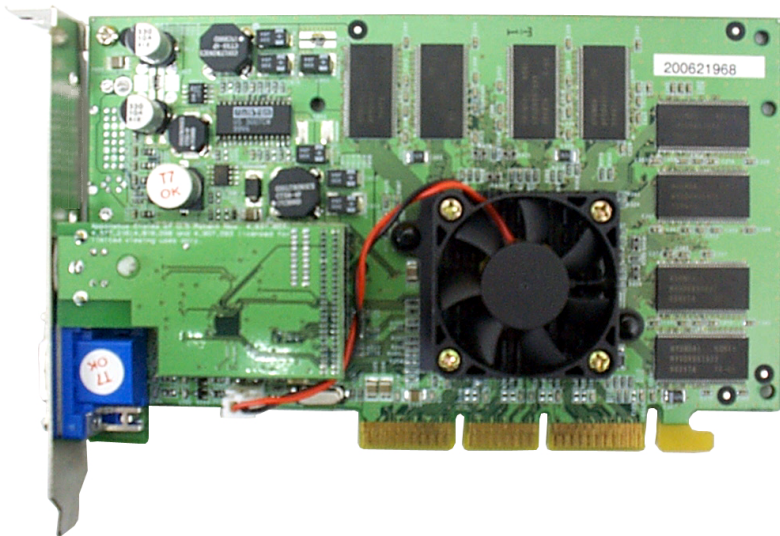


SILURO™ GF256 GTS Graphics Accelerator

Installation Guide and User's Manual



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If you do not properly set the motherboard settings causing the motherboard to malfunction or fail, we can not guarantee any responsibility.

SILURO™ GF256 GTS

Graphics Accelerator

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Chapter 1. Getting Started

In this chapter we will show you the accessories in this package, what the system needs, and how to install the adapter for your computer.

1-1. What's in the box? (Accessories List)

Read through this section to familiarize yourself with everything that is included with the SILURO™ GF256 GTS graphics accelerator card.

- One SILURO™ GF256 GTS graphics accelerator card (depending on which model you bought)
- One User's manual
- One S-Video extension cable
- SILURO™ GF256 GTS installation CD (which includes Windows® 95/98 SE/Windows® NT 4.0/Windows® 2000 drivers, Microsoft® DirectX® 7 driver, GART driver, WinDVD player) and game CD.

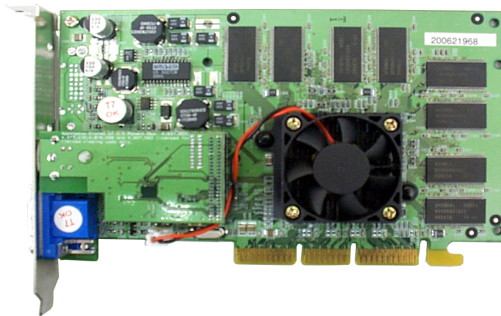


Figure 1-1. SILURO™ GF256 GTS graphics accelerator card



Figure 1-2. User's Manual



Figure 1-3. S-Video Cable

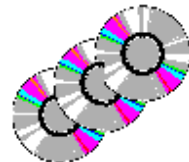
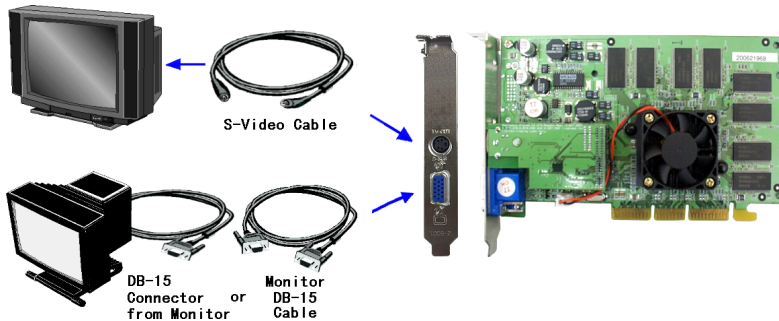


Figure 1-4. Installation CD & Two Game CDs

1-2. Connection Guide

This section tells you how to make a quick connection to the SILURO™ GF256 GTS series graphics accelerator card.

- Step 1.** Insert the SILURO™ GF256 GTS graphics accelerator card into an empty AGP slot on your motherboard, and fix it to the back panel with the screw included.



- Step 2.** Plug the free end of the PC monitor cable into the female DB-15 PC monitor connector on the SILURO™ GF256 GTS graphics accelerator card. If you want to

Figure 1-5. Connection Diagram of PC Monitor, TV and DFP Monitor

use a TV as your display, connect the S-video cable (included inside the package) to the TV S-video input connector, and connect the other side to the SILURO™ GF256 GTS TV output connector.

For more detailed information on the SILURO™ GF256 GTS, please go to the next chapter.

Chapter 2. Introduction to SILURO™ GF256 GTS

Congratulations! You have chosen one of the most powerful high performance 3D graphics accelerator cards available. The SILURO™ GF256 GTS uses the NVIDIA™ GeForce2 GTS™ 256-bit with new 4x4 T&L architecture processor chip. This chapter will describe the features, specifications, layout diagram and system diagram.

2-1. Introduction

The SILURO™ GF256 GTS 2D/3D graphics accelerator card provides you powerful 3D acceleration, and also provides the most advanced Direct3D/OpenGL acceleration solution for games, professional 2D/3D CAD/CAM applications and 3D drawing applications.

GeForce2 GTS™ is the first shading GPU with the new NVIDIA Shading Rasterizer and a High Definition Video Processor (HDVP). Incorporating a radical new per-pixel shading processor, raising image quality to never-before-seen heights for interactive content. Each of the four new rasterization pipelines now process two textures per pixel, in life-like 32-bit color, at full speed. GeForce2 GTS' 2nd-generation transform and lighting architecture now delivers more than 25 million triangles/sec transformed and lit, allowing even more stunning scene realism.

GeForce2 GTS' integrated HDVP supports all ATSC resolutions, including 720p and 1080i, at their specified frame rates. When combined with a high performance, high level software MPEG-2 decoder and a Digital TV receiver, GeForce2 GTS delivers a cost effective, high quality HDTV playback solution. In addition, GeForce2 GTS enables ground-breaking new applications like HD timeshifting, and digital VCR capabilities.

GeForce2 GTS is the most complete DX7 hardware implementation and meets all the requirements of the mainstream PC graphics market, including Microsoft's PC00, PC99 and PC99a initiatives.

GeForce2 GTS delivers the industry's fastest Direct3D and OpenGL acceleration and continues NVIDIA's tradition of providing leadership, single-chip, integrated VGA/2D/3D and high definition digital video performance. This enables a wide range of applications, from 3D games to HDTV, DVD, digital content creation, internet browsing and general productivity.

2-2. Key Features

- Incorporates NVIDIA's latest GTS (Giga Texel Shading) GPU processor
- HyperTexel architecture delivers 1.6 GTexels and 800 MegaPixels/second.
- Fast and optimized 64MB DDR(**D**ouble **D**ata **R**ate) memory
- 8 texturing-mapped, filtered, lit texels per clock cycle
- 200MHz core clock, 333 MHz DDR memory clock, RAMDAC 350MHz
- 4X AGP with Fast Writes/AGP 2X /1X compatible

The QUAD-Engine Architecture:

- 100% hardware triangle setup: 25 million triangles/second
- Optimized Direct 3D and OpenGL acceleration
- The most advanced supports for OpenGL and DirectX 7 and beta DirectX 8
- New **3D** features: per-pixel shading and lighting for rich, lifelike materials and cinematic effects

High performance 256-bit 2D acceleration

- Resolutions of up to 2048x1536 in 16 million colors with a 350MHz RAMDAC

High Quality TV/Video Output and DVD Playback:

- NTSC and PAL TV output in 640x480 and 800x600
- High Definition Video Processor (HDVP) for full-screen, full-frame video playback of all HDTV and DVD and resolutions

***1:** The standard 256-bit 3D processor core speed for SILURO™ GF256 GTS is 200MHz, the standard DDR RAM speed for the SILURO™ GF256 GTS is 333MHz. Above-standard operation speeds are supported but not guaranteed due to the graphics processor and DDR RAM specifications.

***2:** Specifications and information contained in this manual are subject to change without notice

Note

All brand names and trademarks are the property of their respective owners.

2-3. Features and Benefits

Features	Benefits
Single-Chip GPU (Graphics Processing Unit)	On-chip integration of the entire 3D pipeline (transformation, lighting, setup and rendering) offers the lowest possible component and board design cost.
Integrated Transform and Lighting	Delivers 2-4X the triangle rate for 2-4X more detailed 3D scenes. Frees up CPU bandwidth for physics and artificial intelligence (AI), which results in more realistic object behaviors and character animation.
Independent Pipelined QuadEngine™	Separate engines for transformation, lighting, setup and rendering provide a very powerful, highly efficient architecture that delivers 25 million triangles per second. Allows applications to represent 3D characters and environments with the highest degree of complexity possible.
AGP 4X with Fast Writes	Enables the CPU to send data directly to the GPU to maximize overall system performance. Avoids a costly data copy to and from valuable main memory bandwidth that graphic processors without Fast Writes must incur.
High-Quality HDTV Processor	Delivers the highest quality DVD and HDTV playback and digital recording.
350MHz RAMDAC	Delivers the clearest, sharpest, most solid image quality at 2048 x 1536 resolution at 75Hz.
High-Speed Memory Interface	Designed to support current SDRAM / SGRAM and DDR high-speed memory.
256-Bit 2D Rendering Engine	Delivers the industry's fastest 2D performance for ultra-fast screen refresh at high resolutions and 32-bit color depths.
Complete Support for New Microsoft® DirectX® 7 and OpenGL® Features	Ensures that applications can leverage the new features without additional cost or support. Guarantees best out-of-box end user experience.

