected, this option opens the **D3D On Screen Display.** Use the defined **Hotkey** and adjust the onscreen settings of the 3D glasses and display card while playing Direct 3D games or watching 3D movies.

Advanced

Click on the button to access the **advanced** box to access **hotkey** assignments.

Hotkey

This function assigns hot keys to enable onscreen display or OSD. Select **Enable OSD** then **click** on the **advanced button**. Change the default hot key (CTRL + ALT + O) if it conflicts with hot keys of certain games, video players or Windows programs.

To change the default hot keys

With the mouse cursor in the **Hotkey** box, press the hot key combination of your choice (only **CTRL + ALT + X** key combinations can be defined). Keys that are unavailable for hotkey *X* values include: ESC, ENTER, TAB, SPACEBAR, PRINT SCREEN, or BACKSPACE. Press any other key to complete the combination. For example: to define the hot key combination **CTRL+ALT+D**, having placed the cursor in the box - **press D**.

NOTE: Hot keys will be available only if you selected the **Enable OSD** check box

IMPORTANT: Before enabling *D3D* stereoscopic mode and using the stereoscopic or 3D glasses (ASUS VR-100G), make sure the monitor can support the selected refresh rate (interlaced mode) under the following display scales:
  16 bits: 640 x 480, 800 x 600, 960 x 720, 1024 x 768, 1152 x 864
  32 bits: 640 x 480, 800 x 600

WARNING! To prevent discomfort and eye fatigue when using stereoscopic or 3D glasses, DO NOT use 3D glasses for an extended period of time. Take frequent short breaks to give your muscles and eyes a chance to rest: remove the 3D glasses and then look up and focus on distant objects.

4. SW Reference
Advanced D3D

4. Software Reference

Typical D3D OSD Onscreen Game Settings

When selected, the **D3D onscreen menu** helps to adjust the settings of 3D glasses and the display card while playing games or watching 3D videos. Typical **D3D OSD** onscreen settings include: **Depth**, **Embossment**, **Direction**, **Background**, **Foreground**, **Blind**, **Brightness**, **Contrast**, and **Gamma**.

In most games, use the keyboard **UP** or **DOWN** arrow keys to select a new setting. The **PLUS** or **MINUS** keys move the sliders. To restore the defaults, press the HOME key. To close screen settings display, use the END key.

D3D/OSD Histogram

The OSD Histogram Chart pinpoints the Z-axis range upon which 3D objects appear as well as how they gather. For example, if the above chart (simulated) was displayed for a car racing game, the vertices to the **left** of the **E line** could be the model of the game player's car, and those objects to the **right** of the **E line** could be the road, houses, other cars or trees in front of the car.
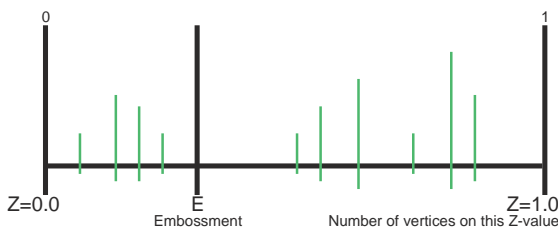
So, with this information, the user may:

• Adjust **embossment** by moving the **E line**.
• Adjust **foreground/background**, thus stretching out the histogram to make objects more evenly distributed.

NOTE: Using the histogram chart requires games using **Direct3D® 6.0** or earlier.

Known Issues on Specific Games

See the ASUS support CD for the latest information: D3DVR.TXT in the WIN9XME folder.

4. Software Reference

OpenGL

VR Effect

Lists all parameters to fine tune the stereoscopic effects for **OpenGL** games.

Enable Stereoscopic Mode

When selected, this enables the stereoscopic mode when using **OpenGL 3D** applications and games with the **ASUS VR-100G 3D Glasses**. These settings are available only with the **Deluxe/TVR** models with **Video-In/TV-Out**, or models with the **ASUS VR-100 Optional Upgrade Kit**.

Eyes

This field records the measure of the distance between both eyes. Adjustment brings objects into focus. **Default: 0**

View Angle

The angle by which your two viewing directions intersect. Adjust this to add more depth to the scene. See p. 33 note.

Embossment

Adjust this to add more to the impression that screen objects are being pulled or seem to pop from the screen. To achieve a better stereoscopic visual quality, set **Embossment** in conjunction with **View Angle**. (*See* **On Screen Display**.)

Mode

Line Interleave

Select this option for better monitor compatibility, particularly for monitors with less bandwidth or less range of horizontal/vertical frequency. Stereoscopic visual quality, however, will be poor since only half the vertical lines are generated.

Page Flipping

Select this option for the best stereoscopic visual quality. Page flipping provides double vertical resolution compared with Line Interleave. The monitor must be able to support the high frequency (at least 100Hz) necessary for this mode.

Refresh Rate

To prevent eye discomfort and fatigue, high refresh rates are preferred. Some monitors, however, may not be able to support a high refresh rate. Consult documentation to make sure that your monitor supports the selected refresh rate; otherwise, your monitor may become unstable, ie.: a blank screen may occur.

Disable Monitor Check

Disables the specification check on the monitor. **Note:** Choosing a resolution or refresh rate in excess of monitor specifications may damage the monitor.

3D Turbo Mode

This selection boosts performance in 3D games, but risks some visual instability.
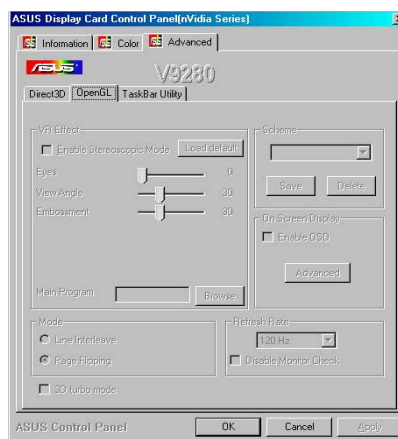
4. Software Reference

Scheme

This field lists the various default schemes that change the appearance of many screen elements simultaneously. Use existing schemes by selecting from the games listed in the drop-down menu and then go to the **main program** field to **browse** for the default settings file supplied with each game for OpenGL OSD settings. **Click** on **Save** to engage the file with the NVIDIA system. Create and save your own scheme by saving current custom settings. Unwanted schemes may be deleted. You may want to save a scheme that you created for some special situations, such as when you want to use the same settings when playing a certain game or a movie.

