Vanta 2000 Series

TwiN Texel 3D Graphics Card

USER'S MANUAL

Hardware & Video Drivers

Vanta 2000 / 8MB

USER'S NOTICE

The product name and revision number are both printed on the product itself. Manual revisions are released for each product design represented by the digit before and after the period of the manual revision number. Manual updates are represented by the third digit in the manual revision number.

For previous or updated manuals, BIOS, drivers, or product release information, contact ASUS at http://www.asus.com.tw or through any of the means indicated on the following page.

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Product Name:	**ASUS Vanta 2000 Series**
Manual Revision:	**1.00 E572**
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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 Vanta 2000 TwiN Texel 3D Graphics Card.

Powered by the NVIDIA™ Vanta LT™ 128-bit TwiN Texel, highly integrated 3D graphics processor, the ASUS Vanta 2000 is designed for value-conscious graphics enthusiasts.

Making use of the NVIDIA TNT architecture, the ASUS Vanta 2000 delivers cutting-edge 3D and 2D graphics performance, making it ideal for the current basic desktop PC.

With the ASUS Vanta 2000, you will not only see but also experience dynamic, realistic 3D worlds and characters.

Highlights

- New NVIDIA™ Vanta LT 3D/2D accelerator
- 250 MHz RAMDAC
- Auto-run driver installation
- ASUS innovative and fancy user interface
- High-value software bundle: Drakan™, Rollcage™ and 12 demo game titles

Available Model

ASUS Vanta 2000

- 8MB Frame Buffer
- VGA

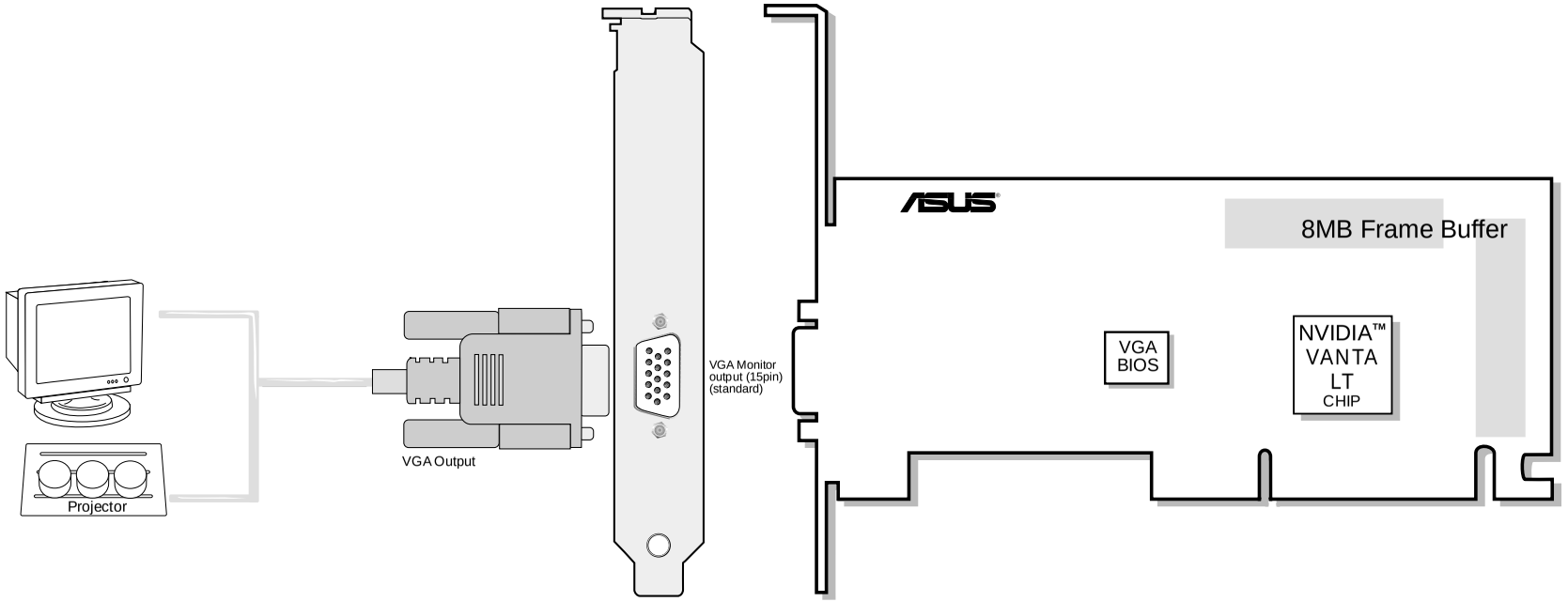
I. Introduction

Features

- High performance true 128-bit, single cycle operation
- 2D/GUI/DirectDraw Acceleration
- Optimized Direct Frame buffer (DFB) access with Write-combining
- Full featured 128-bit BitBLT Engine
- Multi buffering (Double, Triple, Quad buffering) for smooth animation
- DMA Pusher allows the 2D graphics pipeline to load rendering methods optimizing TNT2/host muti-tasking
- Twin-Texel (TNT) 32-bit graphics pipeline, processes 2 pixels-per-clock cycle
- 2 texture mapped, lit pixels per clock
- Single pass multi-texture rendering
- High precision 24-bit or 16-bit floating point Z-buffer
- TextureBlend support examples (Multi-texture, Reflection maps, Bump Map, Detail textures, Texture modulation, Environmental maps, Light maps, Procedural textures)
- Backend blend (Destination, Alpha blending, 32-bit ARGB rendering, Point sampled, bilinear, trilinear and 8-tap anisotropic filtering)
- Per -Pixel perspective texture mapping (Fog, Lighting, Mipmapping)

ASUS Vanta 2000 Layout

8MB Frame Buffer



Item Checklist

- ☑ ASUS Vanta 2000 Graphics Card
- ☑ This User's Manual
- ☑ ASUS Vanta 2000 Series Driver & Utility CD Disc

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 Systems

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 Vanta 2000 series display driver.

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 still using the beta version of Windows 98 and you want to fully take advantage the Direct3D and AGP features, you must upgrade your current Windows 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 Vanta 2000 Series CD to make sure that you have the latest version of VGARTD (*see* **III. 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.

Display Driver Installation

You can use one of the recommended methods to install the display drivers for your ASUS Vanta 2000 series graphics card, depending on your operating system.

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

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* **III. Software Setup | Install GART Driver** and **III. Software Setup | Install DirectX** later in this manual for the setup steps.