2-4. Layout Diagram

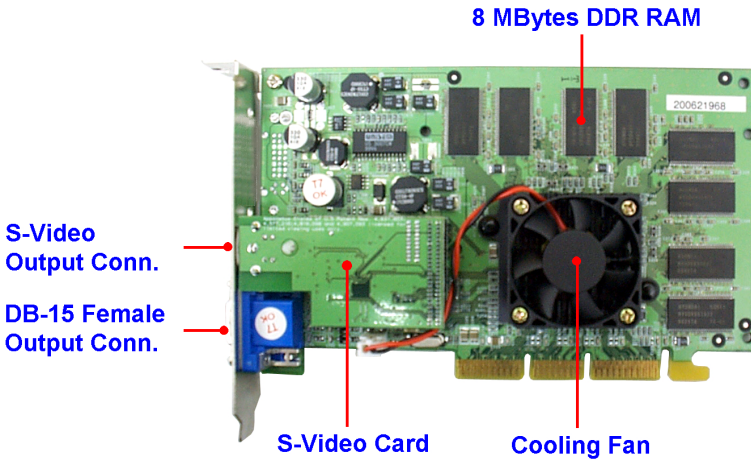


Figure 2-2. SILURO™ GF256 GTS graphics accelerator card layout diagram.



Figure 2-3. SILURO™ GF256 GTS graphics accelerator card plate layout.

2-5. Hardware Installation

See *Chapter 1, Section 1-2* for information on how to connect your PC monitor, TV to the back panel of the display card.

If you bought the SILURO™ GF256 GTS 2D/3D graphics accelerator card and you want to display the image on a TV, you have to go into *Display Properties* to set it up. It can't display the image using both TV output and PC monitor DB-15 output connectors.

2-6. TV Output

Please go to the “*Display Properties*” → “*Output Device*” folder to set the display mode for TV output.

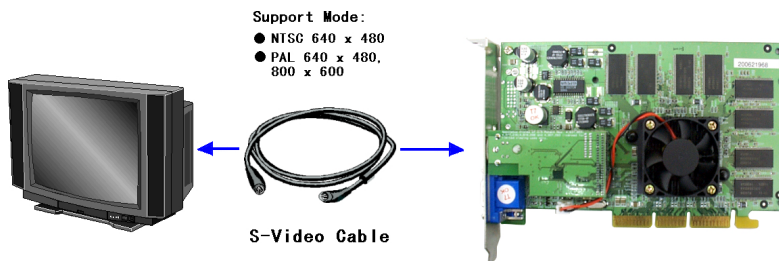


Figure 2-4. SILURO™ GF256 GTS connection to TV



Chapter 3. Software Installation

This chapter will show you how to install the software and drivers for the SILURO™ GF256 GTS 2D/3D graphics accelerator card. The SILURO™ GF256 GTS product package contains the *Installation CD*. Use this CD to install all drivers and software needed.

3-1. Installing the VGA Drivers for Windows® 98 SE

This section will tell you how to install the SILURO™ GF256 GTS 2D/3D graphics accelerator card drivers for Windows® 98 SE. There are two situations when you would install these drivers. One is when you are assembling a new computer system and are installing a new operating system. The other is when you replace your VGA card with a SILURO™ GF256 GTS 2D/3D graphics accelerator card with the operating system already installed.

In the first situation, please set the Windows VGA driver to “Standard PCI Graphics Adapter (VGA)” to install the Windows® 95/98. After the Windows® 95/98 installation is complete, then go to Step 1 for installing the SILURO™ GF256 GTS 2D/3D graphics accelerator card driver.

In the second situation, before you install the SILURO™ GF256 GTS 2D/3D graphics accelerator card into your computer system, please go to the *Display Properties* and change your VGA driver to “Standard PCI Graphics Adapter (VGA).” Leave *Display Properties*, then close Windows and install the SILURO™ GF256 GTS 2D/3D graphics accelerator card into your computer system. After you install it, go to Step 1 to install the SILURO™ GF256 GTS 2D/3D graphics accelerator card drivers.

The following section shows you how to install the VGA driver to your Windows® 98 SE operating system.

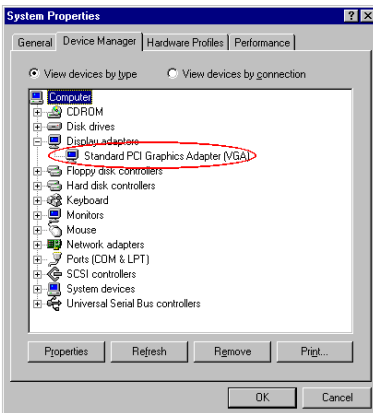
Note 3-1-1

After changing the VGA driver to “Standard PCI Graphics Adapter (VGA)” driver, the quality of your display will be poor because it will be set to 640*480 and 16 color. For the best screen capture quality, we install the VGA drivers and set the desktop to 800*600 using true color.

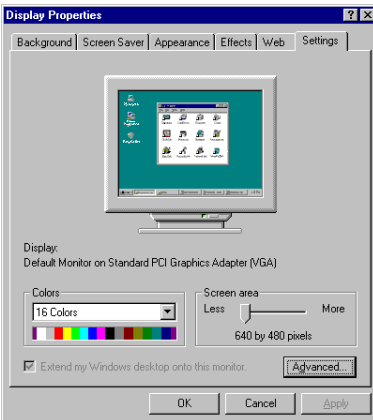
Note 3-1-2

Details of the Windows® 98 SE operating system will not be mentioned in this manual. If you have any problems with Windows® 98 SE installation, operations and settings, please refer to your Windows® 98 SE user's manual or other resources provided by Microsoft® Corporation.

The installing procedures for Windows® 95, 95 OSR2 and 98 are very similar to Windows® 98 SE, but there may be slight differences between them. If you follow the installation instructions as shown, this should be very easy to do.



First, go to check the “**System Properties**” → “**Device Manager**” → “**Display Adapters**”. Your system now shows the “**Standard PCI Graphics Adapter [VGA]**”.



Also check your Display Properties, as in the figure to the left. If you want to change your old VGA adapter to a SILURO™ GF256 GTS display adapter, you must set the display type to “**Standard PCI Graphics Adapter [VGA]**” first, then reboot the computer for it to take effect. Otherwise, you may not be able to install the new display drivers in the next step.

Exit the device manager and insert the *ABIT SILURO™ Installation Disc* into the CD-ROM drive. It should execute the program automatically. If not, you can go to the CD location and execute the execution file at the root directory of this CD-Title. After it has been executed, you will see the screen below. Move the cursor to the "Drivers" and click on it. This will take you to the next screen.



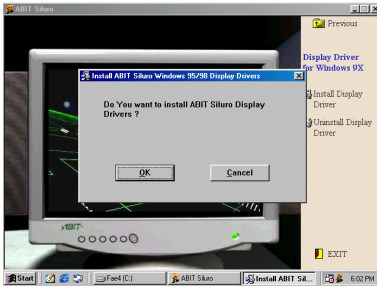
Click "Display Drivers" icon and go to next.



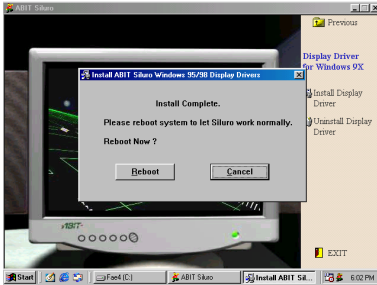
Click the "Display Driver for Windows 9X" icon then continue.



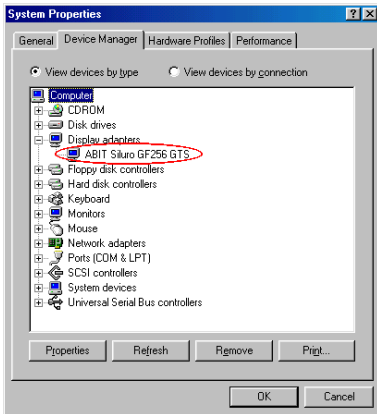
Click "Install Display Driver" icon. The program will automatically install the necessary driver for the SILURO™ GF256 GTS display adapter.



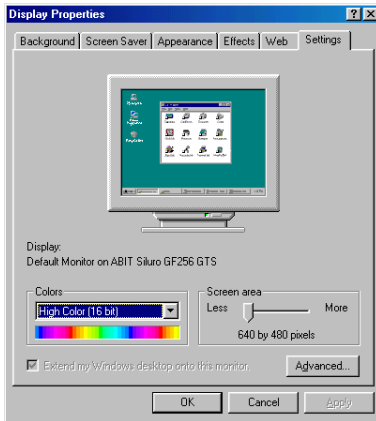
The dialogue box will appear to ask you if you really want to install SILURO™ display drivers. Click the “**OK**” button. The program will start installing the drivers and the screen will show that the files are being copied.



When the installation is complete, a dialogue box will appear and ask you to reboot your computer. Click the “**Reboot**” button to reboot your computer.



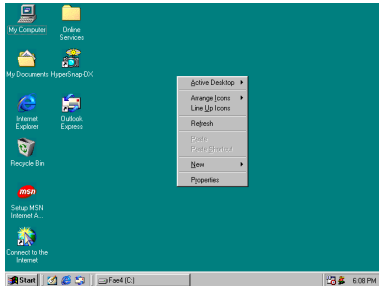
Go to “**System Properties**” → “**Device Manager**” → “**Display Adapters**”. Your system will now show the “**ABIT Siluro GF256 GTS**”.