On Screen Display

Enable OSD

Clicking on the check box enables access to the **advanced** box. When selected, this option opens the **OpenGL On Screen Display.** Use the defined **Hotkey** and adjust the onscreen settings of the 3D glasses and display card while playing Direct 3D games or watching 3D movies.

Advanced

Click on the button to access the **advanced** box to access **hotkey** assignments.

Hotkey

This function assigns hot keys to enable onscreen display or OSD. Select **Enable OSD** then **click** on the **advanced button**. Change the default hot key (CTRL + ALT + O) if it conflicts with hot keys of certain games, video players or Windows programs.

To change the default hot keys

With the mouse cursor in the **Hotkey** box, press the hot key combination of your choice (only **CTRL + ALT + X** key combinations can be defined). Keys that are unavailable for hotkey X values include: ESC, ENTER, TAB, SPACEBAR, PRINT SCREEN, or BACKSPACE. Press any other key to complete the combination. For example: to define the hot key combination **CTRL+ALT+D**, having placed the cursor in the box - **press D**.

NOTE: Hot keys will be available only if you selected the **Enable OSD** check box.

> **IMPORTANT:** Before enabling *OpenGL* stereoscopic mode and using the stereoscopic or 3D glasses (ASUS VR-100G), make sure the monitor can support the selected refresh rate (interlaced mode) under the following display scales:
> **16 bits:** 2048x1536 → 1024x768 Stereo Mode
> **32 bits:** 1280x960 → 640x480 Stereo Mode, 1280x1024 → 640x480 Stereo Mode, 1600x900 → 800x600 Stereo Mode, 1600x1200 → 800x600 Stereo Mode

> **WARNING!** To prevent discomfort and eye fatigue when using your stereoscopic or 3D glasses, DO NOT try to use your 3D glasses for an extended period of time. Take frequent short breaks to give your muscles and eyes a chance to rest by taking off your 3D glasses and then looking up and focusing on distant objects.

4. Software Reference

Typical OpenGL OSD Onscreen Game Settings

Unreal Tournament™ is copyright © 1999 by Epic Games, Inc.

When selected, the **OpenGL onscreen menu** helps to adjust the settings of 3D glasses and the display card while playing games or watching 3D videos. Typical OSD onscreen settings include:**Eyes**, **View Angle**, **Embossment**, **Brightness**, **Contrast**, and **Gamma**.

In most games, use the keyboard **UP** or **DOWN** arrow keys to select a new setting. The **PLUS** or **MINUS** keys move the sliders. To restore the defaults, press the HOME key. To close screen settings display, use the END key.

Known Issues on Selected Games/Applications

See the included support CD for the latest information: OPENGLVR.TXT in the WIN9XME folder.

4. SW Reference
Advanced OpenGL

4. Software Reference

TaskBar Utility

This utility gives convenient access to various features and presets that may be configured in the **Display Properties Menu** directly from the **Windows taskbar**.
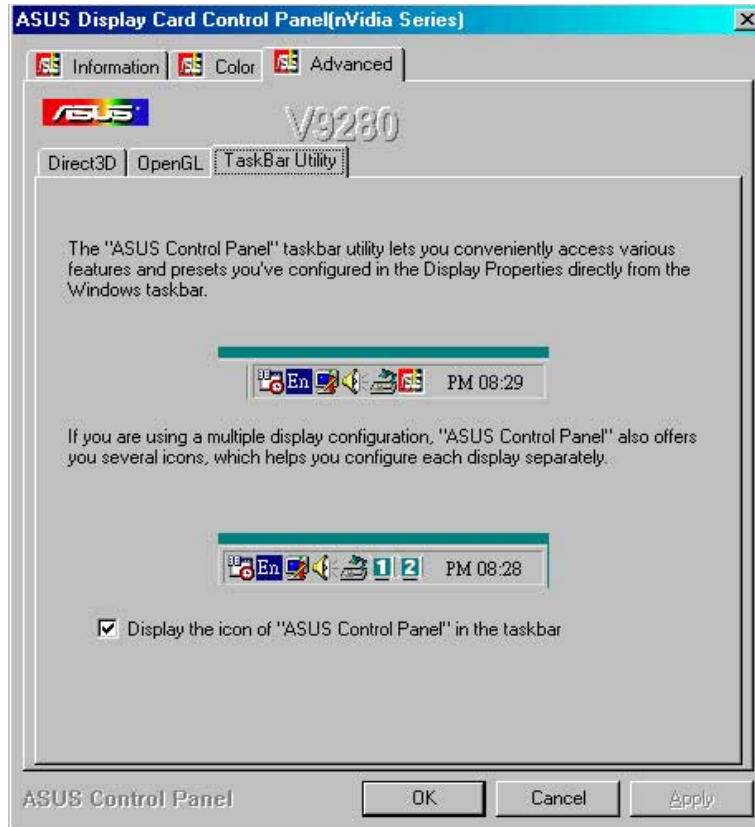
4. Software Reference

🖳 Windows Display Properties

The Windows Display Properties is a control panel that helps to make screen adjustments: to the display positions and to color correction, including: brightness, contrast, and gamma. The display properties menu is useful to enable and configure the TwinView display and to make additional property adjustments.

To use **Windows Display Properties**, **click** the ASUS icon on the taskbar's status area to open the **ASUS Control Panel Menu**. Click **Windows Display Properties**, click the **Settings** tab, and then click **Advanced**.

NOTE: Instead of clicking the ASUS Control Panel icon, you may right-click the Windows 98/2000 desktop, click **Properties**, and then click the **Settings** tab. Then click the **Advanced** button on the bottom right. Click the appropriate tab (with the NVIDIA icon 🔷) to change your display settings.

> **TIP!** You can almost always get more information about a particular option by right-clicking it and then clicking **What's This?**

Device Selection

Click the Device Settings and then click the Select Output Device.

Select the device/devices connected to your card (Analog Monitor, Digital Flat Panel, TV) or click **Detect Displays** to detect the connected device/devices.