Method 1: ASUS Quick Setup Program

NOTE: *See* **III. 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 Install Shell appears. Click **Drivers** and then click **Install Display 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.

Method 2: Display Property Page

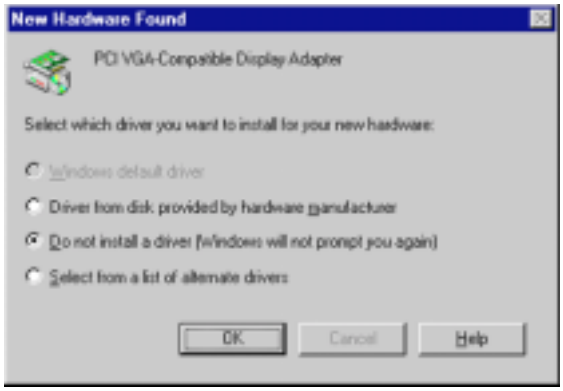
1. Start Windows.
2. Switch display to Windows' Standard Display Adapter (VGA) mode and then restart Windows.
3. Right-click the Windows desktop and click **Properties**.
4. Click the **Settings** tab and then click **Advanced**. The **Standard Display Adapter (VGA) Properties** dialog box appears.
5. 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**.
6. 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 and then proceed to step 9. Otherwise, proceed to the next step.

7. 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**.
8. In the **Folders** box, double-click the WIN9x folder and then select ASUSNV9X.INF in the **File name** box.
9. Click **OK**. A list of video cards appears. Select your VGA card type for your operating system and then click **OK**.
10. 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.
11. Setup will prompt you when it has finished installing all the necessary files on your computer. Click **Finish** to close Setup.
12. When you are returned to the **Standard Display Adapter (VGA) Properties** box, click **Close**. The **Display Properties** box appears. Click **Close**.
13. The system will prompt you to restart your computer. Click **Yes** to restart your computer and to complete Setup.

Method 3: Plug and Play

NOTE: Before proceeding with these steps, replace first your old VGA card with an ASUS Vanta 2000 series graphics card.

1. Start Windows.
2. When Windows detects your ASUS Vanta 2000 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:\WIN9x 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

Method 1: ASUS Quick Setup Program

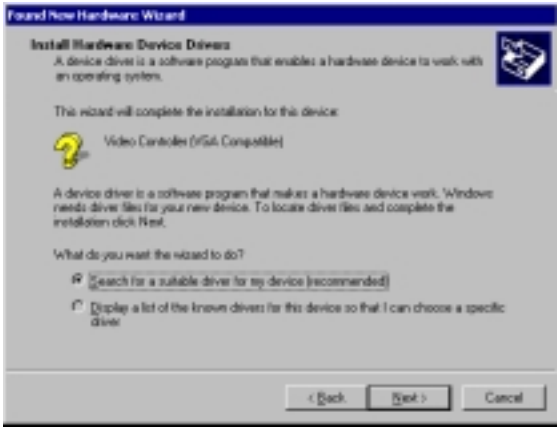
1. Start Windows.
2. When Windows detects your ASUS graphics card, the **Found New Hardware Wizard** dialog box appears.
3. Click **Cancel** to enter the Windows desktop.
4. Insert the CD installation disc into your CD-ROM drive.
5. The ASUS Windows 2000 Install Shell appears. Click **Drivers** and then click **Install Display 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

Method 2: Plug and Play

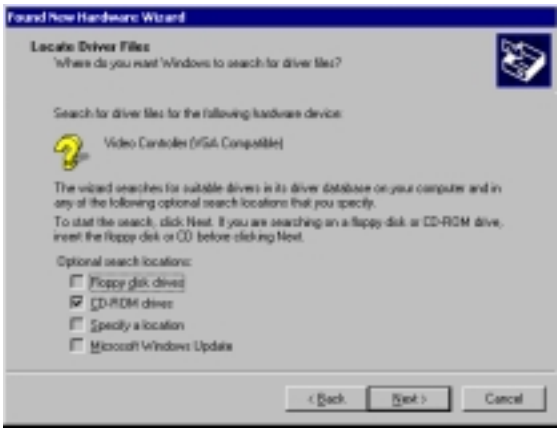
1. Start Windows.
2. When Windows detects your ASUS graphics card, the **Found New Hardware Wizard** dialog box appears.

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



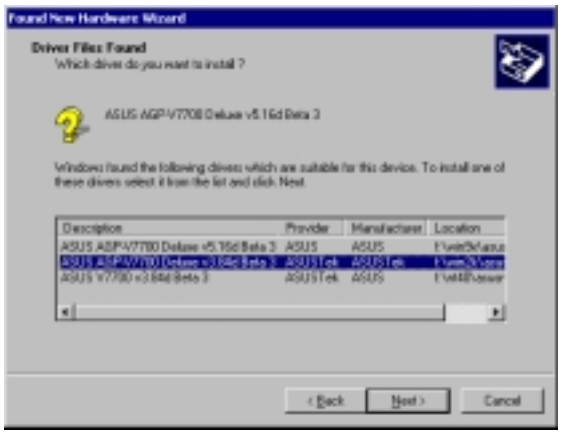
Click **Next** to open the **Locate Driver Files** item of the **Found New Hardware Wizard** dialog box.

5. Insert the CD installation disc into your CD-ROM drive when the **Locate Driver Files** item of the **Found New Hardware Wizard** dialog box appears.
6. Check **CD-ROM drivers**, uncheck all other options and then click **Next** to search for the drivers of your graphics card.



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:\WIN2K 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.

    Click **OK** to restart your computer and to complete 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 Pack3 or later, to take full advantage of your card's AGP features.** (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 VANTA2000 vx.xxx** 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.

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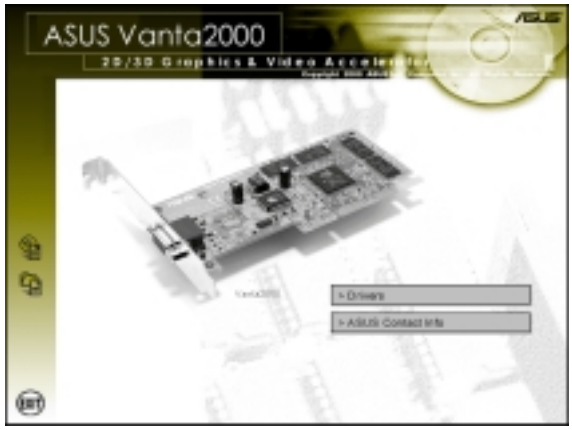
Drivers

Install Display Driver

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. **Windows 98:** The **Drivers** box appears. Click **Install Display Driver** to install all the drivers and utilities into your computer. Setup will install the drivers in the following order: Display Driver (Direct3D and OpenGL Drivers), DirectX runtime libraries, and VGART driver. Just follow the on-screen instructions to complete the installation.

