VGS3D-VID GRAPHICS
2D/3D ACCELERATED CARD

User's Manual

Version 1.0

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Chapter 1

Setting up Your Graphics Card

Congratulations on your purchase of the VGS3D-VID Graphics 2D/3D Accelerated Card!

Based on the Savage3D™ chipset from S3 Inc., the VGS3D-VID's powerful and well-balanced 2D/3D graphics accelerator features high end capabilities such as z-buffering, alpha blending, perspective correction and sophisticated Tri-linear filtering. All these help to deliver the ultimate PC graphics performance in today's graphics-intensive applications and games.

1.1 Minimum System Requirements

- PC-based computer with PentiumII® processor.
- AGP Bus slot.
- 10MB hard disk space (system files and drivers only).
- CD-ROM drive.
- Windows® 95 OSR 2.1, Windows® 98 or Windows NT® 4.0 with Service Pack 3.
- USB upgrade supplement if you are running Windows® 95 OSR 2.0.
- Windows NT® Service Pack 3 or later if you are running Windows NT® 4.0.

1.2 Safety Precaution

- Do not remove your graphics card from its protective bag until you are ready to install it.

- Always try to hold your graphics card by its edges. Avoid touching any electronic components on your graphics card.

- Static electricity can cause permanent damage to your graphics card. To prevent such damage, you must ground yourself while installing the card. You can do this in either of two ways :

  » Use a grounding strap, which is a coiled wire with a clip at one end and an elastic strap at the other. Wear the strap around your wrist and attach the clip to any non-painted metal surface of the computer's chassis.

  » If you do not have a grounding strap, touch any non-painted surface of the computer's chassis before you begin installation, and again every minute or so until the installation is completed.

1.3 Installation Notes

- Computers vary in appearance and layout. Therefore, the installation procedures in this chapter apply generally and you should compare the illustrations here with your computer before you start the graphics card installation.

- A Philips-type screwdriver is required for the graphics card installation.

- Your computer's documentation should come in handy during the graphics card installation. Have it ready by your side when you start the graphics card installation.

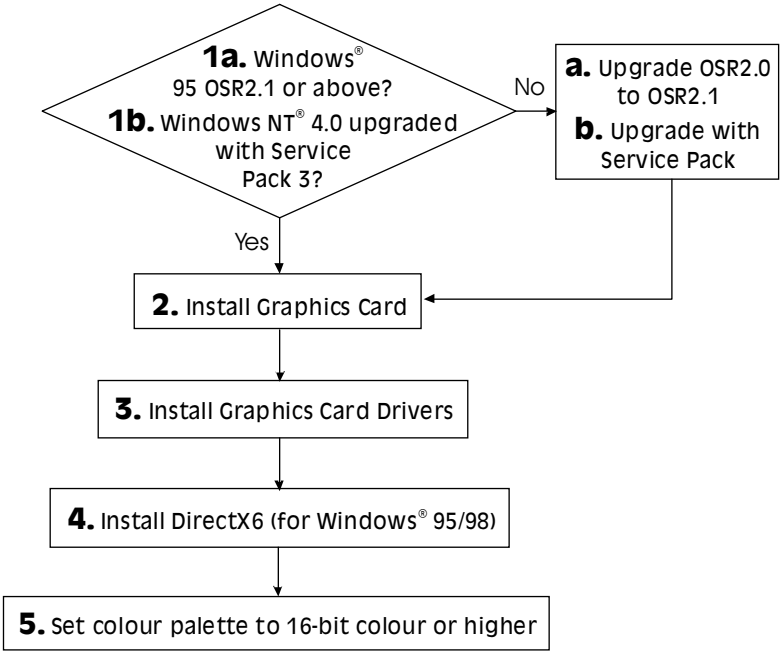
- If you have an existing graphics card (that is non-Plug-and-Play-based) installed in your computer, you must first un-install its drivers before you remove the graphics card. Refer to your existing graphics card documentation for more details on this.

1.4 Installation Procedure

To take advantage of all the features of the AGP graphics card, please check that your system has Windows® 95 OSR2.1 or later versions and DirectX™ 6.0 installed. If you are running Windows NT® 4.0, make sure that it has been upgraded with Service Pack 3.

The following Installation Procedure is recommended:

1. If you are running Windows® 95 OSR 2.0, upgrade it to Windows® 95 OSR 2.1. If you are running Windows NT® 4.0, upgrade it with Service Pack 3.
2. Install the graphics card.
3. Install the graphics card drivers from the Installation CD.
4. Install DirectX™ 6 (*for Windows® 95/98 only*).
5. Set the colour palette from the **Display Properties, Settings** tab to 16-bit or higher in order to reveal the **S3 Gamma** tab.



1.5 Upgrading Windows® 95 OSR2.0 to OSR2.1

To upgrade from OSR2.0 to OSR2.1, first make sure you have OSR2.0 installed. By installing the USB upgrade, Windows® 95 OSR2.0 will be upgraded to OSR2.1.