> **WARNING!** Adjusting position or size is a highly dangerous operation. Selecting a value that is beyond your monitor's specification may damage it. **Press ESC to restore your original settings in case of problems.**
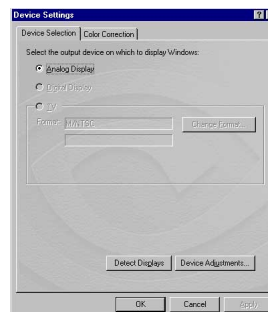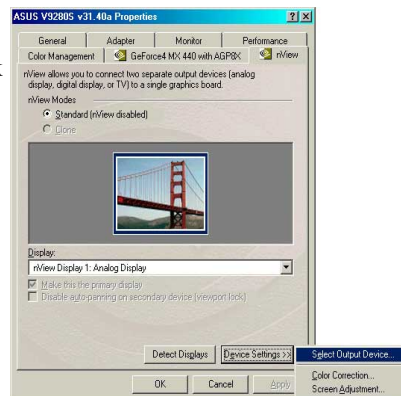
4. S/W Reference
Display Properties

Analog Monitor

Screen Adjustments

Two submenus permit changes to the position and proper timing mode for your monitor. In **Screen Adjustments**, follow the onscreen instructions to adjust the position of your monitor. For fine adjustments, use the arrows.
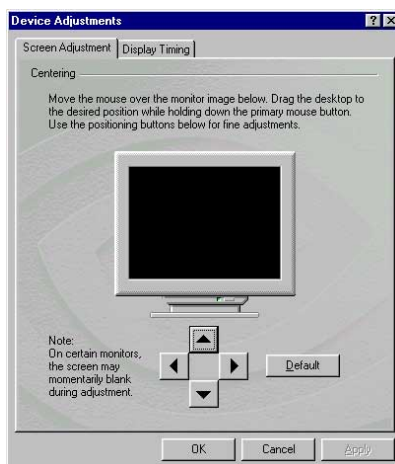
Display Timing

Selects the proper timing mode.

Auto-Detect allows Windows to receive the proper timing information directly from the monitor itself.

NOTE: Some older monitors may not support this feature.

General Timing Formula (GTF) GTF is a standard used by most new hardware.

Discrete Monitor Timings (DMT) DMT is an older standard still in use on some hardware. Select this option if your hardware requries DMT.
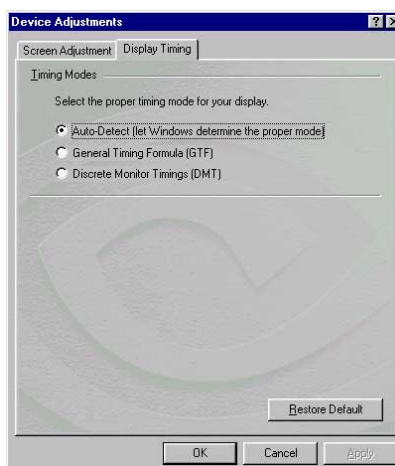
4. Software Reference

Digital Flat Panel

The following options determines the placement of the image on the flat panel display when running at resolutions lower than the maximum resolution supported.

Use display adapter scaling
Adapter automatically scales the appearance of the display on the monitor. (default)

Centered output
Centers the image on the flat panel and does not adjust the scale.

NOTE: This funciton is only available with DVI/2V1D cards.
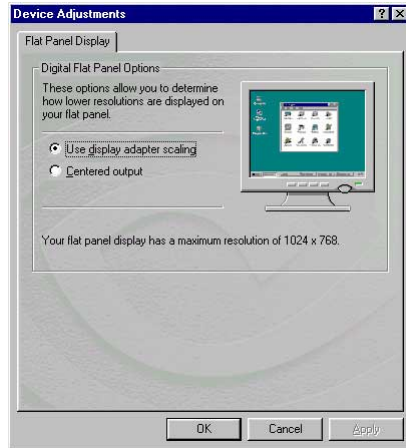
4. Software Reference

TV

Change Format

Opens a window that specifies a particular TV output format.

NOTE: This function is only available with T/Deluxe Combo cards.

Video output format

This field specifies the type of output signal sent to the TV. If the correct connector cable is connected, **S-Video out** will generally provide a higher quality output than **Composite video out**. Specify **Auto-select** to make the system determine the output signal.
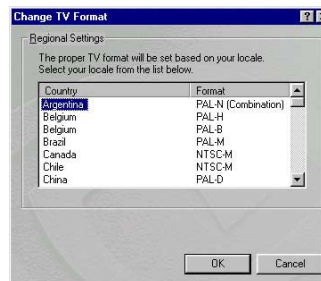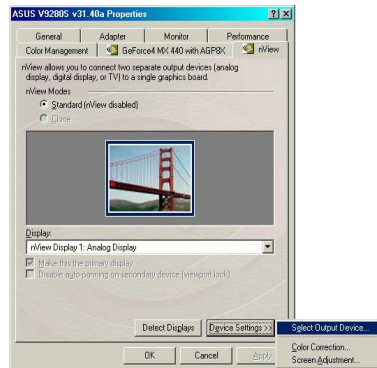
Change TV Format Window

Selects the TV/video output format based on local country standards.

NOTE: If your country is not in the list, find out which type of TV/video output format is most commonly used locally and select it; ie.: PAL-D or NTSC-M.

Device Adjustments

Screen Positioning

Selects the TV/video output format based on the four quadrants indicated by the arrows. **Click** on the **arrows** to reposition output on the TV monitor.

4. Software Reference

Color Correction

This menu enables color adjustments like **brightness**, **contrast**, and **gamma** values for each or all of the RGB colors on the desktop.

Digital Vibrance

This setting controls the color separation and intensity of the Windows desktop.

NOTE: Increasing the levels may result in bold, dynamic visuals with sharp and balanced colors.

Active Color Channel

This setting coordinates all channels at once (**All channels**) or allows for adjustment of individual channels (**Red**, **Green**, or **Blue**).

Brightness / Contrast / Gamma

These sliders help calibrate the visual output of the display card. Changes to color settings are shown immediately on the monitor.

Automatically apply these settings at startup

Selecting this option will automatically restore the color adjustments when Windows is restarted.

NOTE: If the PC is running on a network, the color will be adjusted after you have logged on to Windows.

Custom color settings

This field lists the new settings. These settings can be used to change the appearance of many screen elements simultaneously. Create and/or save current settings, or delete unwanted settings. A setting may be created, saved and reused for special situations.