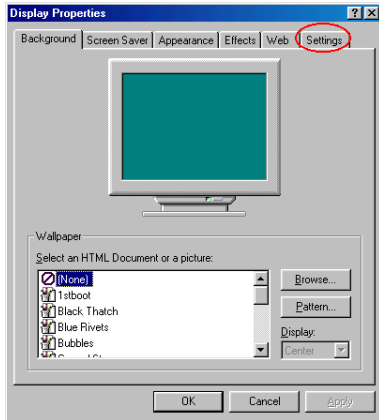
Also check your Display Properties, as in the figure to the left.

You have successfully installed the drivers.

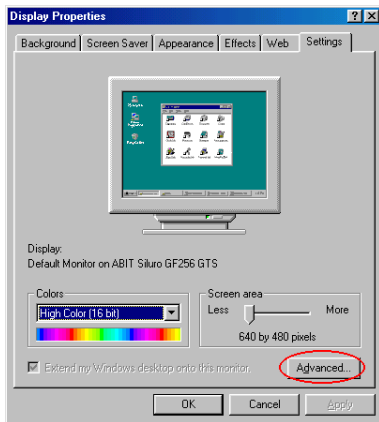
3-2. How to Use the Display Properties Settings in Windows® 98 SE



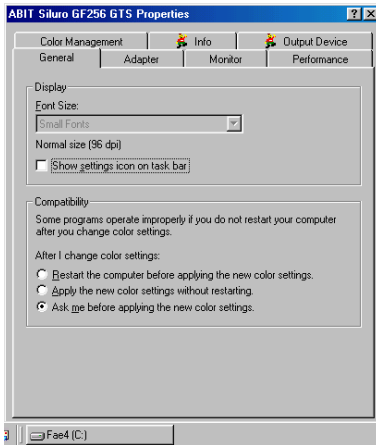
Step 1. When you have properly installed the drivers for the Windows® 98 SE operating system, right-click on the Windows® 95/98 desktop wallpaper area and select the item “**Properties**”.



Step 2. The “**Display Properties**” item will appear on your screen and select the “**Settings**” folder.

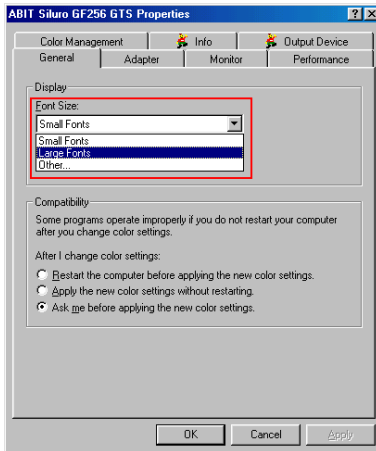


Step 3. Click the “**Advanced...**” button and go to the next step.

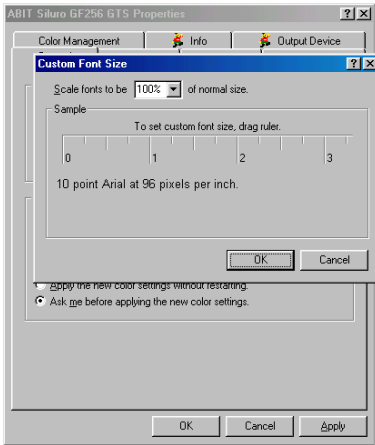


Step 4. Now you can see all the further functions of this display card. Detailed information about these settings follows.

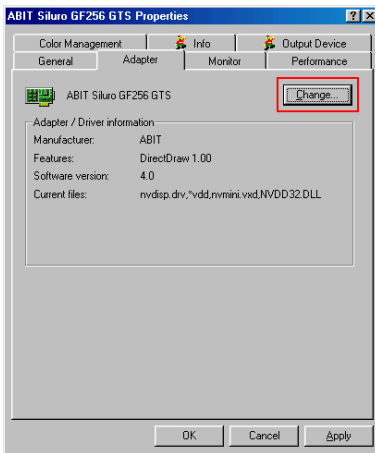
You should look at the “**General**” folder initially. Click on the right-side arrow at the item “**Font Size**” and choose the font size you want.



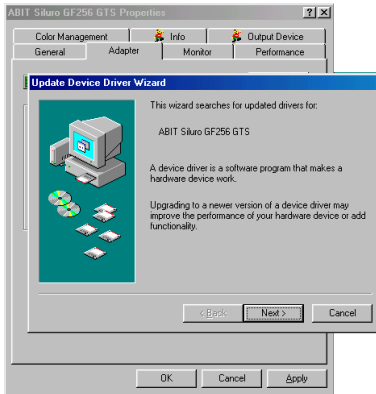
Step 5. You can choose the font size here. If you choose “**Other...**” the next screen will appear.



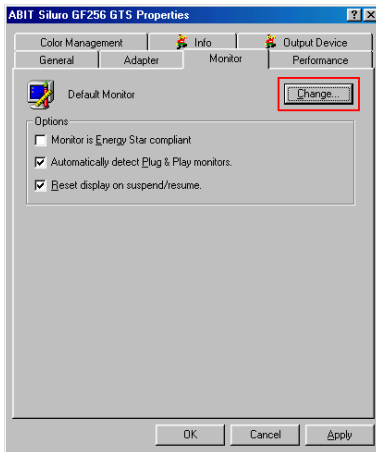
Step 6. You can make further font size adjustments here, as this screen demonstrates.



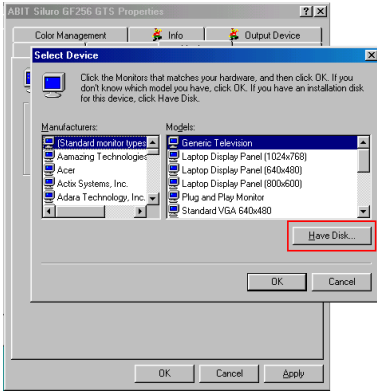
Step 7. Now if you go to the “**Adapter**” folder, you will see the current display driver information. You can change the driver here. If you click the “**Change...**” button, you will see the next screen shot.



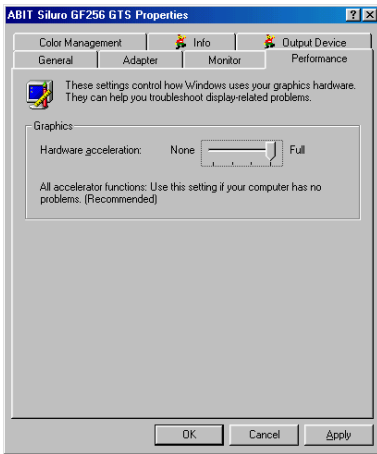
Step 8. Follow the instructions to install the new display driver.



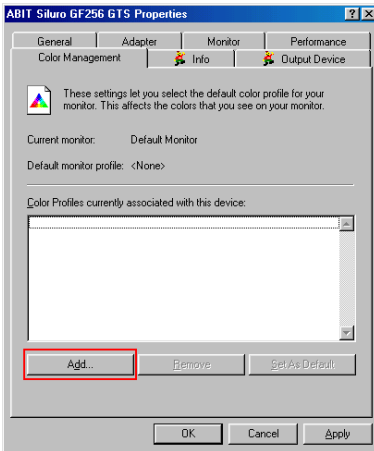
Step 9. Now check the “**Monitor**” folder content. It can let you check your monitor model and settings. You can change the monitor type by click the “**Change...**” button.



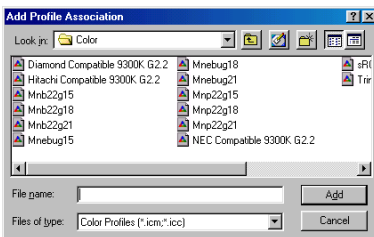
Step 10. You can select the manufacturer on the left side of the window and the model on the right side of the window. If you want to install a driver from disk, click the “**H**ave **D**isk...” button to install a new driver from the disk drive.



Step 11. The “**P**erformance” folder will show how Windows uses your display adapter. It can help you troubleshoot display-related problems.



button.

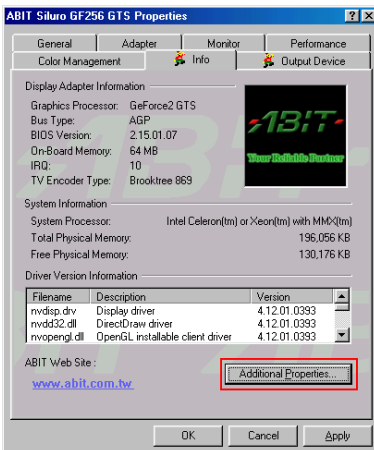


Step 12. When you check the “Color Management” folder, you will see that there are seven folders inside.

You should be in the “Color Management” folder initially. These settings let you select the default color profile for your monitor. This will affect the colors that you see on your monitor.

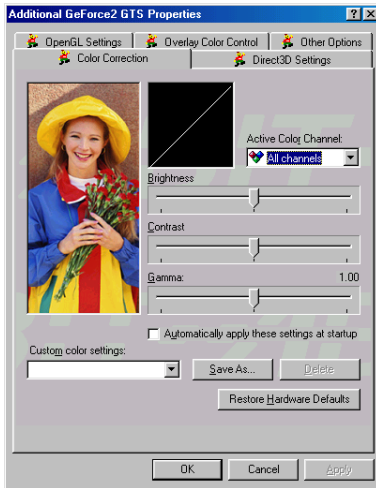
High-end or some middle-end monitors will provide a color profile file with the monitor. It will allow your colors to be shown more accurately on the screen. If you do have such a profile disk, please click the “Add...”