1.6 Upgrading Windows NT® 4.0 with Service Pack 3

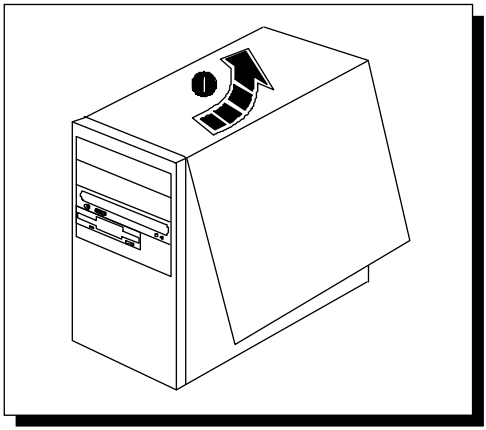
If you are using Windows NT® Service Pack 1 or 2, upgrade to Service Pack 3 before installing the card.

1.7 Installing the Graphics Card

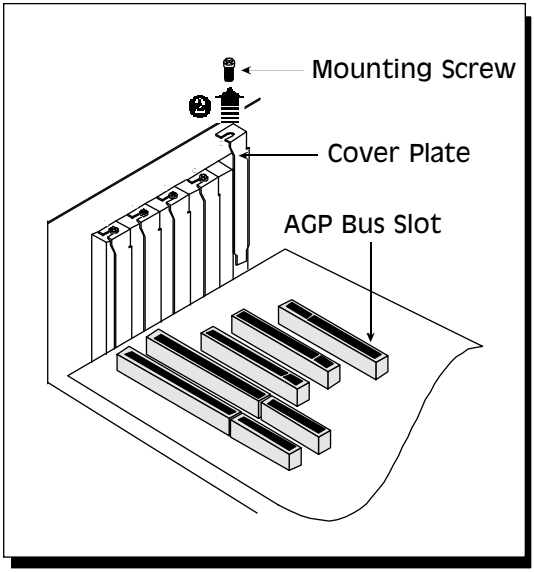
You need to remove any existing graphics card installed in your computer. Note that if the graphics card is non-plug-and-play-based, you need to un-install it's drivers before you remove it. Check your existing graphics card documentation for details on this.

Remember to switch off your computer and any connected devices before starting with the installation of your graphics card.

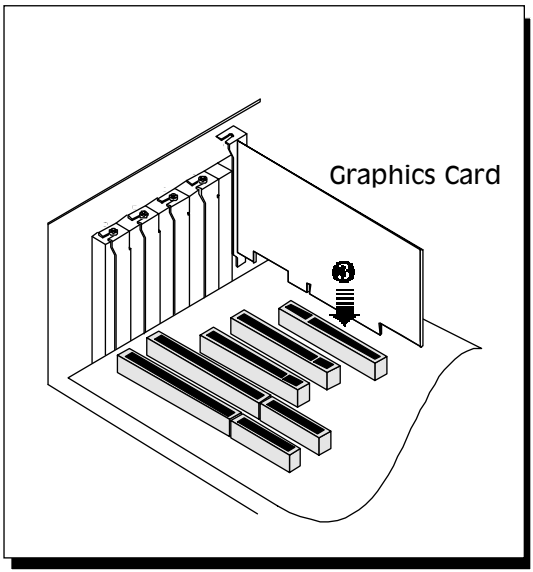
1. Remove your computer's chassis cover and set it aside, somewhere out of your way.

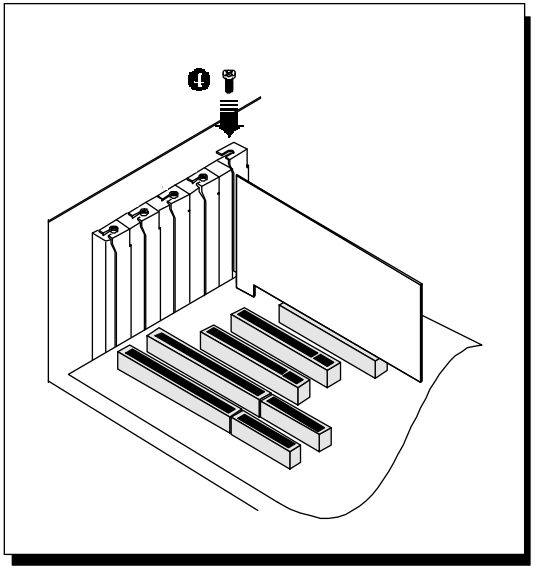


2. Remove the cover plate of the AGP Bus slot. Keep the mounting screw to secure your graphics card later.

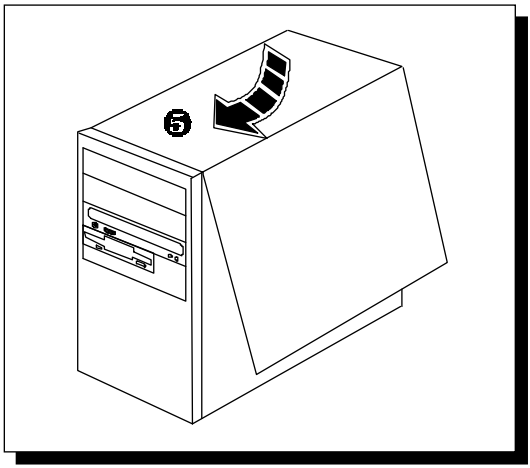


3. Align your graphics card with the AGP Bus slot and firmly push it into the slot. If the card cannot be slide in, do not force it. Make sure the graphics card is lined up properly and try again.