4. Software Reference

GeForce4

The **GeForce4 Ti 4200-8X** tab displays information about the graphics card, computer system and driver versions; it also accesses extra features and supplies an Internet link for drivers, product updates and news.

Additional Properties

Click on the Additional Properties button to enter five submenus to configure the various functions of this card.
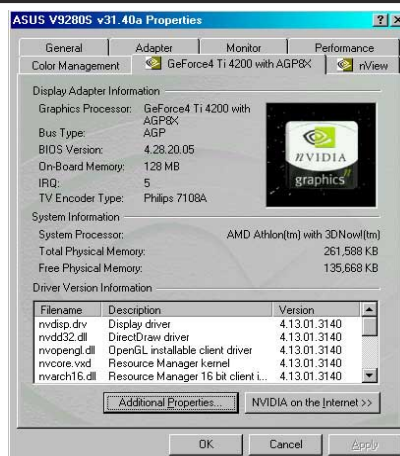
3D Antialiasing Settings

Antialiasing is a technique used to minimize the rough rendering of artifacts, eliminating the "staircase" or "jagged effect" seen along the edges of 3D objects. These controls select the degree to which antialiasing is used in **Direct3D** and **OpenGL** applications.

Allow applications to control the antialiasing mode:
Some 3D applications that support antialiasing automatically optimize control of this mode; it is possible to select the antialiasing mode manually.

Manually Select Antialiasing Mode

Off (no antialiasing): Disables antialiasing in 3D applications. Select Off if you require maximum speed performance in your applications.

2x: Enables antialiasing using the 2x mode. Select this for improved image quality and high performance in 3D applications.

Quincunx Antialiasing™: Enables a patented antialiasing technique available in the GeForce3 GPU series. *Quincunx Antialiasing™* offers the quality of the slower 4x AA mode at very near the performance of the faster 2x AA mode.

4x: Enables the antialiasing using the 4x mode. Select this for the highest possible image quality at the expense of some performance drain in 3D applications.
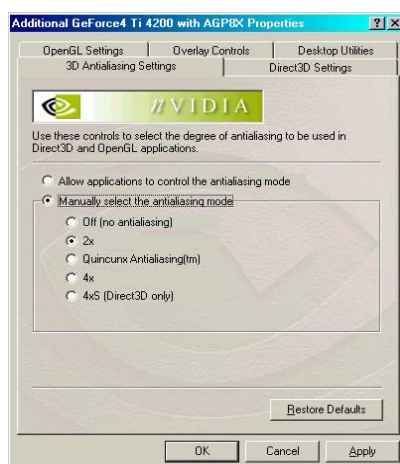
4. Software Reference

Direct3D Settings

Performance and Compatibility Options

Enable fog table emulation

Some older games do not query D3D hardware capabilities correctly and so expect table fog support. Choosing this option will ensure that such games will run properly.

Adjust Z-buffer depth to rendering depth if unequal

This option forces the hardware to automatically adjust the depth of its Z-buffer to the precise depth that the application requests. Keep this option enabled, unless the work absolutely requires a specific Z-buffer depth.

Display logo when running Direct3D applications

This option lets you display the NVDIA logo in the lower corner of the screen while running Direct3D applications.
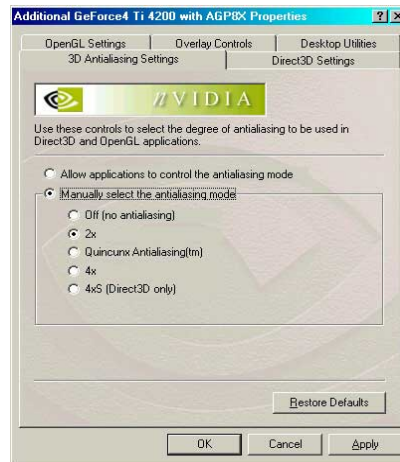
Mipmapping

Mipmap detail level

This option lets you adjust the Level of Detail (LOD) bias for mipmaps. A lower bias provides better image quality while a higher bias augments performance. Choose from five preset bias levels. **Options** are: **Best Image Quality, High Image Quality, Blend, High Performance, Best Performance.**

PCI Texture Memory Size

*NOTE***:** This setting applies only to PCI display adapters or to AGP display adapters running in PCI compatibility mode.

This option sets the amount of system memory for texture storage. Clicking the "up arrow" increases memory size while clicking the "down arrow" decreases the size of system memory used for textures. The maximum amount of system memory for texture storage depends on the amount of physical memory installed on the system.

Custom Direct3D settings

This option lets you create or delete custom settings or "tweaks" you have saved.

4. Software Reference

More Direct3D

Texel Alignment

These values define the position of texel origin. The default values conform to the Direct3D specifications. Some software may expect texel origin to be defined elsewhere. The image quality of such applications will improve if the texel origin is redefined. Dragging the slider leftward positions the texel origin closer to its upper left corner and moving the slider rightward positions it closer to the center.

Range: **0 to 7, default: 3.**

4. Software Reference

OpenGL Settings

Performance and Compatibility Options

Enable buffer region extension

This option permits the drivers to apply the OpenGL extension: GL_KTX_buffer_region.

Allow the dual planes extension to use local video memory

This option permits the use of local video memory when the GL_KTX_buffer_region extension is enabled.

Use fast linear-mipmap-linear filtering

This option permits increased application performance at the expense of some image quality loss. In many cases, the loss of image quality may not be noticeable.

Enable anisotropic filtering

This option allows OpenGL to use anisotropic filtering for improved image quality.

Disable support for enhanced CPU instruction sets

This option disables driver support for enhanced 3D instruction sets by certain CPUs.

Default color depth for textures

This option determines whether textures of a specific color depth should be used by default in OpenGL applications. **Options** are: **Use desktop color depth (default), Always use 16 bpp, and Always use 32 bpp**.

Buffer flipping mode

This setting determines the buffer flipping mode for full-screen OpenGL applications. **Options** are: **Auto-select (default), Use block transfer,** and **Use page flip**.

Vertical sync

This setting specifies how vertical sync is handled in GL. **Options** are: **Always off, Off by default,** and **On by default (default).**

Use up to x MB of system memory for textures in PCI mode

This option sets the amount of system memory for texture storage. Clicking the up arrow increases the memory size while clicking the down arrow decreases the size of system memory for textures. The maximum amount of system memory for texture storage depends on the physical memory installed on your system.