Step 13. You will see several profiles in the window. If your monitor type is listed here, select it directly. Otherwise, put the disk into the drive and click the “Add” button to install it.



Step 14. The folder “Info” will show you all the detailed information regarding your graphics card.

If you want more settings for your graphics card, please click the “Additional Properties...” button to go to the next screen.



Step 15. There are five more item folders that can be selected. First, look at the folder called **“Color Correction”**.

This item lets you adjust brightness, contrast, and gamma parameters.

The most important parameter is the gamma adjustment. If you don’t know what gamma means, you may want to examine additional information explaining color before you make any adjustments.

The gamma adjustment lets you adjust each channel’s value. Which means that you can adjust the red, blue, or green channel gamma value separately.

The adjustment in **“Color Correction”** will affect the way colors appear on your monitor, and will affect color accuracy. When you change the settings, the photo in the left window will change color and you can see how each change you make looks.



Step 16. Exit the **“Color Correction”** folder and select the **“Direct3D Settings”** folder.

First check the **“Performance and Compatibility Options”** items:

■ **Enable fog table emulation:**

This option is used to turn the fog table emulation on or off.

Direct3D specifies that a display adapter capable of D3D hardware acceleration should be able to implement either vertex fog or table fog. Some 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 on your Nvidia graphics processor.

■ Adjust Z-buffer depth to render depth if unequal:

This will cause 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. If this option is disabled, any application whose working Z-buffer depth does not match that of the current hardware configuration will not run.

■ Enable alternate depth buffering technique:

This enables an alternate technique for depth buffering.

This allows the hardware to use a different mechanism for depth buffering in 16 bit applications. Enabling this setting can produce higher quality renderings of 3D images.

■ Display logo when running Direct3D applications:

This enables the Nvidia logo in Direct3D.

Enabling this setting will display the Nvidia logo in the lower corner of the screen while running Direct3D applications.

Now check the “**Mipmapping**” items:

■ Automatically generate:

The NVIDIA™ GeForce 256™ can automatically generate mipmaps to increase the efficiency of texture transfers across the bus and provide higher performance of Direct3D accelerated applications and games.

For some applications, the automatically generated mipmaps will cause problems. In such cases, you can reduce the number of automatically generated mipmap levels until the images are properly displayed. Usually, decreasing the number of mipmap levels can eliminate texture misalignment or seaming. (If you do that, some performance will be lost.)

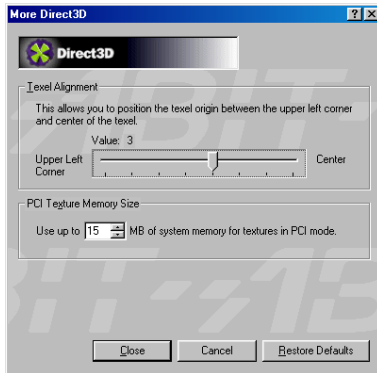
■ Auto-mipmap method:

This option has two options: bilinear and trilinear. The bilinear method provides better performance than the trilinear method. The trilinear method provides higher image quality than bilinear method.

■ Mipmap detail level:

This option allows you to adjust the level of detail (LOD) bias for mipmap. A lower bias will provide better image quality, and higher bias will increase application performance. You can choose from five preset bias values from “Best Image Quality” to “Best Performance”.

Step 17. More Direct3D Settings:



If you click the “**More Direct3D...**” button, you will see the following items:

■ Texel Alignment:

This option changes the hardware texture addressing scheme for texels (texture elements). Changing these values will adjust the texel origin definition. The default setting value is in accordance with Direct3D specifications. Some software will define the texture origin to other places. For such applications, re-defining the texture origin

will improve the image quality. You can use the slider to adjust the texel origin anywhere between the upper left to the center of the texel.

■ PCI Texture Memory Size:

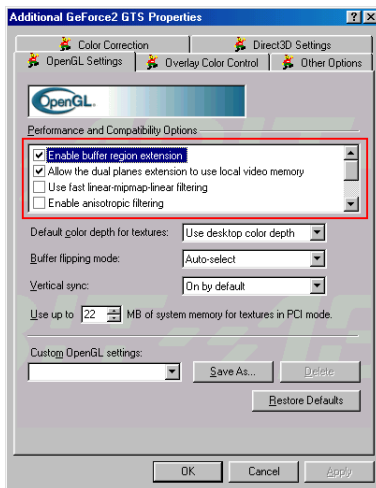
This option allows the graphics processor to utilize up to the specified amount of system memory for texture storage (in addition to the memory installed on the display adapter itself).

Note 3-2-1

The maximum amount of system memory that can be reserved for texture storage is based on the amount of physical RAM installed in your computer. The more system RAM, the higher the value you will be able to set.

A larger value can improve the performance for some Direct3D applications. This setting applies only to PCI display adapters. If you use the AGP bus display adapter, this option will not be available (except when the AGP display adapters are running in PCI compatibility mode).

Step 18. The “**OpenGL Settings**” folder allows you to adjust the image texture quality in OpenGL applications.



enabled.

However, if there are less than 8MB of local video memory available, dual planes extension support will not be enabled. This setting has no effect if the “**Enable buffer region extension**” option above is disabled.

- **Use fast linear-mipmap-linear filtering:**

Allowing fast linear-mipmap-linear filtering will provide increased application performance at the expense of some image quality.

In many cases, this loss of image quality may not be noticeable, so you may wish to take advantage of the extra performance gained by enabling this feature.

- **Enable anisotropic filtering:**

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

- **Enable alternate depth buffering technique:**

Enables an alternate technique for depth buffering. This 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.

The following are “**Performance and Compatibility Options**” items:

- **Enabled buffer region extension:**

This option allows the drivers to use the OpenGL extension

GL_KTX_buffer_region.

This can increase application performance in 3D modeling applications that support this extension.

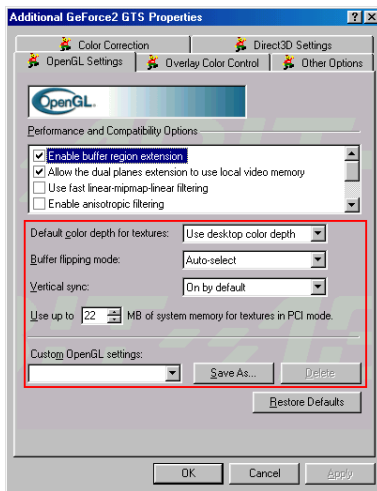
- **Allow the dual planes extension to use local memory:**

Allows the use of local video memory when the `GL_KTX_buffer_region` extension is

■ Disable support for enhanced CPU instruction sets:

Select this option to disable driver support for enhanced instructions used by certain CPUs. Some processors that support additional 3D instructions can improve performance in 3D games or applications. The Intel® MMX™ series and AMD 3D NOW!™ series processors are examples of such. If these 3D games and applications are not optimized for these enhanced instructions, the processors will have no added effect. The display drivers are also needed to support these features. You can disable this option and it may be useful for troubleshooting and performance comparison.

Step 19. Also note the following items:



■ **Default color depth for textures:** This option determines whether textures of a specific color depth should be used by default in OpenGL applications.

● Use desktop color depth:

This setting will always use the texture of the color depth at which your Windows desktop is currently running.

● Always use 16 bpp or Always use 32 bpp:

These options will force the use of textures of the specified color depth, regardless of your desktop settings.

■ Buffer flipping mode:

This option determines the buffer flipping mode for full-screen OpenGL applications. You can select from the block transfer method, the page flip method or auto-select. Auto-select allows the driver to determine the best method based on your hardware configuration.

■ Vertical sync:

This option lets you specify how vertical sync is handled in OpenGL.

- **Always off:** This setting will always disable vertical sync in OpenGL applications.
- **Off by default:** This setting will keep vertical sync disabled, unless an application specifically requests that it be enabled.

- **On by default:** This setting will keep vertical sync enabled, unless an application specifically requests that it be disabled.
- **Use up to “XX” MB of system memory for textures in PCI mode:**

This allows the graphics processor to utilize up to the specified amount of system memory for texture storage (in addition to the memory installed on the display adapter itself).

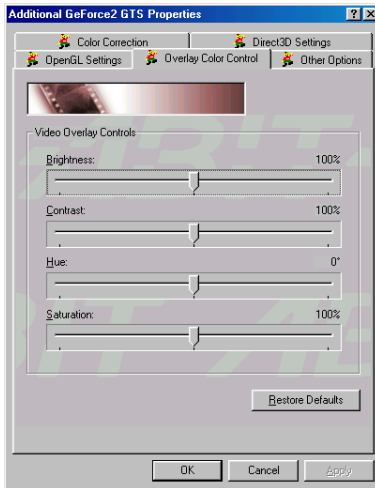
Note 3-2-2

The maximum amount of system memory that can be reserved for texture storage is based on the amount of physical RAM installed in your computer. The more system RAM, the higher the value you will be able to set.

A larger value can improve the performance for some Direct3D applications. This setting applies only to PCI display adapters. If you use the AGP bus display adapter, this option will not be available (except when the AGP display adapters are running in PCI compatibility mode).