4. Secure your graphics card to the computer chassis with a mounting screw.

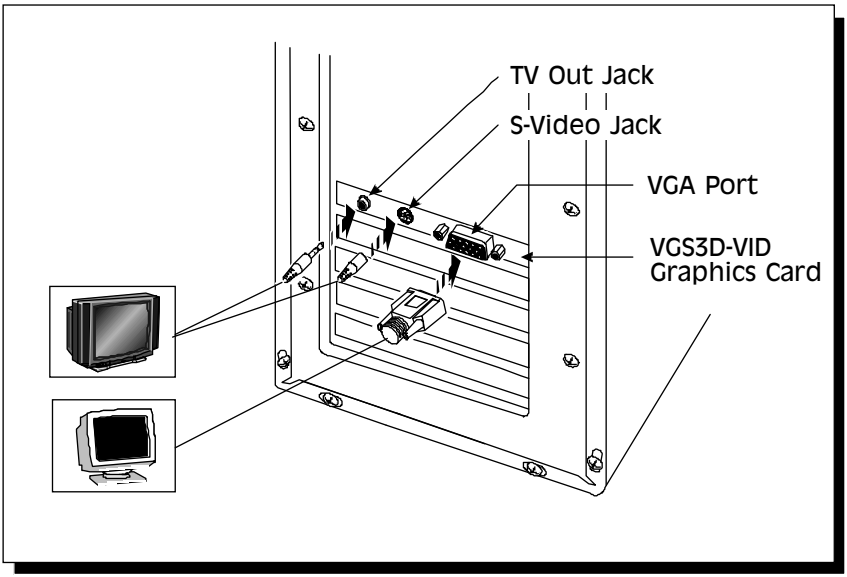


5. Replace your computer's chassis cover.

1.8 Connecting the Graphics Card

1. Plug your standard 15-pin male monitor cable into the VGA port.

   The VGS3D-VID model supports both Composite Video (CVBS) and S-Video (Y/C). If your TV is equipped with an **S-Video Jack**, it is recommended that an S-video cable be connected for better resolution.



   Connect one end of the S-Video cable to the S-Video Jack of the graphics card and the other end to the S-Video In of a TV set. Otherwise, connect one end of the RCA-type cable to the **TV Out Jack** of the graphics card and the other end to the Video In of a TV.

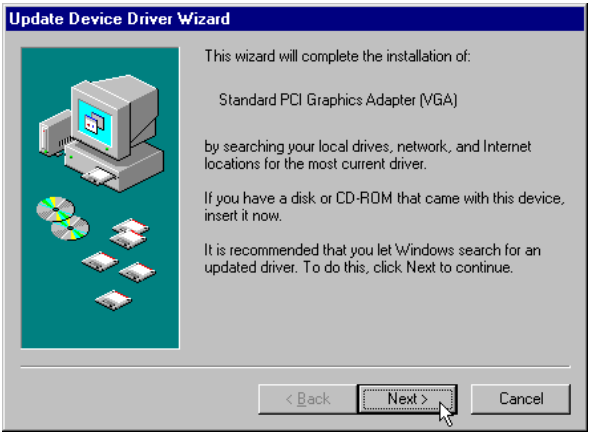
Chapter 2

Installing the Graphics Card Drivers

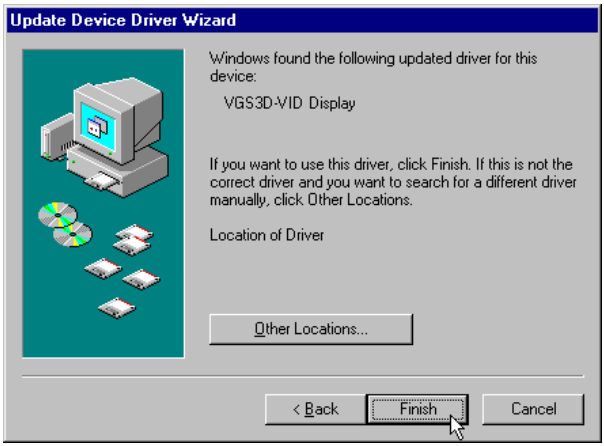
To take advantage of all the features of the AGP graphics card, please check that your system has Windows® 95 OSR2.1 or later versions and DirectX™ 6.0 installed. If you are running Windows NT® 4.0, make sure that it has been upgraded with Service Pack 3 or later.

2.1 Installing the Drivers in Windows® 95

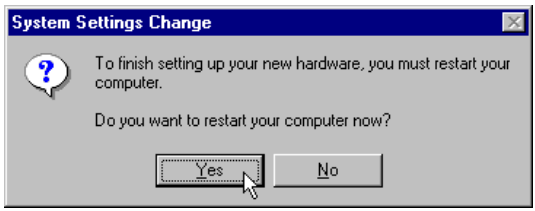
1. Turn on your computer to start Windows® 95. Windows® 95 will detect the newly-installed graphics card and an **Update Device Driver Wizard** window will appear. Place the **Installation Disk** on the CD-ROM drive and click **Next**.