NOTE: This setting applies only to PCI display adapters or to AGP display adapters running in PCI compatibility mode.

Custom OpenGL settings

This option lets you create or delete custom settings or "tweaks" you have saved.
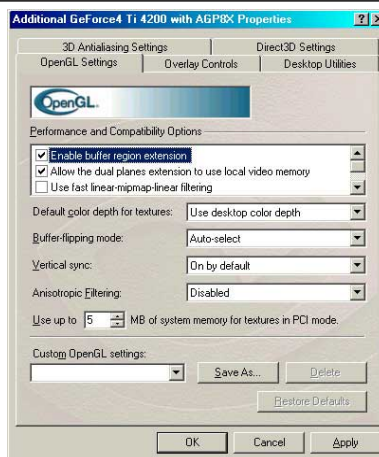
4. Software Reference

Overlay Controls

Brightness / Contrast / Hue / Saturation

Four sliders calibrate the brightness, contrast, hue, and saturation output of the card. Use this to adjust the quality of video or DVD playback on your monitor. Dragging a slider to the left decreases the level; moving to the right increases the level. The number at the right of each slider displays the brightness scale.

Range: **0% to 200%, default: 100%); Contrast (0 to 200%, default: 100%); Hue (-180º to 180º, default: 0º),** and **Saturation value (0% to 200%, default: 100%).**
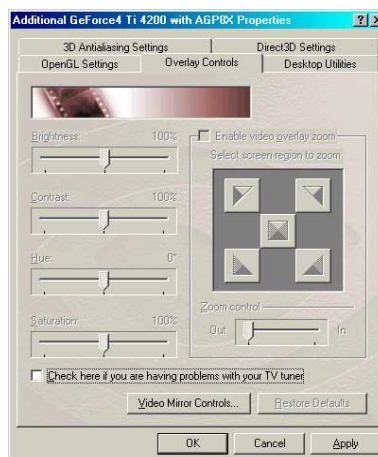
Enable video overlay zoom

This option enables the zoom controls to allow you to zoom in on a specific area of the video output screen.

NOTE: (when enabling overlay zoom)**:** Video players that are not able to detect the presence of Video Mirror may not update the zoom factor immediately while displaying a still frame.

Select screen region to zoom

This option lets you select the region on the video playback to zoom in or out.

Zoom control

This option lets you zoom in or out on the selected portion of the video playback screen.

Check here if you are having problems with your TV tuner

This option, when selected, forces the overlay software to use busmastering. It is recommended that you leave this option cleared unless you experience problems with video playback, such as image corruption or no video image at all.

NOTE: You can only access Overlay Controls while you are playing back videos, for example, .AVI files or DVD movies on your computer.

4. Software Reference

Desktop Utilities

Display the Quick Tweak icon in the taskbar

This option **adds** the NVIDIA Quick Tweak icon to the Windows **taskbar**.

NOTE: In the **TwinView Extended Desktop** mode, an **extra check box and a button** appears on the Desktop Utilities dialog: **Enable Desktop Manager** and **Desktop Manager Configuration.** Click this button to access the *Desktop Display Manager* setup menus.

Using the Quick Tweak icon

Right click the **NVIDIA taskbar icon** to display a **popup menu** of options, including OpenGL, Direct3D or Color settings. The menu also contains items for restoring default settings. **Left click** on the icon twice, and the **Display Properties Menu** appears.

NOTE: An additional option appears on the popup menu to access the *Desktop Display Manager* setup menus.
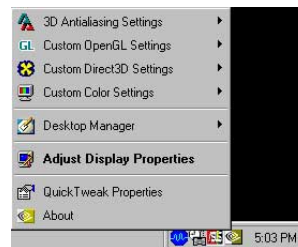
4. Software Reference

Desktop Display Manager

In the TwinView Extended Desktop Mode, this Display Manager sets up the PC to run one or more programs on one or both monitors or desktops. Among others, it also allows you to undertake program-management features, such as restoring application windows to their last-used position.

Setting Up Desktop Display Manager Properties

Make sure the applications the are going to run using the Desktop Display Manager are already open.To set **Display Manager** properties, check the box, **Enable Display Manager** and click the **Desktop Manager Configuration** button. The Desktop Display Manager dialog box opens.

Profiles

Profile adds your display settings to Desktop Display Manager. Click the **New Profile** button on the **Profile** tab to create a new profile. Tailor all your settings in the **Profile** page and then click the **Load Profile** button to complete profile setting. Repeat this step for each program that you want to add to the Desktop Display Manager.
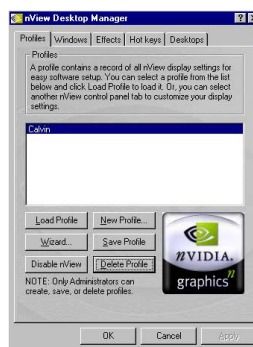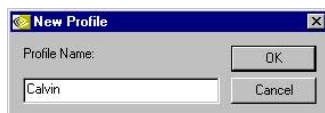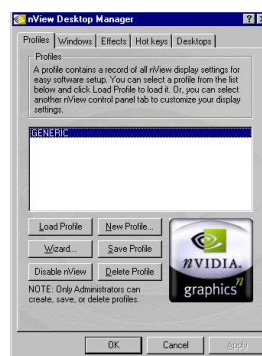
A variety of settings are available in **Desktop Display Manager**. Check: **Always start this application on screen number** selects the display or monitor to use when starting up the program. Check: **Start this application at its last position and size** restarts the program at its last position and sizes it to the same size as it was when last closed.

4. Software Reference

Windows

Use the Windows settings to specify your desired appearance.
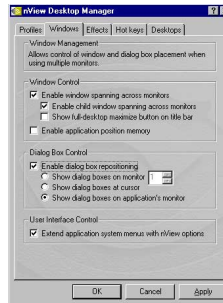
Effects

Windows Drawing Enhancement:

Select **Make windows maximize faster** to speed up Open, Maximize, and Restore windows functions. Select **Make windows transparent when dragged** to make a transparent window and save more space on your desktop (only on Windows 2000/XP).