   Windows 2000: Setup will only copy the display drivers.

   Windows NT 4.0: SETUPNT.TXT will appear. Follow the instructions to install the display driver. You may refer to the installation procedures for Windows NT later in this section.

If you prefer to install the drivers individually, follow the steps on the following pages.

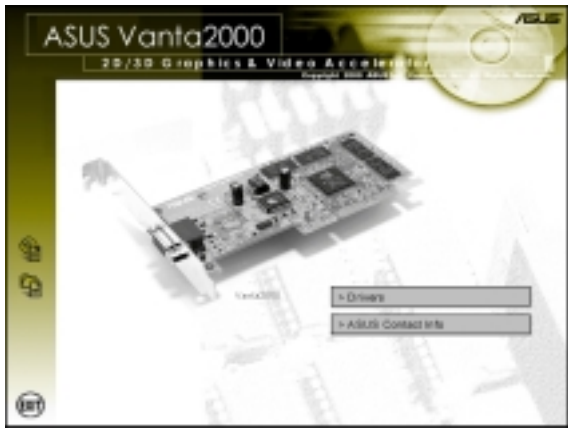
Install DirectX

(Windows 98 only)

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.

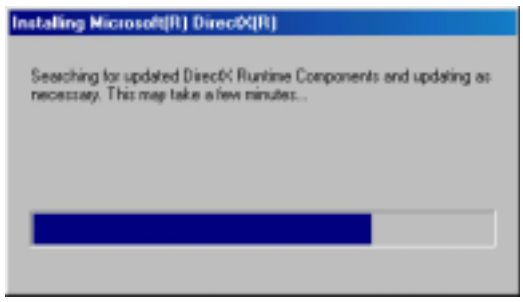
1. Insert the CD installation disc into your CD-ROM drive or double click the CD drive icon in My Computer to bring up the autorun screen or run **Setup.exe** in the root directory of your CD-ROM drive.

   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 7 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 7. Make sure that your applications or games support DirectX 7 before installing the DirectX 7 runtime libraries. DirectX 7 currently cannot be uninstalled by regular means, such as outlined in **III. Software Setup | Uninstall Display Driver**.

Install GART Driver

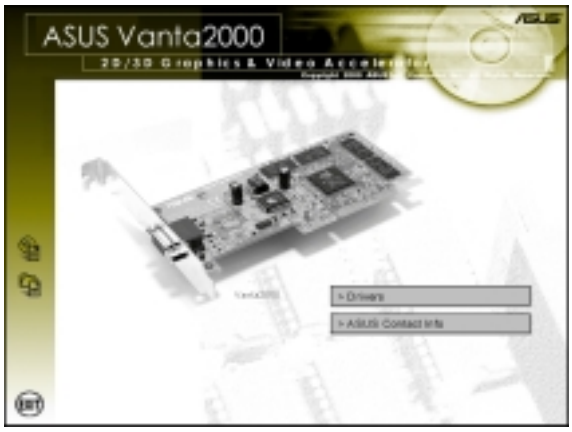
(Windows 98 only)

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.

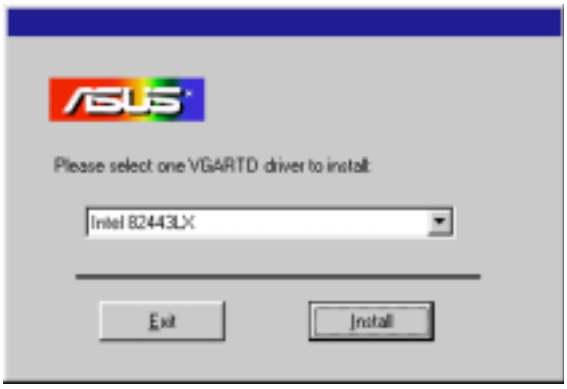
   Click **Drivers**.



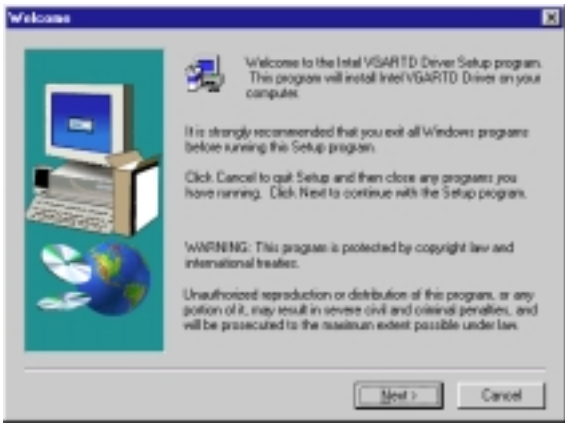
2. The **Drivers** box appears. Click **Install GART Driver** to install AGP support for motherboards with Intel, AMD, VIA, SiS, or ALi chipsets.

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.

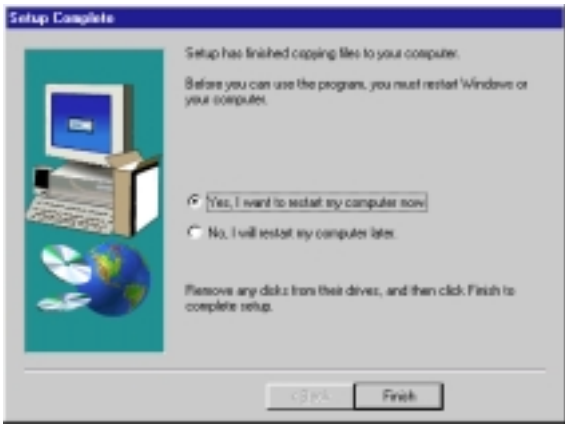
4. If you selected **No...**, on the previous screen before clicking **OK**, you will be presented with a selection of other drivers. Make your driver selection and click **Install**.



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



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



Uninstall Display Driver

If you want to update your display drivers or if you no longer need the Vanta 2000 display drivers, you can use one of the following procedures to completely uninstall the drivers from your system to save disk space.