2. Allow the system to search for an updated driver and click **Finish** to use the driver found.

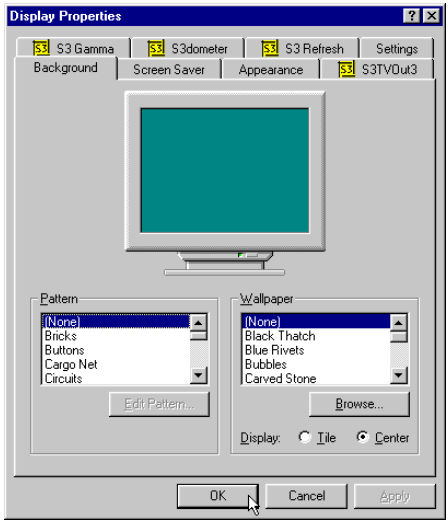


3. When prompted to restart the system, click **Yes** to restart. This is to ensure that the new graphics settings take effect.



4. After restarting, a program folder called "VGS3D-VID Information" will be created. It provides a link to the User's Manual, a list of FAQs and the Readme.txt file. In order to read the User's Manual, Acrobat Reader is required. Install Acrobat Reader first if you do not have the program.

5. From the **Start** button on the taskbar, click **Settings** and choose **Control Panel**. Double-click the **Display** icon. Four tabs (S3 Gamma, S3dometer, S3 Refresh and S3TVOut3) are added to the Display Properties window. If you do not see the S3 Gamma tab, click the **Settings** tab and change the Colour Palette to 16-bit or higher. Refer to the chapter on *Adjusting the Graphics Card's Display Properties* for more details.



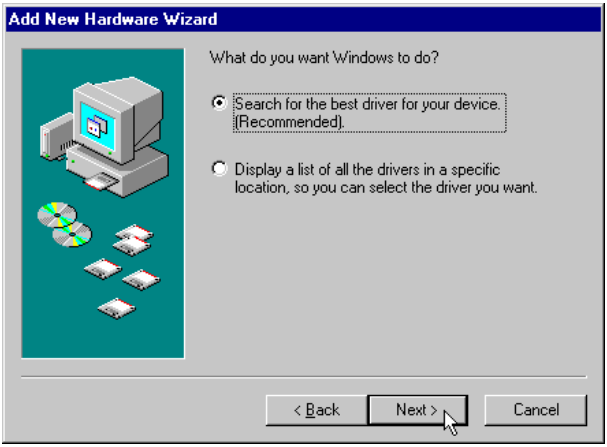
Please proceed to install DirectX™ 6.0.

2.2 Installing the Drivers in Windows® 98

1. Turn on your computer to start Windows® 98. Windows® 98 detects the newly-installed graphics card. Click **Next** to continue.

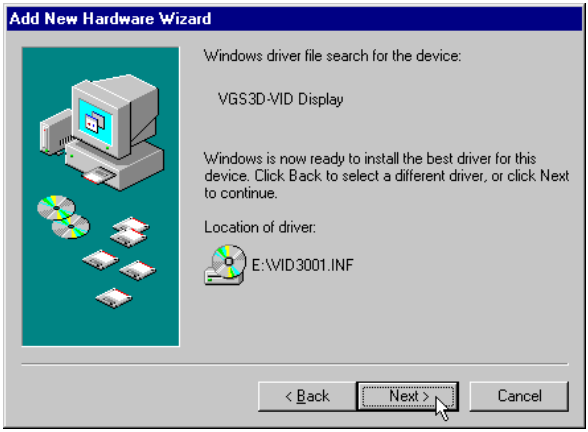
2. Place the **Installation Disk** into the CD-ROM drive.

3. Select the **Search for the best driver for your device. (Recommended)** option and click **Next** to continue.

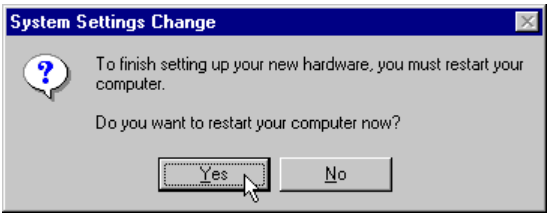


4. Enable the **CD-ROM drive** selection to direct Windows to search for the drivers on the installation disk. Click **Next** to continue.

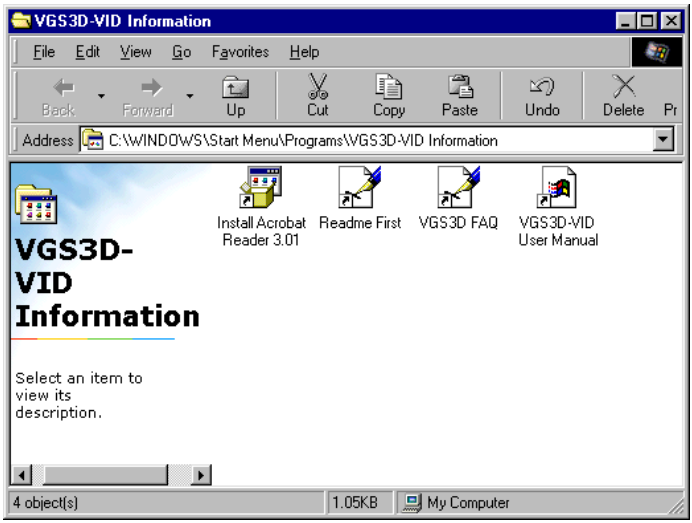
5. Windows will prompt that it is ready to install the drivers. Click **Next** and then **Finish** to complete the installation of the drivers.