- **Custom OpenGL settings:**

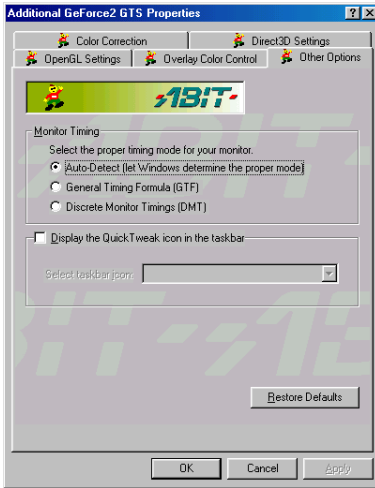
This is a list of the custom settings (or “tweaks”) you have saved. Selecting an item from the list will activate the setting. To apply the setting, choose “**OK**” or “**Apply**”.



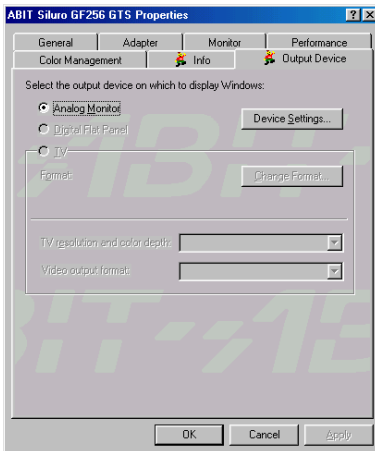
Step 20. “Overlay Color Control” folder:

Use these controls to adjust the quality of video or DVD playback on your monitor.

You can independently control the brightness, contrast, hue and saturation to achieve optimal image quality when playing video or DVD movies on your computer.



hardware. Enable this option if your hardware requires DMT.



Step 21. “Other Options” folder:

■ Monitor Timing:

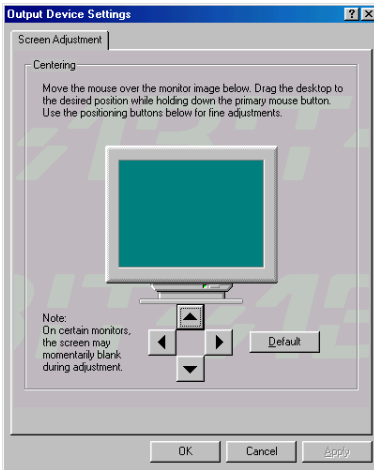
This options allows you to select your monitor timing mode:

- **Auto-Detect** Allows Windows to receive the proper timing information directly from the monitor itself. This is the default setting. Note that some older monitors may not offer support
- **General Timing Formula** or **GTF** is a standard used by most newer hardware.
- **Discrete Monitor Timings** or **DMT** is an older standard still in use on some

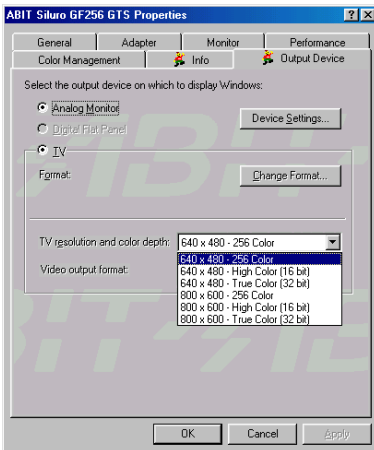
Step 22. “Output Device” folder:

First, look at “**Analog Monitor**” & “**Digital Flat Panel**”.

Here you can select what kind of output device you are using. Most people use the “**Analog Monitor**” setting. If you have a DFP display, you can select “**Digital Flat Panel**” as the output device here.

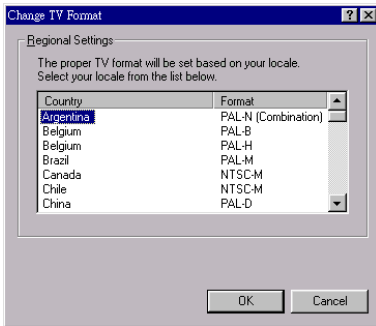


Step 23. After you choose the output device, you can click the “**Device Settings...**” button to adjust the centering of the screen display.



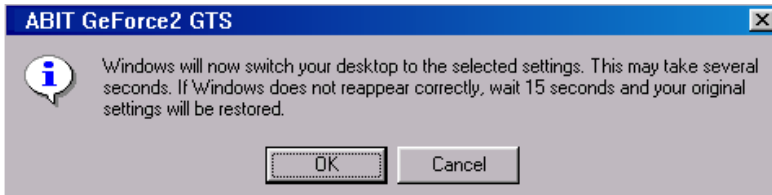
Step 24. If you want to use a TV as your image display, select the “**TV**” check box. You can choose the TV resolution and color depth: three options are available from 640 x 480 – 256 Color to 800 x 600 – True Color (32 bit).

When you select one, the following screen will appear.

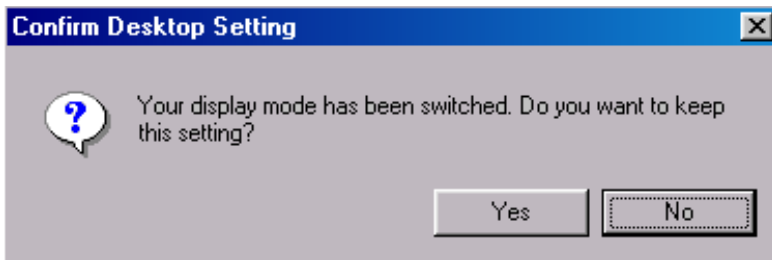


Step 25. If you choose the item “Video output format”, you will see this screen. Please select your local TV system video format from this item. If you choose the wrong system, the displayed images may be missing or distorted.

Step 26. This screen informs you that it will switch your desktop to the selected settings. Click the “OK” button.

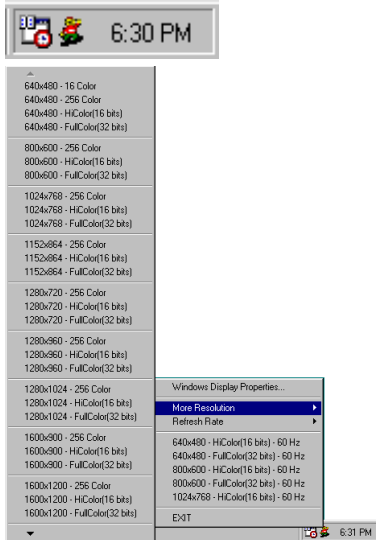


Step 27. The screen will ask if you want to keep this setting or not. If there are no problems with the display image, click the “Yes” button to keep this setting.



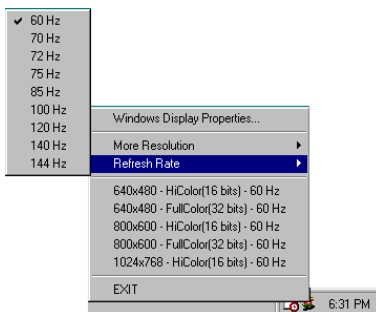
3-3. Display Tray Icon

After you install the VGA drivers, you can see the “**Soft Jumpy**” icon on the right corner of the task bar. Please refer to the figure below:



You can “**right click**” the mouse button on the Soft Jumpy icon. From the pop up menu you can then choose the “**More Resolution**” menu item, and see the resolution table pop up on left side. You then can directly choose the display resolution you want.

If you want to change the display adapter refresh rate, please choose the “Refresh Rate” from the pop up resolution table on left side, you then can directly choose the display refresh rate you want.



Be aware, that if you choose a higher refresh rate, you must make sure your display monitor can use this value. Otherwise, you may damage your display monitor.

You can refer to your display monitor user’s manual for detailed specifications.

If you choose “**Windows Display Properties...**” please go to Chapter 3, section 3-2 for detailed information. The

resolution shown below the “Refresh Rate” allows you to change quickly to the resolution and refresh rate that you usually use.

Choose “**Exit**” to leave this program.

3-4. Installing the VGA Drivers for the Windows® NT 4.0 Server/Workstation

In this section we will show you how to install the VGA drivers to your Windows® NT 4.0 Server/Workstation operating system. All screen shots are from Windows® NT 4.0 workstation version. Before you install the VGA drivers, please install Windows® NT 4.0 Service Pack 5 (or latest version) first. Then you can install the VGA drivers.

Note 3-4-1

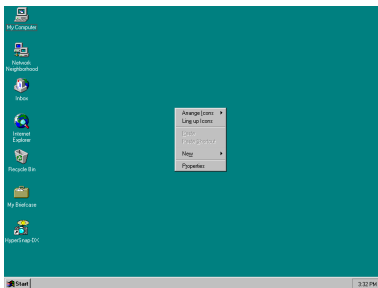
Details of the Windows® NT 4.0 Server/Workstation operating system are not mentioned in this manual. If you have any problems with the settings, operating or installing Windows® NT 4.0 Server/Workstation, please refer to your Windows® NT 4.0 Server/Workstation user's manual or other resources provided by the Microsoft® Corporation.

Note 3-4-2

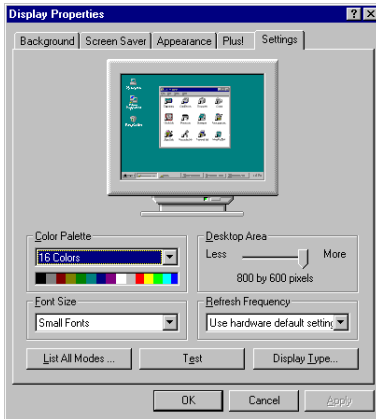
For the Windows® NT 4.0 Server/Workstation operating system, you don't need to install any IDE-USB drivers. But you do have to install the Windows® NT 4.0 Service Pack 5 (or latest version) first.