Windows 98

Method1: Using the Autorun Screen

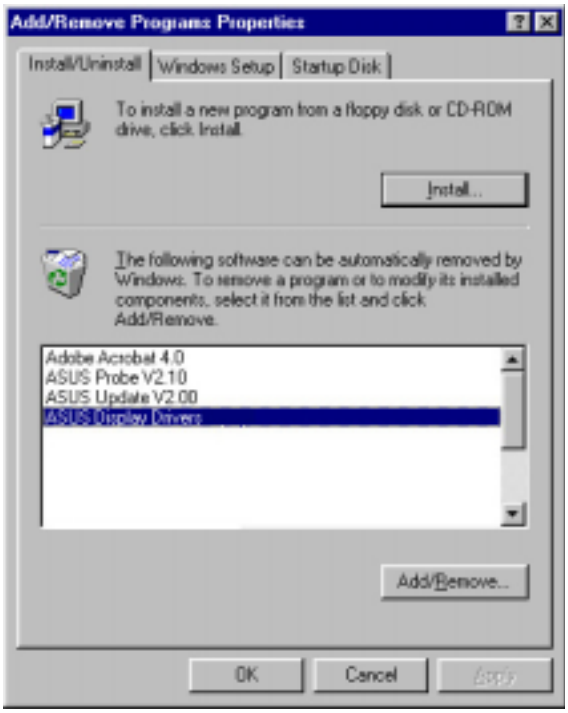
1. Insert the CD installation disc into your CD-ROM drive or double click the CD drive icon in My Computer to bring up the autorun screen or run **Setup.exe** in the root directory of your CD-ROM drive.

   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.

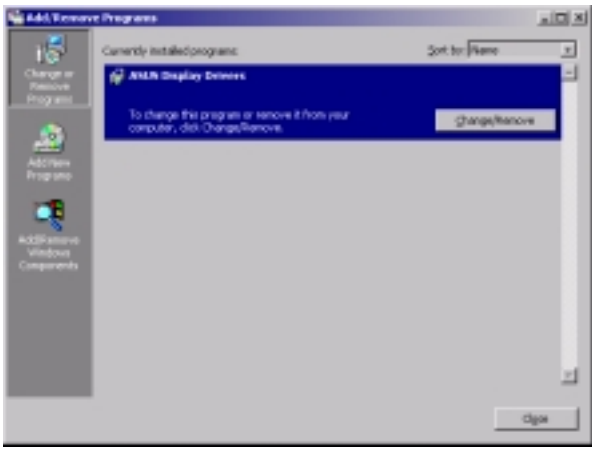


Windows 2000

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 **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.

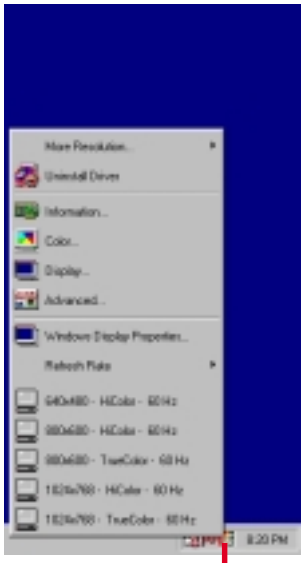
Windows NT 4.0

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.

ASUS Control Panel

(Windows 9x/Windows 2000 only)



After installation of the display drivers, you will find an ASUS icon on the taskbar's status area. Clicking or right-clicking this icon opens the ASUS Control Panel, showing a menu composed of shortcuts of the graphics board's enhanced and other functions.

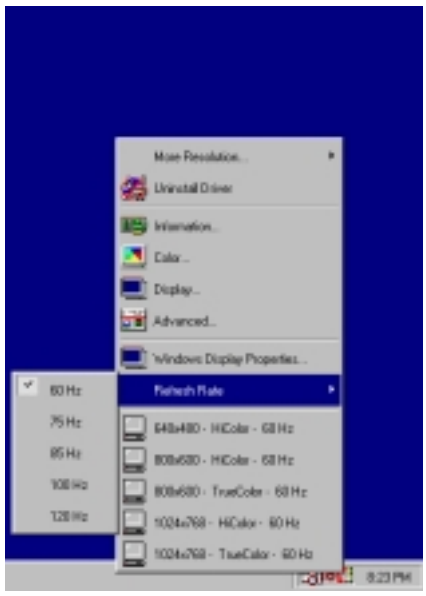
NOTE: Instead of clicking the ASUS Control Panel icon, you may right-click the Windows95/98/2000 desktop, click **Properties**, and then click **Settings**. Under Windows98/2000, click **Advanced** after clicking **Settings**. Click the appropriate tab to change your display settings.

Refresh Rate

Refresh Rate lets you change the refresh rate of your 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.**

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

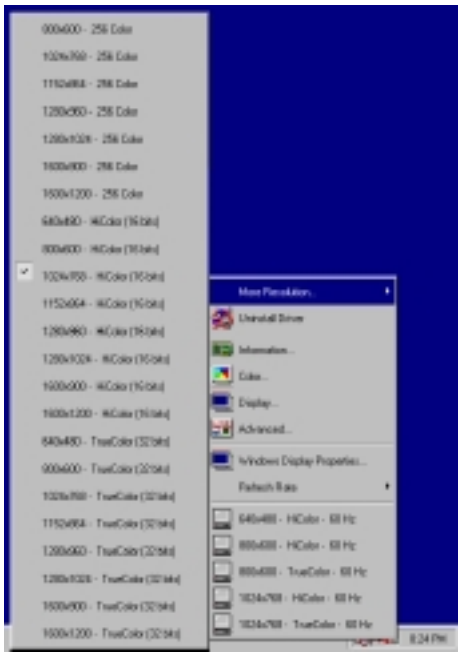


2. The system will prompt you whether you want to keep the setting you just selected. Click **OK** to keep the setting, otherwise, click **Cancel** or press ESC.

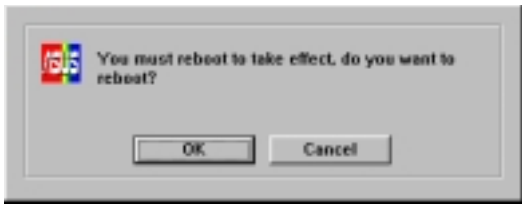
More Resolution

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

1. 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.



WINDOWS95 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 the relevant information about your card. Aside from this, it has links to the ASUSTeK COMPUTER, INC. web site for updated information about the graphics board, latest drivers, and other information.