Zoom settings:

Clicking **Launch Zoom Window** button to open a "Zoom Window" magnifies a selected area of your screen.
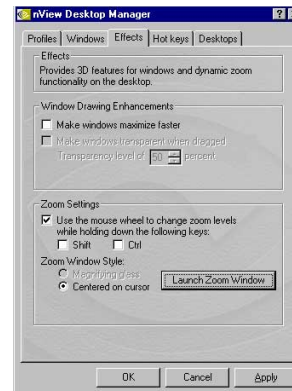
Hot keys

Hightlight an item from **Select an action**, then assign a key or a combination of keys for the action.

Click the **Add** button.

Repeat the process for the other items.

Click **OK** when done.
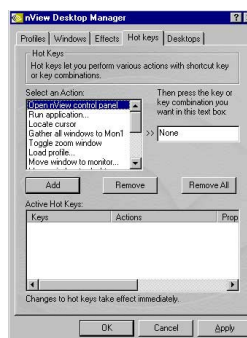
4. Software Reference

Desktops

Under one or multiple monitors, you can create up to 32 different desktops to distribute the open applications among them. This prevents application clutter on your desktop.
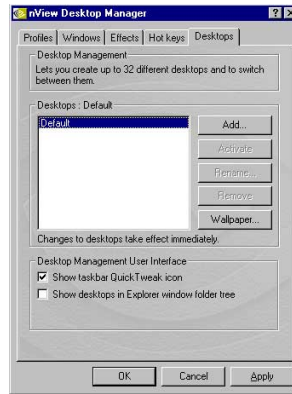
Click the **Show taskbar Quick Tweak icon** to add the NVIDIA Quick Tweak icon to the Windows taskbar.

4. SW Reference
Desktop Utilities

ASUS SmartDoctor *(V9280 Video Suite only)*

ASUS SmartDoctor is designed to satisfy two major goals. One is to monitor the graphic chip status, alerting users about abnormal events, such as fan malfunction or chip overheat. The other, as the name "SmartDoctor" implies, is to "cool" down the graphic chip smartly when it is not necessary for it to be kept running at full speed.

Functions

- Monitors graphic chip temperature, fan speed and voltage
- Notifies users about irregular hardware events, such as temperature overheat, fan malfunction, and out-of-safe-range voltage.
- Forcibly cools down the graphic chip when the graphic chip's temperature is over an acceptable temperature, to protect the graphic chip from overheat damage.
- Cools down the graphic chip's temperature when it is idle, and restores it to its maximum capability once needed, thus smartly extending the graphic chip's lifetime.
- Cools down the GPU's temperature to lengthen GPU lifetime.
- Sets monitor's tolerable range or value to fit system's requirement.
- Speed up system by adjusting core and memory clock slider manually.
- Provide 5 levels of fan speed adjustment.
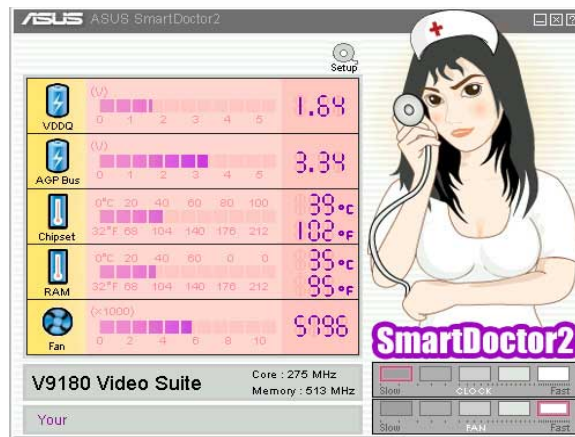
CAUTION: AGP bus VDDQ Voltage and AGP bus 3.3 Voltage should be supplied steadily by your motherboard. Otherwise, your system will crash.

Settings

When you click the **Setup** button, the **Smart Doctor2 Settings** dialog box appears.
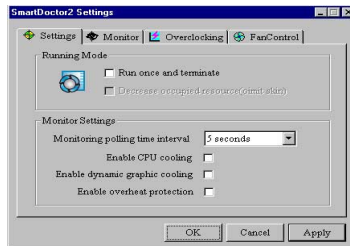
The default setting of SmartDoctor is **keep resident** which means that SmartDoctor will run every time Windows start and check the graphic card's status.

If your graphics card is working properly, SmartDoctor will terminate within 5 seconds.

Dynamic Settings will become available when you uncheck **Run once and terminate.**

- **Monitoring polling time interval** lets you specify the time intervals that SmartDoctor will take to check the graphic chip. The default setting is 5 seconds. You can choose a longer time interval value. SmartDoctor, however, will be less sensitive to graphic chip condition changes.

- **Enable GPU cooling** allows you to enable or disable the GPU cooling option. Enabling GPU cooling option will cool down the GPU's temperature when SmartDoctor detects that the GPU is idle. The GPU temperature will then drop.

  NOTE: If you have already installed any GPU cooling software in your system, you should just choose only one. Running more than one GPU cooling software at the same time is redundant.

  After GPU cooling is enabled, and when you run **System Monitor** in *Programs–Accessories–System Tools* to monitor GPU usage, you will find that GPU usage has reached its maximum, that is, 100%. Do not be alarmed—this is normal.

- **Enable dynamic graphic cooling** allows you to enable or disable the dynamic graphic cooling option. Enabling the graphic cooling option will cool down the graphic chip's temperature when SmartDoctor detects that the graphic chip is idle.

- **Enable overheat protection** lets you forcibly cool down the graphic chip when temperature is over the tolerable range or value.

Click the Monitor tab to specify the alarm settings for voltage, temperature, and fan, that fit your system.
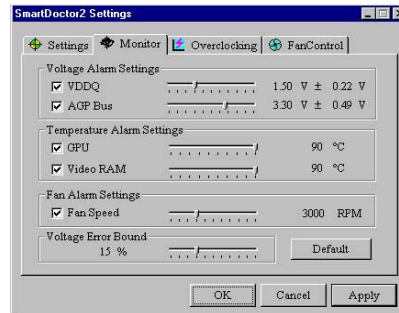
Click the Overclocking tab to manually set overclocking parameters.