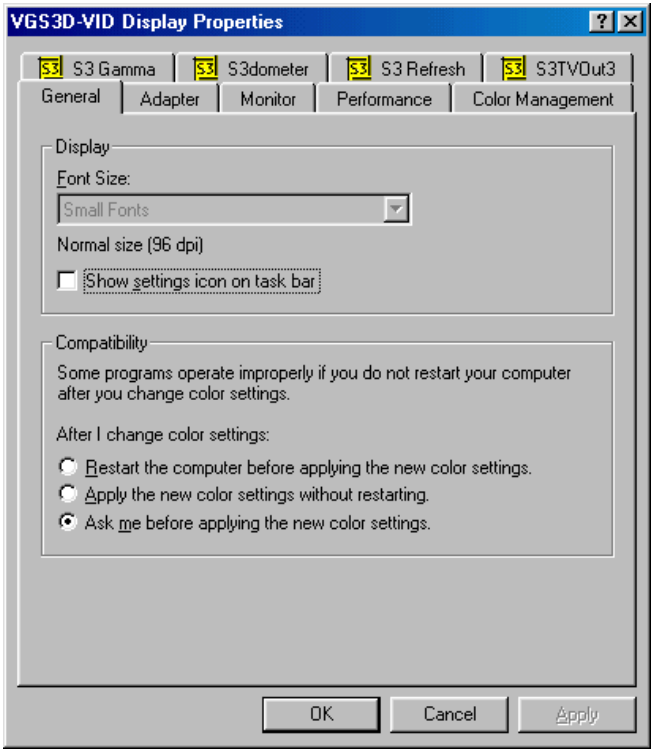
6. When prompted to restart the system, click **Yes**. This is to ensure that the new graphics settings take effect.



7. After restarting, a program folder called "VGS3D-VID Information" will be created. It provides a link to the User's Manual, a list of FAQs and the Readme.txt file. In order to read the User's Manual, Acrobat Reader is required. Install Acrobat Reader first if you do not have the program.



8. From the **Start** button on the taskbar, click **Settings** and choose **Control Panel**. Double-click the **Display** icon. Select the **Settings** tab and make sure that the Colour Palette is set to 16-bit or higher. Click the **Advanced...** button. Four tabs (S3 Gamma, S3dometer, S3 Refresh and S3TVOut3) are added to the Display Properties window.



Refer to the chapter on *Adjusting the Graphics Card's Display Properties* for more details.

Please proceed to install DirectX™ 6.0.

2.3 Installing DirectX™ 6.0 in Windows® 95/98

1. Place the **Installation Disk** onto the CD-ROM drive.
2. In Windows® 95/98, click the **Start** button and then **Run**.
3. In the text box, type "*D:\Directx6\directx\dxsetup.exe*" (where D is the letter of your CD-ROM drive) and click **OK**.
4. A **DirectX(R) Setup** window appears. Make sure that under *Options*, **Direct-3D Hardware Acceleration Enabled** is checked. Click **Reinstall DirectX**.
5. Follow all on-screen instructions to complete the installation of DirectX.

Please proceed to the next chapter on testing the card.

2.4 Installing the Drivers in Windows NT® 4.0

1. Start Windows NT® 4.0.
2. Place the **Installation Disk** in the CD-ROM drive.
3. From the Windows NT® taskbar, click the **Start** button and then select **Settings, Control Panel**.
4. Double-click the **Display** icon.
5. Click the **Settings** tab and then click the **Display Type** button.
6. Click the **Change** button and a **Change Properties** window appears.
7. Place the **Installation Disk** into the CD-ROM drive and click **Have Disk**. The system will locate the driver.
8. Click **OK** twice to finish the installation of the drivers.

Chapter 3

Testing the Graphics Card in Windows® 95/98

1. From the Windows® 95/98 taskbar, click the **Start** button and then select **Settings** and **Control Panel**.

2. Double-click the **System** icon.

3. A **System Properties** window appears. Click the **Device Manager** tab.

4. Double-click on the **Display adapters** to reveal the *VGS3D-VID* graphics card. Double-click on it.

5. A **VGS3D-VID Properties** window appears. Under the **General** tab, check that the *Device Status* has the message: "This device is working properly". This means that your graphics card had been installed properly.

Chapter 4

Adjusting the Graphics Card's Display Properties

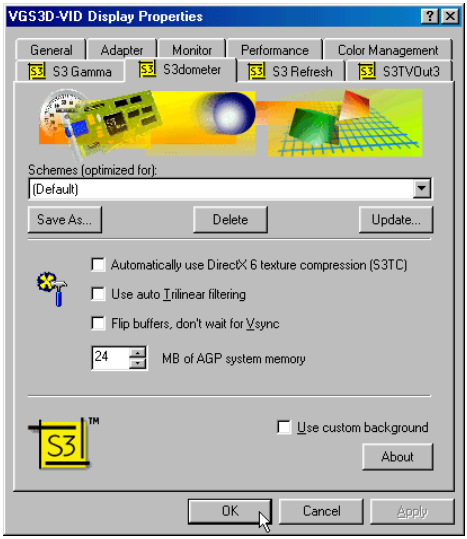
When the drivers have been successfully installed, you can change the display resolution, color and other settings (Windows® 95/98 only). Other than the information in this User's Manual, more details can be obtained by clicking on the [?] button at the top-right of the ***Display Properties*** *window and then clicking on the section you wish to know more about.*