Color

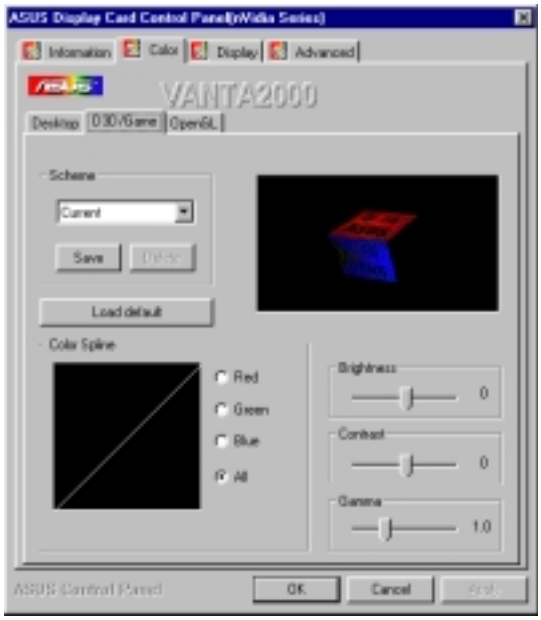
Color allows you to make color adjustments, such as brightness, contrast, and gamma values for each or all of the RGB colors. These adjustments can be made for Desktop, D3D/Game, and OpenGL. The color settings of Desktop, D3D/Game, and OpenGL are not adjustable under 8-bit color depth.

Desktop

Desktop lets you adjust the color of your Windows desktop.

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.

General Functions

Brightness / Contrast / Gamma

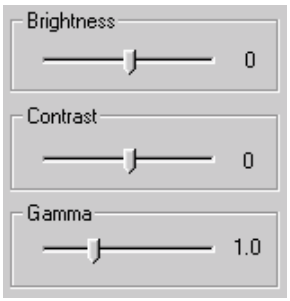
Brightness / **Contrast** / **Gamma** sliders let you calibrate the brightness, contrast, and gamma output of your display card.

Desktop

Changes to your color settings are shown immediately on your monitor. You may change the preview picture by clicking **Load** from the **Desktop** box.

D3D/Game / OpenGL

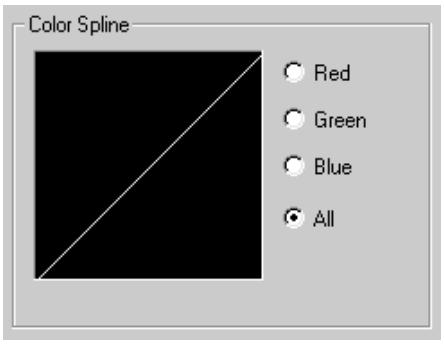
Changes to your color settings are shown immediately on your monitor.



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), or gamma value (0.2 to 3.0, default: 1.0).

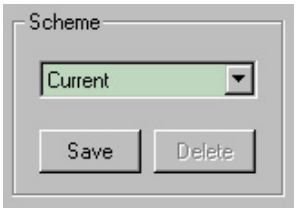
Color Spline

Color Spline shows how each (R, G, or B) or all channels are distributed when you move the Brightness, Contrast, or Gamma slider to make your adjustments. You can adjust all channels at once (**All**) or individual channels (**R**, **G**, or **B**).



Scheme

Scheme lists schemes that you can use to change the appearance of many screen elements simultaneously. You can use existing schemes, or create and save your own scheme by saving your current settings, or delete unwanted schemes. 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.



IV. Software Reference

Important Notes

D3D/Game

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

Display

Display lets you make monitor adjustments, such as position, size, and refresh rate.

WARNING! Adjusting position or size, especially refresh rate 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.**

VGA

Adjustment

Position sets the screen position

Size sets the screen size

Synchronization

Adjusts the synchronization polarity settings

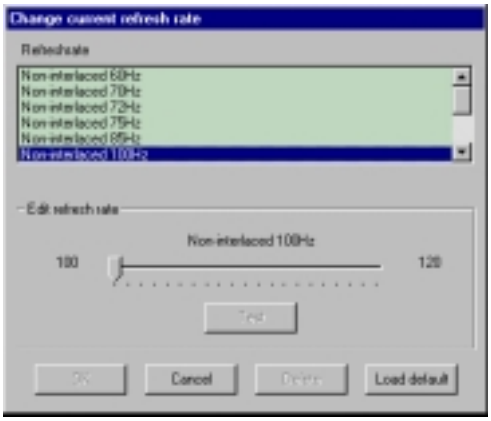
Disable Monitor Check

Lets you disable the specification check of your monitor. That is, you may select all the resolutions and refresh rates that the VGA card can support.

Note: Choosing a resolution or refresh rate beyond the monitor specifications may damage your monitor.

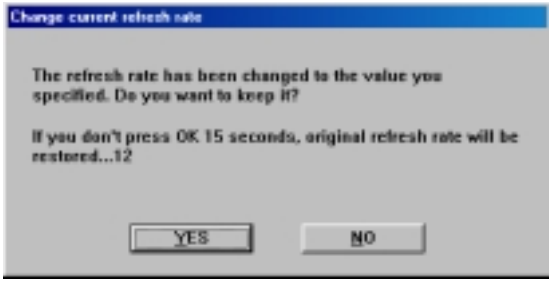
Change current refresh rate (Windows 9x only)

Displays the **Change current refresh rate** box to let you customize a new refresh rate.



To change the current refresh rate

1. Click **Change current refresh rate**.
2. In the **Refresh rate** list under **Change current refresh rate**, click the nearest default refresh rate and then adjust the **Edit refresh rate** slider to the rate you want, click **Test** and then click **YES** when prompted to add the new refresh rate into the list. Otherwise, the original refresh rate will be restored.

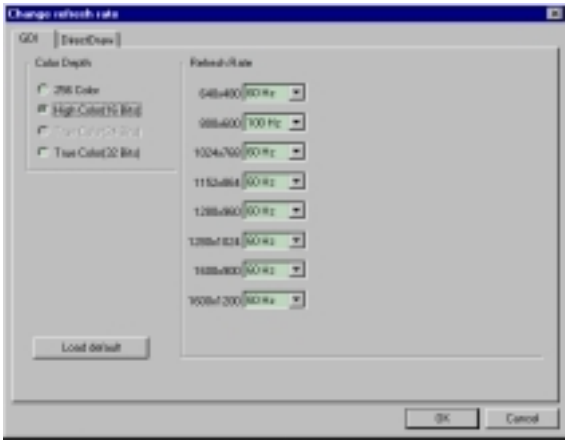


Load default

Restores the settings to their defaults.

Change refresh rate

Displays the **Change refresh rate** box to let you change the refresh rate of any screen resolution.