To manually adjust the Engine and Memory graphic speeds, uncheck Enable GPU cooling, Enable dynamic graphic cooling and Enable overheat protection found in the Settings tab. Otherwise, you may set the default values by pressing the Default command button.
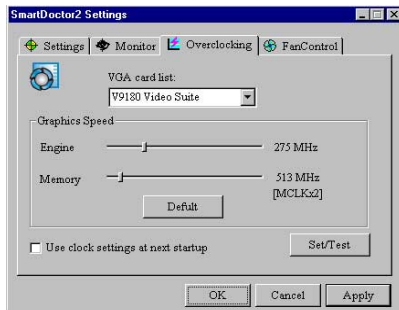
The Set/Test button runs a series of display tests on your graphic card.

Click the Fan Control tab to set smart cooling settings. When the Dynamic Fan Control is enabled, you may individually adjust dynamic fan speed levels or set to default values and Smart Cooling will automatically adjust fan speed to prevent overheating. Also, you may set the fan speed fixed at a desired level.
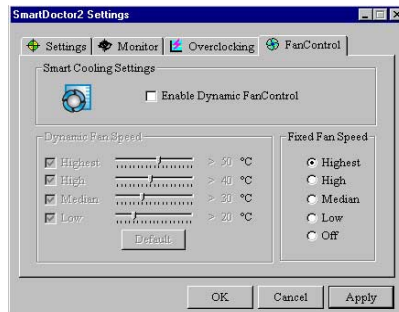
When SmartDoctor senses that something is wrong with your card graphic chip, the message display region will show a detailed description of the error or problem. The component in question will also have a flashing red value. If you enabled overheat protection in **SmartDoctor2 Settings** dialog box, SmartDoctor will cool down the graphic chip in time to protect it from possible overheat damage.
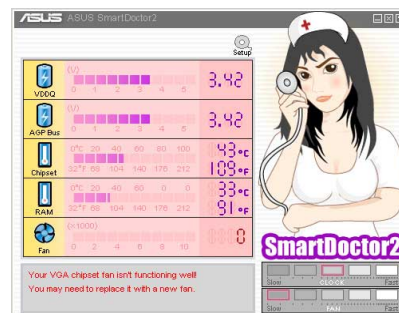
ASUS Tweak Utility

ASUS Tweak is designed to adjust the working frequency of the graphic engine and video memory.

> **Warning!** Use ASUS Tweak Utility with extreme caution and only if you are well acquainted with your display card. Inappropriate use may damage your graphic card, its components and even your system.

Functions

- Timing adjustment includes engine and memory clock.
- 2D Test lets you test your settings.
- Timing test run when clock is larger than default setting and use current setting at next startup.
- GPU Cooling. Tweak automatically reduces the speed of the GPU. When processing the GPU automatically throttles back to reduce component temperatures and increase longevity.
- Dynamic Overclocking. Tweak prevents excessive overclocking that may exhaust and shorten the GPU's life.

> **Note:** Use overclocking only when you need to run high-speed graphic applications.

Advanced Setup

When you click the **Setup** button, the **Smart Doctor2 Settings** dialog box appears.
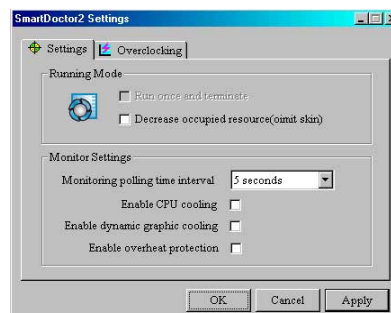
The default setting of ASUS Tweak is **Run and keep resident**, which means that Tweak will run every time Windows start and monitor the graphic card's status or adjust the working frequency.

If your graphics card is working properly, Tweak will terminate within 5 seconds.

- **Monitoring polling time interval** lets you specify the time intervals that Tweak will take to check the graphic chip. The default setting is 5 seconds. You can choose a longer time interval value. Tweak, however, will be less sensitive to graphic chip condition changes.
- **Enable GPU cooling** allows you to enable or disable the GPU cooling option. Enabling GPU cooling option will cool down the GPU's temperature when Tweak detects that the GPU is idle. The GPU temperature will then drop.

  NOTE: If you have already installed any GPU cooling software in your system, you should just choose only one. Running more than one GPU cooling software at the same time is redundant.

  After GPU cooling is enabled, and when you run **System Monitor** in *Programs–Accessories–System Tools* to monitor GPU usage, you will find that GPU usage has reached its maximum, that is, 100%. Do not be alarmed—this is normal.

- **Enable dynamic graphic cooling** allows you to enable or disable the dynamic graphic cooling option. Enabling the graphic cooling option will cool down the graphic chip's temperature when SmartDoctor detects that the graphic chip is idle.
- **Enable overheat protection** lets you forcibly cool down the graphic chip when temperature is over the tolerable range or value.

Click the Overclocking tab to manually set overclocking parameters.

To manually adjust the Engine and Memory graphic speeds, uncheck Enable GPU cooling, Enable dynamic graphic cooling and Enable overheat protection found in the Settings tab. Otherwise, you may set the default values by pressing the Default command button.

ASUS Tweak offers a powerful overclocking capability for your graphic card. It speeds up your system and support multi-cards. You may select the card model installed from the VGA card list combo list box.

The Set/Test button runs a series of display tests on your graphic card.
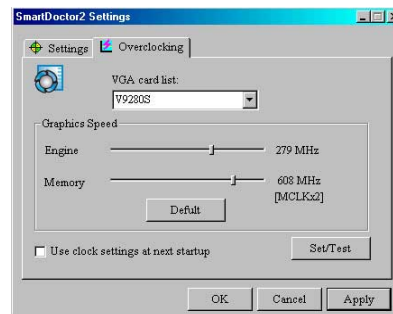
5. Resolution Table