Step 1. Reboot your computer system and select “Windows NT 4.0 (VGA)” from the Windows® NT 4.0 boot menu.

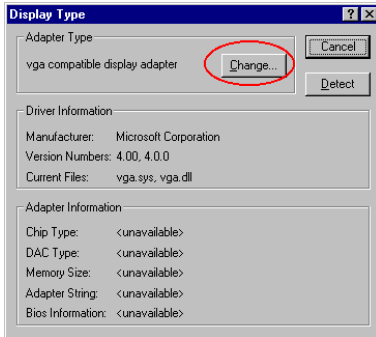
Step 2. Insert the *ABIT SILURO™ Installation Disc* into your CD-ROM drive.



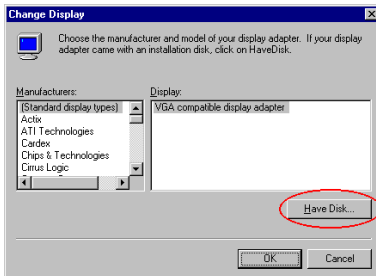
Step 3. From your Windows® NT 4.0 desktop wallpaper area, click the “**right**” button on your mouse. When the popup menu appears, choose “**Properties**” and click the left button on your mouse. This will take you to “**Display Properties**”.



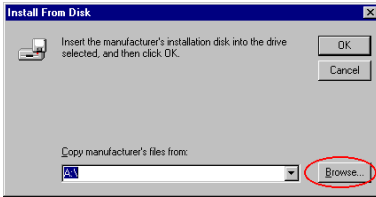
Step 4. Choose the “Settings” folder. You will see the current display settings. Click the “Display Type...” button and go to the next step.



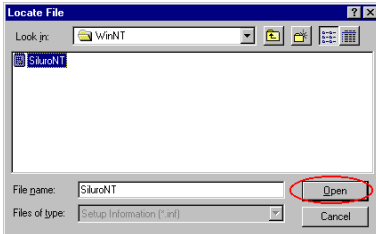
Step 5. A window with the title “Display Type” will appear on your screen. Click the “Change...” button.



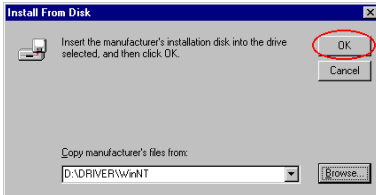
Step 6. A window with the title “Change Display” will appear on your screen. Click the “Have Disk...” button.



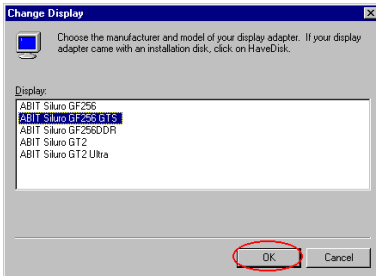
Step 7. A window with the title “**Install From Disk**” will appear on your screen. Click the “**Browse...**” button.



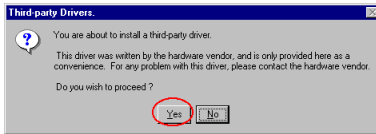
Step 8. A window with the title “**Locate File**” will appear on your screen. Choose the path “**D:\Driver\Winnt**” and click the “**Open**” button.



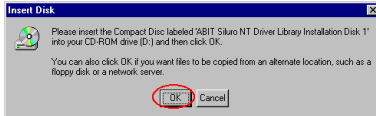
Step 9. A window with the title “**Install From Disk**” will appear on your screen. Click the “**OK**” button.



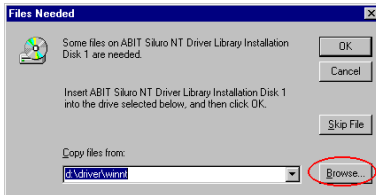
Step 10. A window with the title “**Change Display**” will appear on your screen. Choose the proper display card name and click the “**OK**” button.



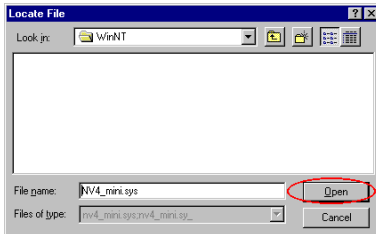
Step 11. A window with the title “**Third-Party Drivers**” will appear on your screen. Click the “**Yes**” button.



Step 12. A window with the title “**insert Disk**” will appear on your screen. Click the “**OK**” button.

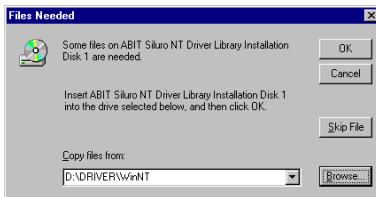


Step 13. A window with the title “**Files Needed**” will appear on your screen. Click the “**Browse...**” button.



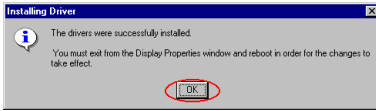
Step 14. A window with the title “**Locate File**” will appear on your screen. Click the “**Open**” button and select the Path where the drivers are located. In this case we will choose “**D:\Driver\Winnt**”.

The name of the CD-ROM drive will depend on how many devices are installed on your computer system. Here it is shown as D:\.

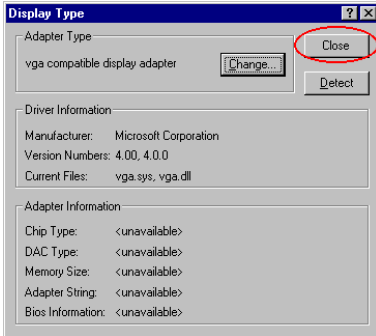


Step 15. A window with the title “**Files Needed**” will appear on your screen. Click the “**OK**” button to go on.

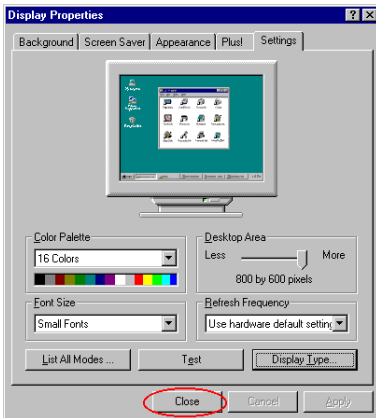
Note: This situation may appear several times, please choose the same path to install the needed drivers.



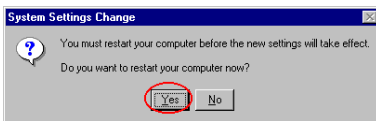
Step 16. A window with the title “**Installing Driver**” will appear on your screen. Click the “**OK**” button.



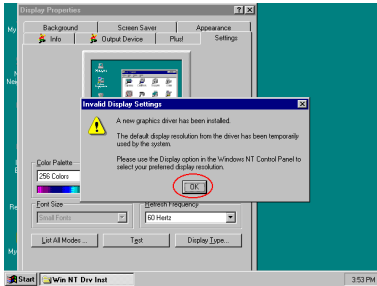
Step 17. A window with the title “**Display Type**” will appear on your screen. Click the “**Close**” button.



Step 18. A window with the title “**Display Properties**” will appear on your screen. Click the “**Close**” button.



Step 19. A window with the title “**System Settings Change**” will appear on your screen. Click the “**Yes**” button to restart your computer.



Step 20. When the computer is rebooted, enter “**Windows® NT 4.0**” from the boot menu list. After the logon of Windows® NT, the “**Invalid Display Settings**” applet will show on your screen. Click the “**OK**” button.

Note 3-4-3

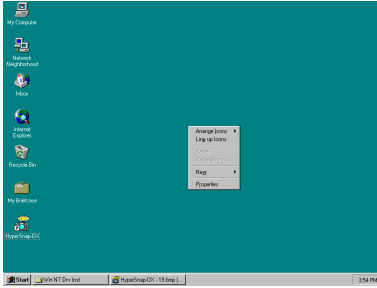
This “**Invalid Display Settings**” window will only appear when you use new display drivers for the first time.



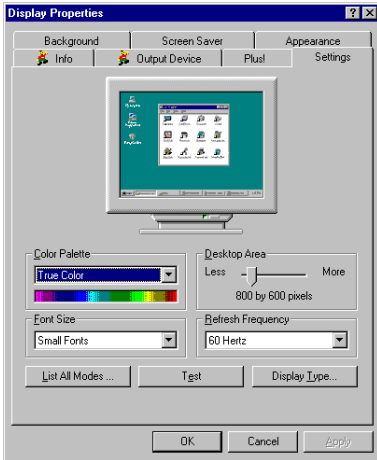
Step 21. You will see the color palette is now set to 256 colors. You can reset the new settings for your display card.

Please refer the section 3-5, “**How to Use the Display Properties Settings in Windows® NT**” to change these settings.

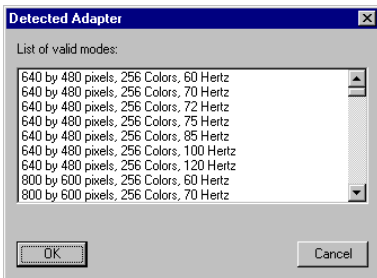
3-5. How to Use the Display Properties Settings in Windows® NT



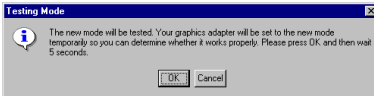
Step 1. When you have installed the drivers properly for the Windows® NT operating system, right click on the Windows® NT desktop wallpaper area and select the item **“Properties”**.