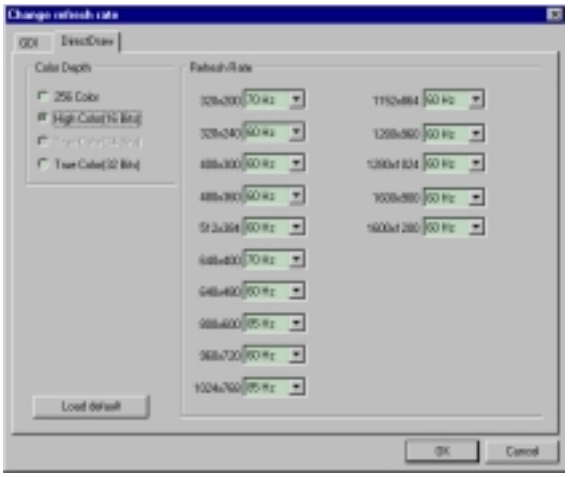


GDI (for Windows 9x only)

GDI lets you change the refresh rate of the Windows desktop.

To change the refresh rate

1. Click **Change refresh rate**.
2. In the **Refresh Rate** list under the **GDI** tab, select the refresh rate you want to use. A **Test** button appears to let you test the selected refresh rate and resolution combination. Click **YES** when prompted whether to keep the new refresh rate. Otherwise, the original refresh rate will be restored.



DirectDraw

DirectDraw lets you change the refresh rate of DirectDraw. It is most useful when you are playing a **full-screen** game.

To change the refresh rate

1. Click **Change refresh rate**.
2. In the **Refresh Rate** list under the **DirectDraw** tab, select the refresh rate you want to use.

TV

NOTE: This tab is not available with the Pure model.

Position
Sets the screen position.

Standard
Sets the TV signal format, for example, PAL or NTSC.

Output type
Displays the connection status of composite and S-Video.

Scan type
Sets the scan type of the TV display.

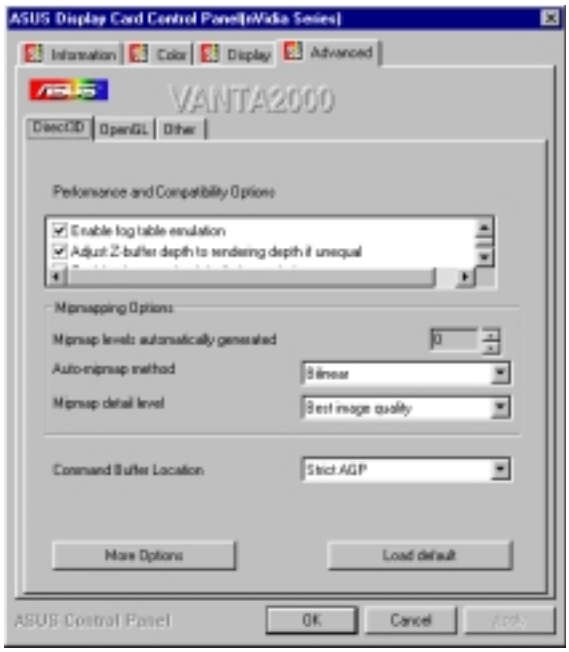
Black Level
Sets the brightness of the TV display.

Contrast
Sets the contrast of the TV display.

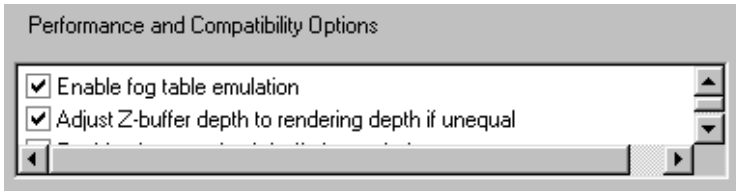
Flicker Filter
Sets the anti-flicker effect.

Advanced

Direct3D



Performance and Compatibility Options



Enable fog table emulation

Some old games do not correctly query the D3D hardware capabilities and 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 depth that the application requests. Normally, you will want to keep this option enabled, unless your work absolutely requires a specific Z-buffer depth.

Enable alternate depth buffering technique

This option lets the hardware use a different mechanism for depth buffering in 16-bit applications. Enabling this setting can produce higher quality rendering of 3D images.

Display logo when running Direct3D applicaitons

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

Mipmapping Options

Mipmap levels automatically generated

This option lets the hardware automatically generate mipmaps to increase the efficiency of texture transfers across the bus and provide higher application performance.

Auto-mipmap method

This option lets you choose the auto-mipmap method. Choose bilinear method for a generally improved performance or anisotropic method for a generally higher quality image.

Mipmap detail level

This option lets you adjust the level of detail bias for mipmaps. A lower bias will increase the application performance.

Command Buffer Location

Command Buffer Location lets you choose the location of the command buffer. Default setting is **Strict AGP**.

Strict AGP

This option forces all the command buffer into the AGP memory. Choose for best performance.

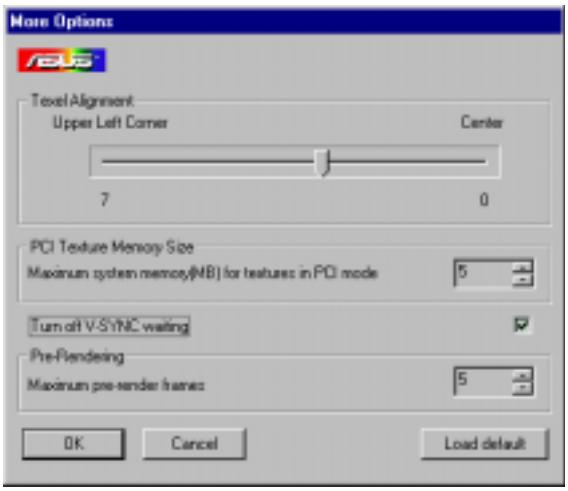
PCI

This option forces the command buffer to be created into the PCI memory. If you are experiencing stability problems with your system (especially with some Socket 7 motherboards), choose this option for better compatibility.

PCI with reduced heap

This option forces the command buffer to be created into the PCI memory. This, however, also reduces the AGP heap size by an amount equal to the size of the command buffer. If you are experiencing stability problems with your system (especially with some Socket 7 motherboards), choose this option for best compatibility. Performance is, however, poorer using this option compared with the **PCI** option.

More Options



Texel Alignment

Changing these values will change where the texel origin is defined. The default values conform to the Direct3D specifications. Some software may expect the texel origin to be defined elsewhere. The image quality of such applications will improve if the texel origin is redefined.

Dragging the slider to the left positions the texel origin toward the upper left corner and to the right positions it toward the center (range: 0 to 7, default: 3).