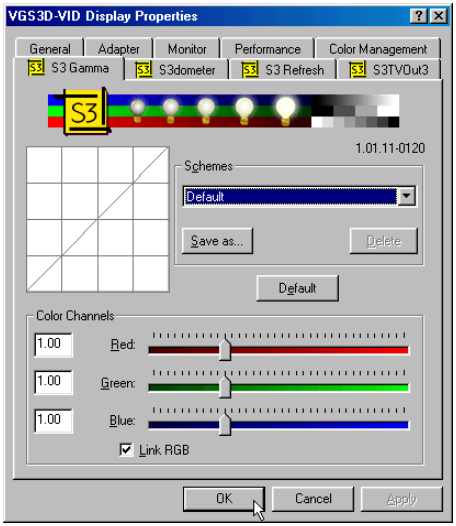
1. Double-click the **Display** icon from the **Control Panel**. The **Display Properties** window appears.

2. Click the **S3dometer** tab.

   The S3dometer allows the user to choose whether to automate tasks such as DirectX™ 6 texture compression, trilinear filtering and flip buffers.

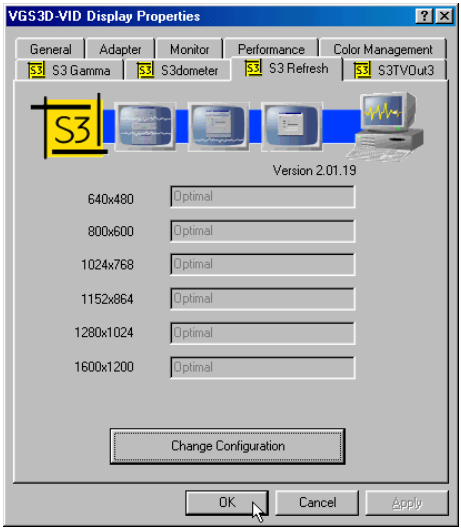
   You can also specify how much memory the system should use for AGP.





3. Click the **S3 Gamma** tab.

   The red, green and blue *Color Channels* can be adjusted to optimise the color display when running different games/ applications. By checking the *Link RGB* check-box, all three colors can be adjusted simultaneously. After setting a color scheme, it can be saved for future use.



4. Click the **S3 Refresh** tab.

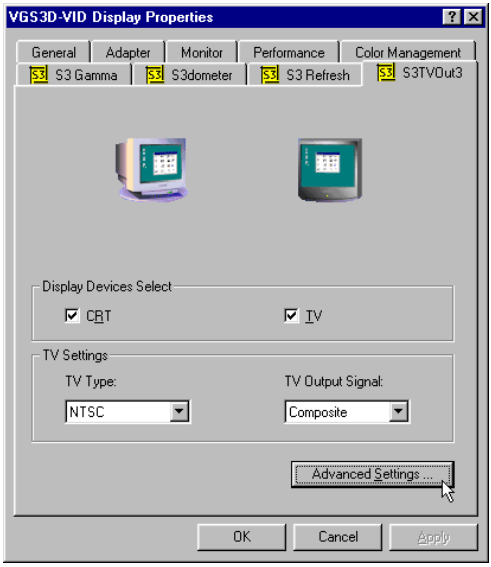
   To change the refresh rate for each resolution, click the **Change Configuration** button. A refresh rate of more than 60Hz is recommended to prevent flickering.

5. Click the **S3TVOut3** tab. The following options of *Display Devices* are available for selection: CRT (Monitor) and TV.

   Check the TV check-box if you wish to output to TV.

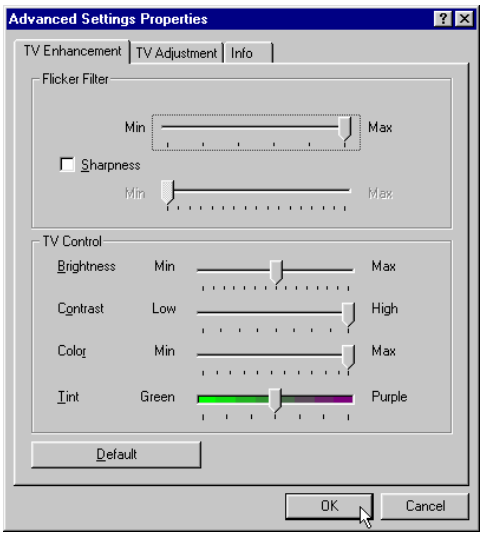
   Select the type of TV system used in your country under the *TV Type*.

   Select the *TV Output Signal* depending on whether you connect to the TV using a RCA-type cable (composite) or an S-video cable. Click **OK**.