Resolution	Vertical Frequency	Horizontal Frequency	Color Depth 8bpp = 256 colors Standard	16bpp = 65K colors High Color	32bpp = 16.7M colors True Color
640 x 480	60Hz	31.5	√	√	√
	70Hz	34.9	√	√	√
	72Hz	37.9	√	√	√
	75Hz	37.5	√	√	√
	85Hz	43.3	√	√	√
	100Hz	51.0	√	√	√
	120Hz	61.8	√	√	√
	140Hz	72.9	√	√	√
	144Hz	75.2	√	√	√
	150Hz	78.7	√	√	√
	170Hz	90.3	√	√	√
	200Hz	108.0	√	√	√
	240Hz	132.9	√	√	√
800 x 600	60Hz	37.9	√	√	√
	70Hz	43.8	√	√	√
	72Hz	48.2	√	√	√
	75Hz	46.9	√	√	√
	85Hz	53.7	√	√	√
	100Hz	63.7	√	√	√
	120Hz	77.2	√	√	√
	140Hz	91.1	√	√	√
	144Hz	94.0	√	√	√
	170Hz	112.7	√	√	√
	200Hz	135.1	√	√	√
	240Hz	166.2	√	√	√
1024 x 768	60Hz	48.4	√	√	√
	70Hz	56.4	√	√	√
	72Hz	57.5	√	√	√
	75Hz	60.0	√	√	√
	85Hz	68.7	√	√	√
	100Hz	81.7	√	√	√
	120Hz	98.8	√	√	√
	140Hz	116.6	√	√	√
	144Hz	120.2	√	√	√
	150Hz	125.7	√	√	√
	170Hz	144.1	√	√	√
	200Hz	172.8	√	√	√
	240Hz	212.1	√	√	
1152 x 864	60Hz	53.7	√	√	√
	70Hz	62.9	√	√	√
	72Hz	64.9	√	√	√
	75Hz	67.5	√	√	√
	85Hz	77.1	√	√	√
	100Hz	91.3	√	√	√
	120Hz	111.2	√	√	√
	140Hz	131.3	√	√	√
	144Hz	135.2	√	√	
	150Hz	141.4	√	√	√
	170Hz	162.9	√	√	√
	200Hz	194.9	√	√	
1280 x 960	60Hz	60.0	√	√	√
	70Hz	69.9	√	√	√
	72Hz	72.1	√	√	√
	75Hz	75.2	√	√	√
	85Hz	86.0	√	√	√
	100Hz	101.7	√	√	√
	120Hz	123.5	√	√	√
	140Hz	145.1	√	√	√
	144Hz	150.5	√	√	
	150Hz	157.2	√	√	√
	170Hz	179.8	√	√	

5. Resolution Table

Resolution	Vertical Frequency	Horizontal Frequency	Color Depth 8bpp = 256 colors Standard	16bpp = 65K colors High Color	32bpp = 16.7M colors True Color
1280 x 1024	60Hz	64.0	√	√	√
	70Hz	74.6	√	√	√
	72Hz	76.8	√	√	√
	75Hz	80.0	√	√	√
	85Hz	91.3	√	√	√
	100Hz	108.5	√	√	√
	120Hz	131.7	√	√	√
	140Hz	155.9	√	√	√
	144Hz	159.6	√	√	
	150Hz	167.3	√	√	√
	170Hz	191.8	√	√	√
1600 x 900	60Hz	55.9	√	√	√
	70Hz	65.6	√	√	√
	72Hz	67.5	√	√	√
	75Hz	70.5	√	√	√
	85Hz	80.4	√	√	√
	100Hz	95.3	√	√	√
	120Hz	115.4	√	√	√
	140Hz	136.8	√	√	√
	144Hz	140.4	√	√	
	150Hz	146.8	√	√	
1600 x 1200	60Hz	75.0	√	√	√
	70Hz	87.5	√	√	√
	72Hz	90.1	√	√	√
	75Hz	94.0	√	√	√
	85Hz	106.1	√	√	√
	100Hz	127.5	√	√	√
	120Hz	154.5	√	√	
1920 x 1080	60Hz	67.1	√	√	√
	70Hz	78.7	√	√	√
	72Hz	81.1	√	√	√
	75Hz	84.6	√	√	√
	85Hz	96.4	√	√	√
	100Hz	113.9	√	√	
1920 x 1200	60Hz	74.6	√	√	√
	70Hz	87.4	√	√	√
	72Hz	90.0	√	√	√
	75Hz	94.0	√	√	√
	85Hz	106.7	√	√	√
	100Hz	126.7	√	√	
1920 x 1440	60Hz	89.4	√	√	√
	70Hz	104.9	√	√	√
	72Hz	108.5	√	√	
	75Hz	112.5	√	√	√
	85Hz	129.4	√	√	
2048 x 1536	60Hz	95.5	√	√	√
	70Hz	111.9	√	√	
	72Hz	115.3	√	√	
	75Hz	121.3	√	√	

6. Troubleshooting

Description	Recommended Action
After installation and restarting, Windows 95/98 informs me that the display setting is still incorrect.	• Make sure the "Assign IRQ to VGA" option is enabled in the BIOS. • Check if there is enough IRQ for VGA. • Uninstall the driver, restart, and reinstall the driver.
My monitor is not capable of high resolution or refresh rate.	• It depends on the display characteristics of your monitor. Consult your monitor documentation for the proper configuration.
DirectX or the other applications report no AGP memory available.	• Windows 95 is not OSR2.1 or later. • DirectX version is not 6.0 or later. • You have not installed appropriate drivers for the AGP chipset. (e.g. VGARTD.VXD for Intel 440LX). • Incorrect BIOS setting. BIOS must support at least 64MB for AGP aperture size.
Games or applications report "No 3D acceleration hardware found."	• 3D works only in 16- or 32-bit color depth. Switch your color depth display mode to 16-bit (high color) or 32-bit (true color). • Check necessary libraries, such as DirectX or OpenGL. • Try to switch to a lower resolution.
I cannot enable AGP memory or run I-Base test.	• You may be using a motherboard with an Aladdin IV AGPset. To get the best compatibility, the display card uses AGP Bus Master mode instead of AGP execute mode for motherboards using this AGPset.
My MPEG player displays bad quality video clips.	• You must install DirectX 6 or later so that your player can take advantage of the hardware acceleration mode (DirectDraw). • Try to switch to a lower resolution, color depth, or refresh rate. Switching to a lower mode allows your player to use hardware acceleration mode. • Switch dual view mode to VGA or TV mode.
I am using Video Security and it seems my hard disk space is almost exhausted.	• This is a very important issue when you decide to use VideoSecurity with the "never stop" option. You must be aware of the free space of your hard disk—it must be enough for storing temporary files in the current working directory. If disk space is exhausted, VideoSecurity will not store any information and give you a warning message.

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