PCI Texture Memory Size

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

PCI Texture Memory Size lets you set 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.

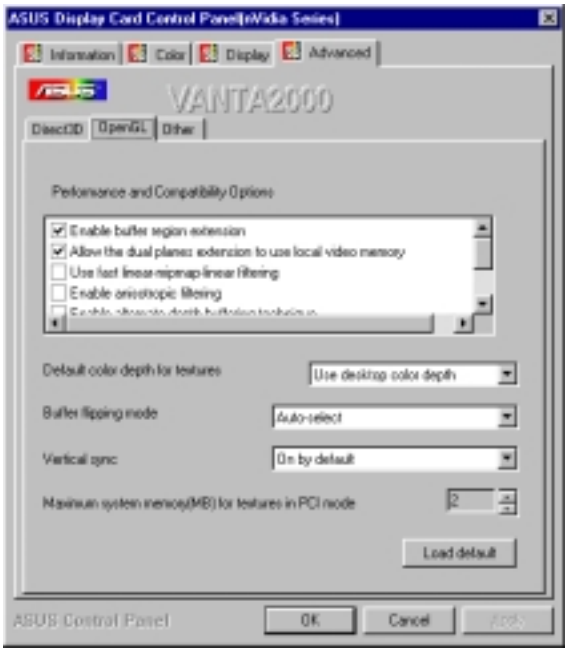
Turn off V-SYNC waiting

Turn off V-SYNC waiting lets an image to be immediately rendered to the screen without waiting to be synchronized with the vertical retrace of the monitor. This option allows for frame rates higher than the refresh rate of your monitor. This may, however, produce visual artifacts and tearing, resulting in reduced image quality.

Pre-Rendering

Maximum pre-render frames allows you to limit the number of frames the CPU can prepare before they are processed by the graphics chip when vertical sync is turned off. Reduce this value if you experience, while playing games, a noticeable delay in the response of the input devices connected to your computer.

OpenGL



Performance and Compatibility Options

Enable buffer region extension

This option allows the drivers to use the OpenGL extension GL_KTX_buffer_region.

Allow the dual planes extension to use local video memory

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

Use fast linear-mipmap-linear filtering

This option allows 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.

Enable alternate depth buffering technique

This option lets the hardware use a different mechanis, for depth buffering in 16-bit applications. Enabling this setting produces higher quality rendering of 3D images.

Disable support for enhanced CPU instruction sets

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

Enable full scene antialiasing

This option lets OpenGL use full scene antialiasing.

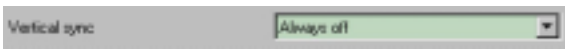
Default color depth for textures

Default color depth for textures 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

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

Vertical sync



Vertical sync lets you specify how vertical sync is handled in OpenGL. Options are **Always off** (default), **Off by default**, **On by default**.

Maximum system memory (MB) for textures in PCI mode

Maximum system memory (MB) for textures in PCI mode lets you set the amount of system memory for texture storage.

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

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.

Other

Monitor Timing

Monitor Timing lets you select the proper timing mode for your monitor.

Auto-Detect (let Windows determine the proper mode)

This option allows Windows to receive the proper timing information directly from the monitor itself. This is the default setting.

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 requires DMT.

V. 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	√	√	

V. 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	√	√	

VI. 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 can't use VideoSecurity with my USB CCD or IEEE 1394 CCD.	• VideoSecurity currently only supports S-Video or Composite CCDs. Any device used must be connected to an ASUS video card.
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.

VI. Troubleshooting

I am using VideoSecurity and I set the password option. I have forgotten my password, though. Is there a way to recover my password?

- The only way to remove password protection is to recall the original password that you assigned. The password protection is still active even when you uninstall VideoSecurity and install a new copy. Make sure that the password that you assigned can be easily remembered. You may write down your password and store it in a safe place.

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- **13.3” or 12.1” TFT Color Display**
- **366MHz to 650MHz+**
- **64MB to 192MB Memory**

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ASUS® Barebone Servers

	Pentium® III Pentium® II Support	Maximum Memory (GB)	Ultra2 SCSI Onboard (Channels)	5.25" Fixed Storage Devices	Hot-Swap Trays
AP100	1 Slot1	1	1	3	0
AP200	2 Slot1	1	1	3	0
AP2000	2 Slot1	1	1	4	3 or 5*
AP3000	2 Xeon™	2	2	4	3 or 5*
AP2300	2 Socket370	4	2 Ultra3	4	3 or 5*
AP6000	2 Slot1	1	1	4	8**
AP8000	2 Xeon™	2	2	4	8**
AP6300	2 Socket370	4	2 Ultra3	4	8**

* Three 1.6-inch or five 1-inch SCA-2 SCSI hard drives

** Eight 1.6-inch or 1-inch SCSI hard drives

Mid-Range Servers
AP6000
AP8000
AP6300

Value Servers
AP2000
AP3000
AP2300

Group Servers
AP100
AP200

Rack Mountable

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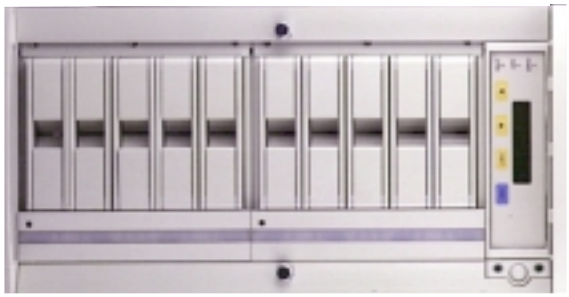
ASUS AR1000 RAID Sub-system

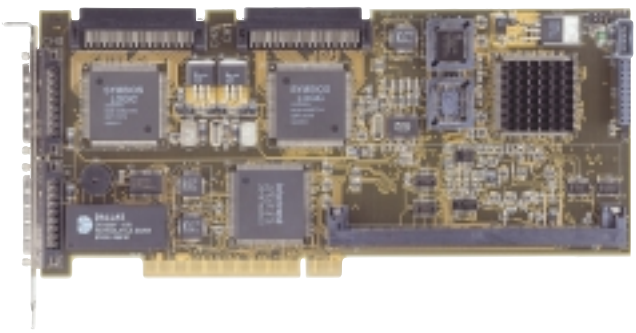
with DA3000 SCSI-to-SCSI RAID Controller