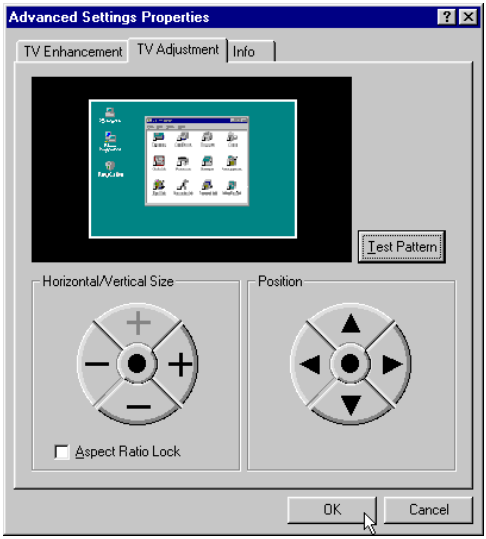


In order to view the output on TV, the resolution has to be set to 640x480 pixels.

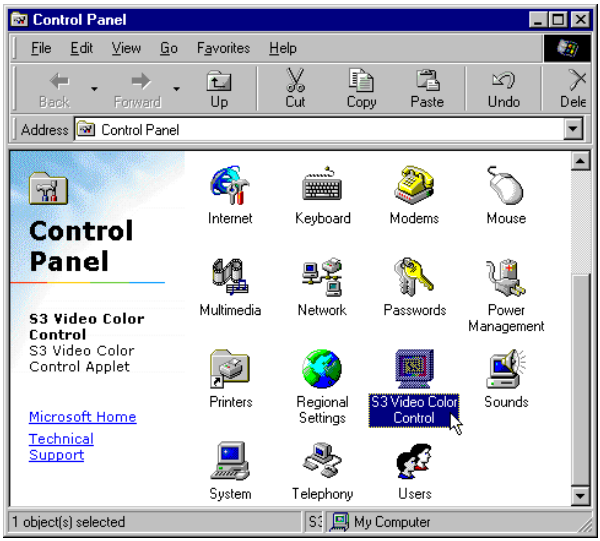
6. Click the **Advanced Settings...** button to reveal a list of options to customise when outputing to TV.



7. The *TV Control* allows the fine-tuning of the brightness, contrast, color and tint of the TV output.



8. *TV Adjustment* allows further customising of the position and size of the image.



9. During the playback of various video format such as MPEG, you can fine-tune the colours of your video. Double-click the **S3 Video Color Control** icon from the **Control Panel**.

Appendix A

Frequently Asked Questions

You may encounter some problems or doubts while installing or using your card. This chapter highlights some of the more common issues concerning your card and their possible solutions. Reviewing this chapter can help you solve many problems and often eliminate the need for telephone assistance.

Why does my Monitor display flicker badly?

Change your Refresh Rate at your Display properties in the Control Panel to 60Hz or higher. Refresh rate below 60Hz generally flickers badly. It is also Monitor-dependent.

There are no refresh rate settings for some of the screen resolutions.

The refresh rates for these screen resolutions are fixed at a certain value.

My System hangs when playing games such as Forsaken or MageSlayer.

There are patches available for downloading from the Web Sites of the respective Games Vendors that will enable the fixing of these issues.

There is no display after I plugged in the Card and switched on the System.

Check that your monitor cables and power cables are plugged in properly and power supply switched on. The card may not be inserted fully into the AGP slot. Try taking out and putting back the card again.

I am unable to obtain 1600X1200 resolution on my monitor.

The highest resolution that the Graphic Card is able to run is dependent on the Monitor itself. If your monitor does not support this resolution, then you will not be able to go up to this resolution.

I cannot get 16 color using screen resolutions above 1280X1024.

Screen resolutions above 1280X1024 can only be run at a minimum of 256 color. This is a common implementation among Graphic Cards Manufacturers.

Under Windows NT® 4.0, I am unable to install the Graphics Card correctly.

Under Windows NT® 4.0, you must first install Windows NT® 4.0 Service Pack 3 or later in order to get AGP support.

I am having difficulties installing the Graphics Card Under Windows® 95.

Please ensure that you have installed USB Supplement from Microsoft and there are no conflicting devices in your device Manager that may be causing Resources allocation problem. Also check that you have installed DirectX™ 6.0 or later for best performances.

Do I need to install DirectX™ 6.0 in the Installation CD under Windows NT® 4.0?

The DirectX™ 6.0 is meant for Windows® 95 SR2.1 or later. Do not install it under Windows NT® 4.0.

Can I install the VGS3D-VID Graphics Card under Windows® 95 OSR1 or earlier?

Due to the fact that Windows® 95 OSR1 or earlier does not have support for AGP devices, the features of the VGS3D-VID will not be fully utilised.

After the drivers are installed and Windows restarted, there is Plug and Play detection of my Monitor. Why is this so?

The Plug and Play detection of your monitor is to enable the VGS3D-VID Graphics Card to detect the capabilities and limits of your Monitor's Supported Resolutions and Refresh Rates. If you are uncertain of what to choose, just click the "Next" button and let Windows select the most appropriate drivers for your Monitor.

I do not see the Gamma Utility in my Display Properties.

The Gamma Utility only works for 16-Bit color and above. If you select 256 color or lower, then the Gamma Utility Tab in Display properties will not be visible.

How do I reinstall S3 Dometer utility?

Go to the "Utility\Dometer" Directory and right click on the file "S3dometr.inf". Choose "Install" and the Dometer utility will be installed into your Display Properties. Note that all the bundled utilities are for Windows® 95 SR2.1 and Windows® 98 only.