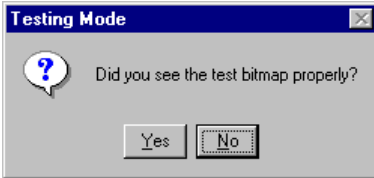
Step 2. The **“Display Properties”** item will appear on your screen. Select the **“Settings”** folder.



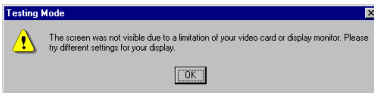
Step 3. Click the **“List All Modes...”** button. A window with the title **“Detected Adapter”** will appear on your screen. All modes that are available for your display card will be listed inside this Window. Choose the one that you want, and click the **“OK”** button for it to take effect.



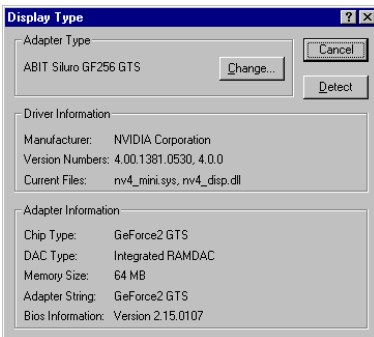
Step 4. Click the “Test” button. A window with the title “Testing Mode” will appear on your screen. Click the “OK” button to start testing your display card. You will see the test diagram on your screen.



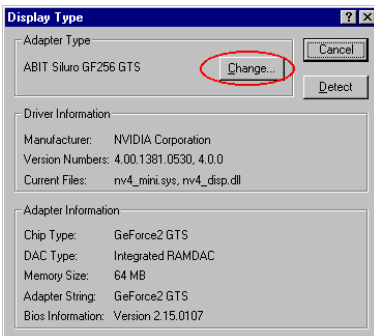
If the results are displayed properly, click the “Yes” button.



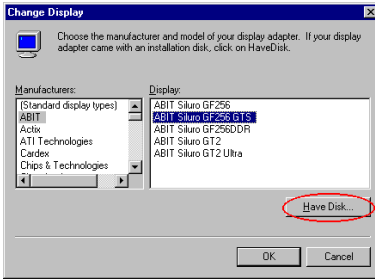
If the test results are unsuitable, this dialogue will ask you to change the settings for your display card.



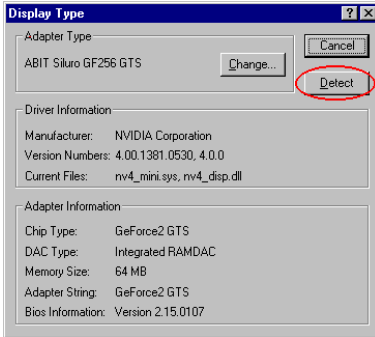
Step 5. Click the “Display Type...” button. A window with the title “Display Type” will appear on your screen.



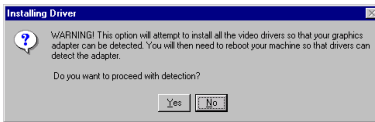
If you want to change your display driver, you can click the “Change...” button. The “Change Display” window will appear.



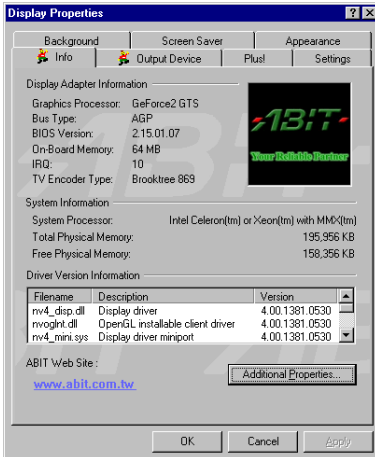
You can choose the proper manufacturer and display card model to install the driver. You also can choose the “**H**ave Disk...” button to install a driver that is not on the list.



You can click the “**D**etect” button to let the program automatically find the driver for your display card.

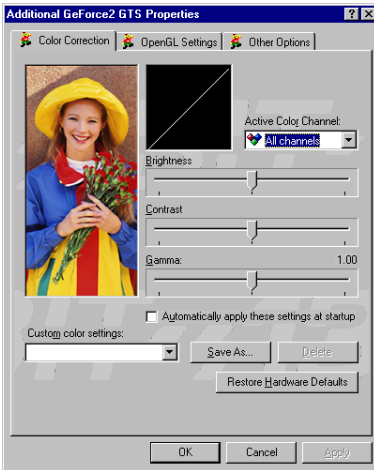


When finding the driver, a warning message will appear. Click the “**Y**es” button to continue.

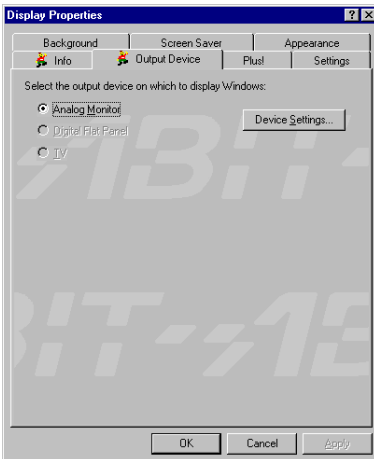


The “**I**nf” Folder will show you all the detailed information regarding your graphics card.

If you want more settings for your graphics card, please click the “**A**dditional Properties...” button to go to the next screen.



There are three more item folders that can be select. They are the same as the items described in chapter 3-2, from page 3-12. You can refer back to these pages.



The “**Output Device**” folder can let you choose the output device on which you want image to show.

Those are all the display setting items in Windows® NT. Carefully adjust the resolution and refresh frequency (a higher refresh frequency will make your screen appear more stable). If you are using an older display monitor, we suggest that you adjust the frequency from 60Hz, increasing the refresh frequency step by step. Sometimes, if your refresh frequency is at a setting above the monitor’s specifications, monitor failure or damage may result.

3-6. Installing the VGA Drivers for Windows® 2000

In this section we will show you how to install the VGA drivers to your Windows® NT 2000 operating system. All screen shots are from Windows® 2000 professional version.

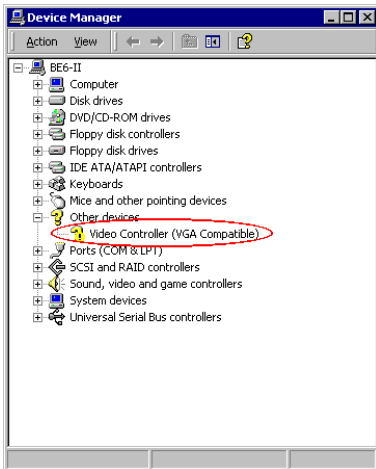
Note 3-6-1

After changing the VGA driver to “Standard PCI Graphics Adapter (VGA)” driver, the quality of your display will be poor because it will be set to 640*480 and 16 color. For the best screen capture quality, we install the VGA drivers and set the desktop to 800*600 using true color.

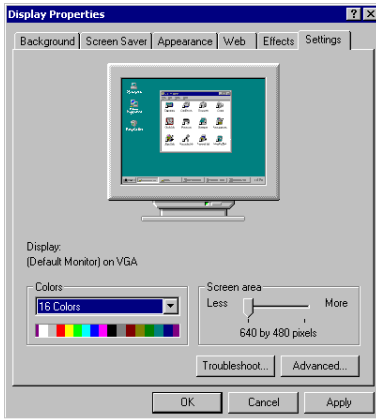
Note 3-6-2

Details of the Windows® 2000 operating system will not be mentioned in this manual. If you have any problems with Windows® 2000 installation, operations and settings, please refer to your Windows® 2000 user's manual or other resources provided by Microsoft® Corporation.

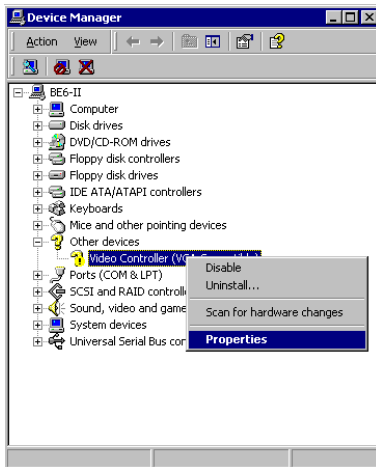
The installing procedures for Windows® 2000 families are very similar, but there may be might be slight differences between them. If you follow the installation instructions as shown, this should be very easy to do.



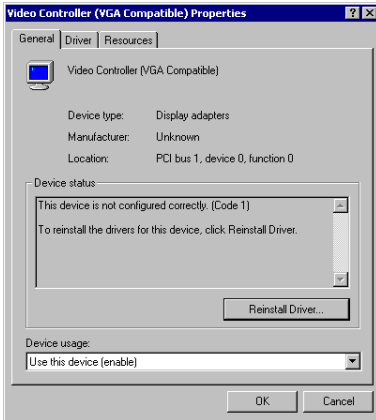
First, go to “**Device Manager**”. You will find the video controller has a question mark at the front.



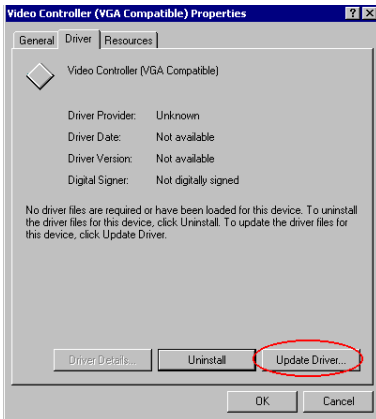
Also check your “**Display Properties**”, as in the figure to the left. If you want to change your old VGA adapter to a SILURO™ GF256 GTS display adapter, you must set the display type to “**Standard PCI Graphics Adapter [VGA]**” first, then reboot the computer for it to take effect. Otherwise, you may not be able to install the new display drivers in the next step.