- Supports 5x86 RAID processor and two 72-pin SIMM sockets for up to 128MB cache memory
- Supports three Ultra2 SCSI channels; up to 80MB/sec data transfer rate
- Supports multiple Host/Drive channel capacity
- Redundant controller capacity
- Supports non-RAID, RAID levels 0, 1, 0+1, 3, 5
- On-line failure drive rebuilding
- Automatic rebuilding — supports local/global spare drive
- On-line expansion capacity
- Supports SAF-TE (SCSI Accessed Fault-Tolerant Enclosure) feature
- Provides LCD panel and RS-232 port to configure RAID
- Ten 1.0” or six 1.6” Ultra2 SCSI SCA-2 hot-swappable drive bays
- 19” rack mountable (height: 5U)
- LED for hard disk power and working status
- Two 8cm system fans and four 6cm drive fans
- Aluminum disk arrays for easy heat dissipation
- 350W redundant power supply



ASUS PCI-DA2200 Series SCSI RAID Card

- PCI-DA2200 series support 5x86-133 processor
- One 72-pin SIMM socket supports up to 128MB cache memory
- RAID levels 0, 0+1, 3, 5, non-RAID
- PCI-DA2200A supports Ultra2 SCSI interface and single channel
- PCI-DA2200B supports Ultra2 SCSI interface and dual channels
- Up to 8 logical drives and 8 partitions per logical drive; number of drives for each logical drive has no limitation
- Supports both global and local spare drive operation
- Automatic bad sector reassignment
- Background rebuilding
- PCI rev. 2.1 compliant



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ASUS® 8x DVD-ROM Drive

- Industry-leading performance for even the most demanding applications
- Maximum transfer rate: 8X DVD-ROM / 40X CD-ROM
- High speed digital audio extraction
- Supports UltraDMA/33 transfer mode
- Complies with MPC3 standard
- Supports Multi-Read function

ASUS® Ultra-Fast CD-ROM

- Supports high speed CD-Audio playback
- Supports high speed digital audio extraction
- Supports UltraDMA/33 transfer mode
- Compatible with all CD formats
- Supports multi-read function (CD-R/CD-RW)

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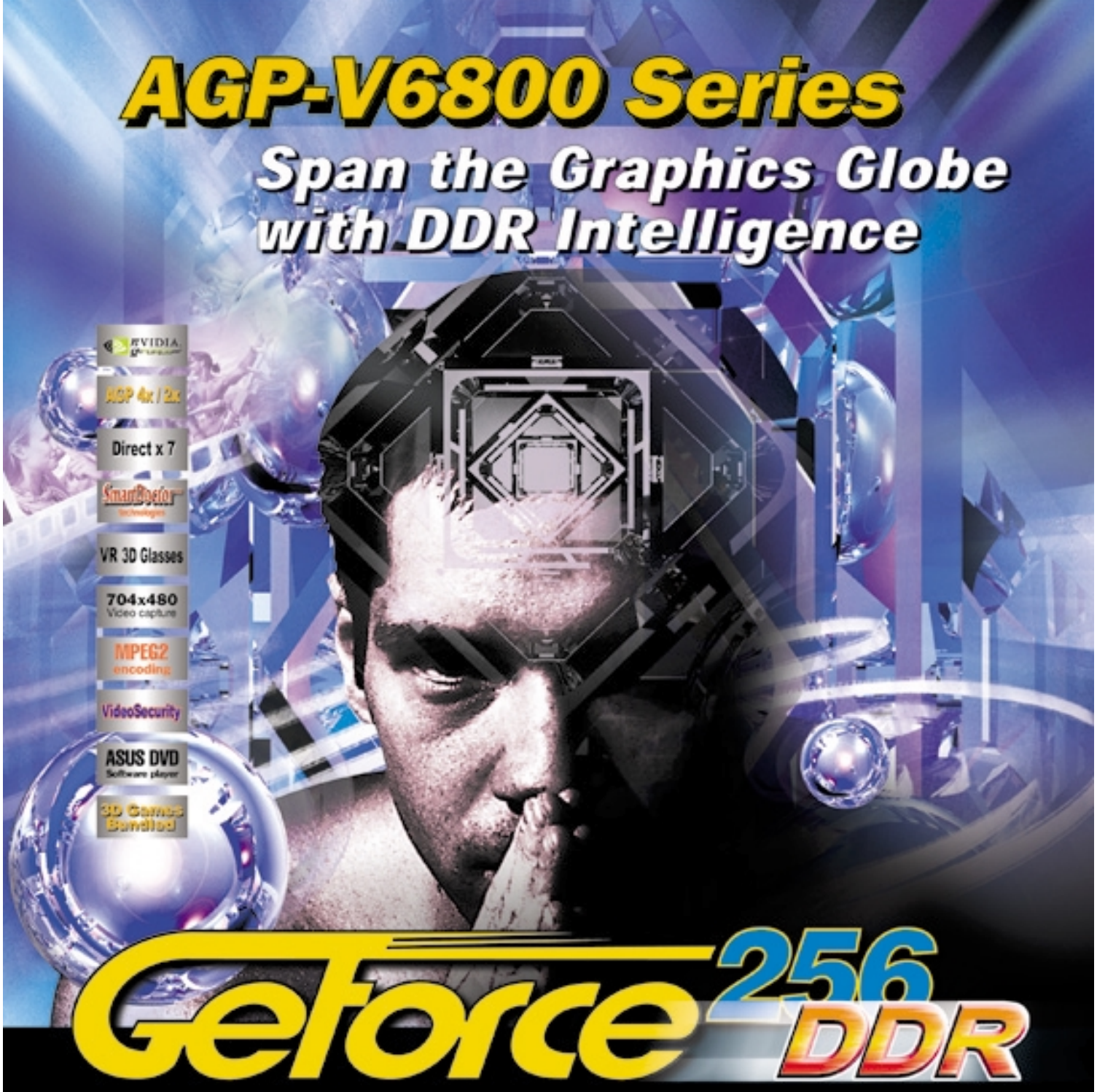
AGP-V6800 Series

Span the Graphics Globe with DDR Intelligence



GeForce 256 DDR

- Powered by the world's latest GeForce256" DDR GPU
- 300MHz DDR video memory – delivers extra performance at high resolutions with 32-bit color
- Optimized for D3D & OpenGL VR game playing and stereoscopic video/picture viewing
- Real-time 30 frames/sec 704x480 video capture
- VideoSecurity – auto-notification system to monitor environmental deviation
- Models available:
  1. AGP-V6800 : GeForce256" DDR, 32MB DDR SGRAM, VGA
  2. AGP-V6800 Deluxe : GeForce256" DDR, 32MB DDR SGRAM, VGA, TV-out, Video-in, VR 3D glasses

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