Appendix B

Technical Specifications

Chipset

- S3 Savage3D™

Memory

- 8MB SDRAM on board

Bus Type

- 2X AGP support/AGP 1.0 compliant
- Full AGP implementation including full side band AGP support and direct memory execution

Integrated RAMDAC

- 250MHz RAMDAC with Gamma Correction

Resolution

- Supports 1,600 x 1,200 maximum resolution with 32-bit color

Rendering

- 128-bit Dual Rendering Pipeline

Refresh Rate

- Maximum 85Hz refresh rate

3-D Capabilities

- Single Cycle Trilinear Filtering
- H/W S3 Texture Compression (adopted as standard for DirectX™ 6)
- True Color Rendering which enables the use of 16M colors versus traditional 64K thus producing more realistic images
- 16-bit or 24-bit Z-Buffering
- Single Cycle Trilinear Filtering
- Specular Lighting & Diffuse Shading
- Alpha Blending Modes
- Fog (Vertex & Table)
- Special effects like Sprite anti aliasing, reflection, procedural textures and atmospheric effects

2D Capability

- 1600 x 1200 in 32-bit colors
- 8MB Frame Buffer
- Highly optimized 128-bit graphics engine
- Full featured 2D Engine for acceleration of Bitblt, Rectangle Fill, Line Draw, Polygon Fill, Panning/Scrolling and H/W Cursor

API Support

- OpenGL™
- Direct 3D

Operating Systems & Drivers Support

- Windows® 95
- Windows® 98
- Windows NT® 4.0 & Windows 2000
- DirectDraw and DirectVideo
- OpenGL™ ICD for Windows® 9x and NT

Video/Display/BIOS

- Multi-monitor Capability

- Optimized for Software DVD MPEGII Decoder
- Feature Motion Compensation and sub picture blending to enhance software DVD playback
- Multiple Video Windows and image mirroring to provide ideal solution for video conferencing
- 60MHz VIP VMI video port allows for HDTV Resolution as well as provides low cost connection to MPEG-2 decoders and video digitizers
- Brightness, Hue, Saturation Control
- Integrated NTSC/PAL Encoder with programmable 3-tap flicker filter and vertical overscan compensation thus producing high quality composite or S-Video TV out (VGS3D-VID only)
- Simultaneous Monitor/TV display (VGS3D-VID only)
- Ready for DVD and TV (VGS3D-VID only)

Connectors

- VGA connector
- VIP/LPB connector
- Composite & S-Video connectors (VGS3D-VID only)

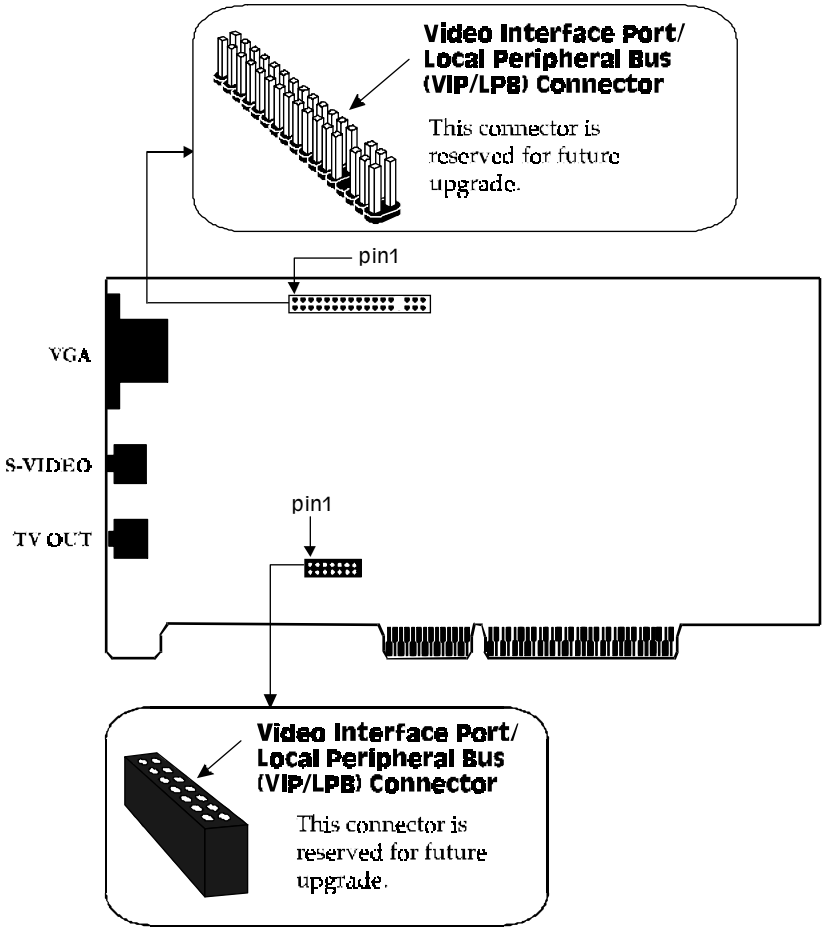
Power Management

- PCI Power Management

Options (Available on different models)

- Composite Video Out (VGS3D-VID only)
- Video Input (add-on card needed)
- TV Tuner (add-on card needed)
- Hardware DVD MPEGII upgrade option

The product specifications herein are subject to change without prior notifications.

Appendix C

Card Layout