Click on item video controller, then click the right key on the mouse. Select “**Properties**” and click the left button of the mouse to go to the next screen.



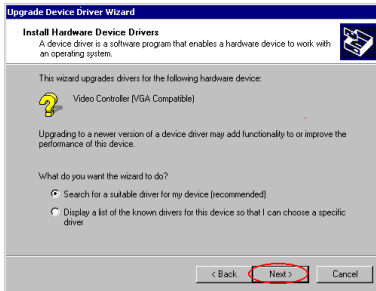
You'll see the "General" folder, click the "Driver" folder to go on.



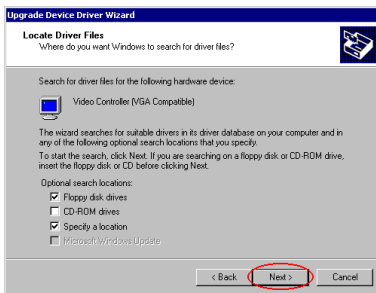
Click the "Update Driver..." button to update the Siluro™ GF256 GTS driver.



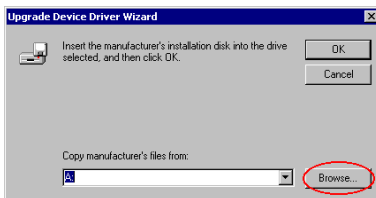
You will see the update driver wizard, click the "Next>" button to continue.



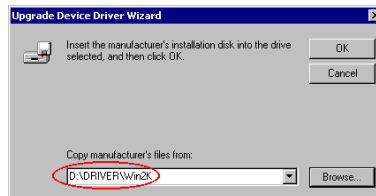
Clicks the “Next>” button.



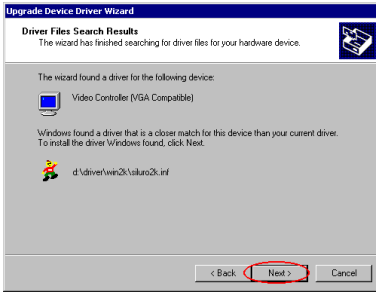
Choose the driver's location, then click the “Next>” button to continue.



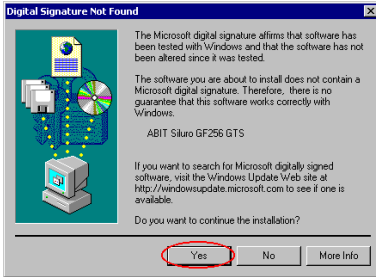
Choose the “Browse...” button to go on.



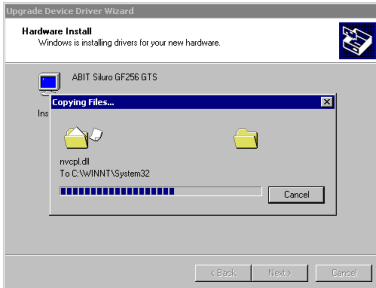
Find the driver location; for instance, D:\DRIVER\Win2K.



The program will find the driver match for the adapter, click “Next>” to continue.



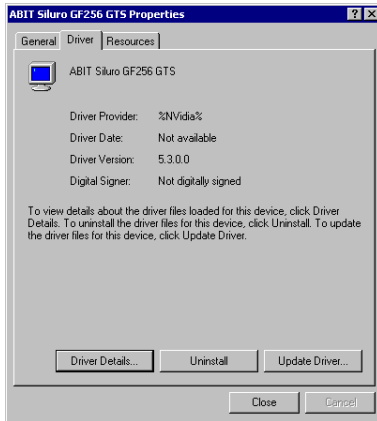
The Digital signature screen appears. Click the “Yes” button to go on.



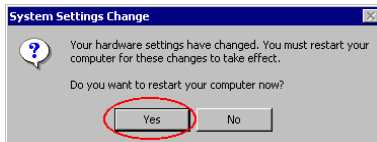
The program will start copying files to your hard disk.



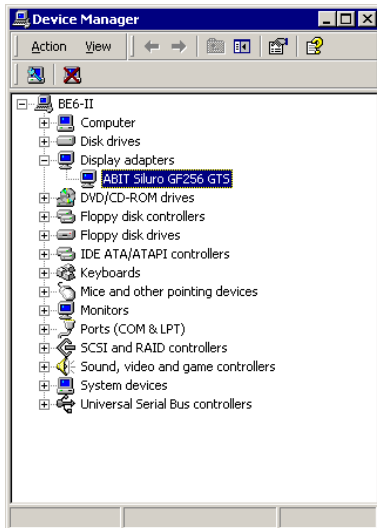
When the driver has completed upgrading, click the “Finish” button.



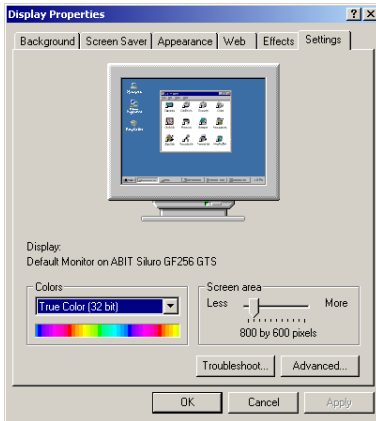
Return to the “**Driver**” folder and click “**Close**” to continue.



Then click the “**Yes**” button to restart the computer.



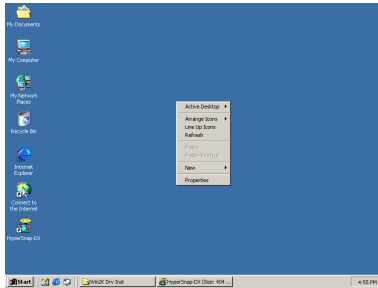
Check the “**Device Manager**” again and you’ll see the item “**Display adapters**” already changed to “**ABIT Siluro GF256 GTS**”.



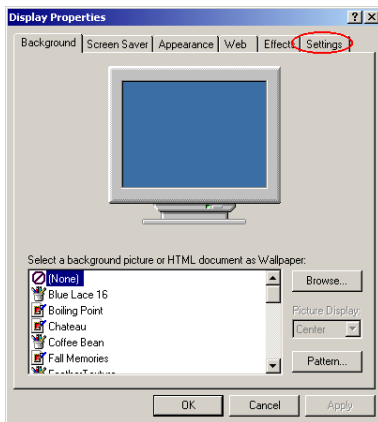
Also check your Display Properties, as in the figure to the left.

This means that you have successfully installed the drivers.

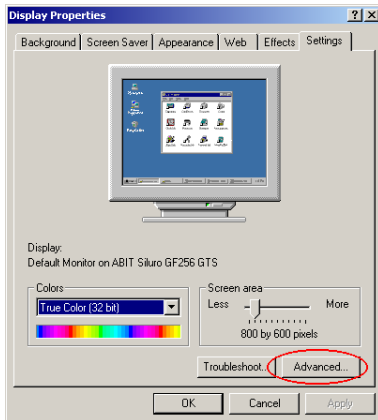
3-7. How to Use the Display Properties Settings in Windows® 2000



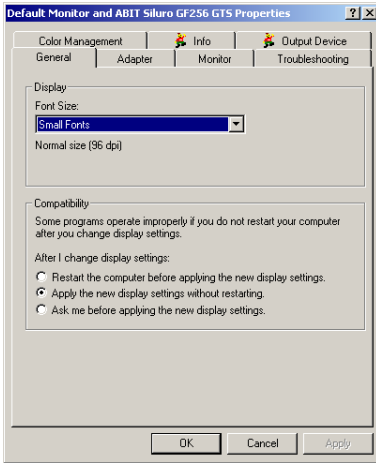
Step 1. When you have properly installed the drivers for the Windows® 2000 operating system, right-click on the Windows® 2000 desktop wallpaper area and select the item **“Properties”**.



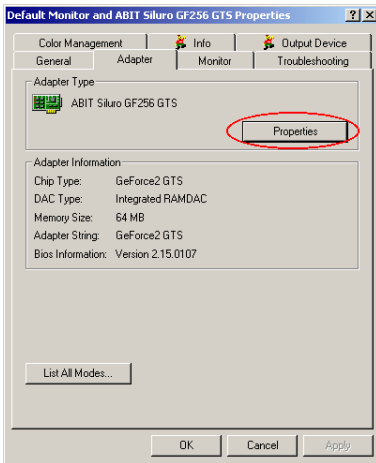
Select the **“Settings”** folder to continue.



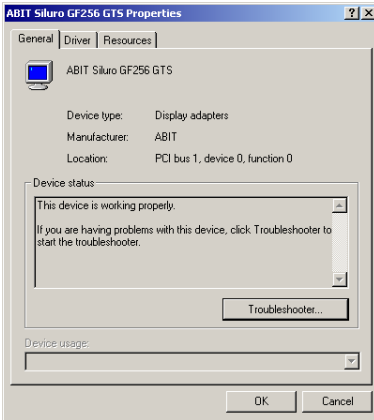
Click the **“Advanced...”** button to get further setting items.



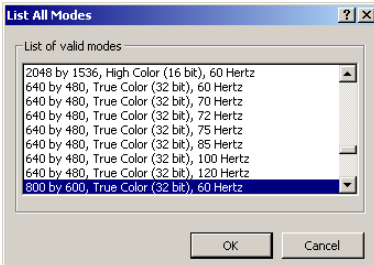
For the “**General**” folder, please refer to chapter 3-2, pages 3-7.



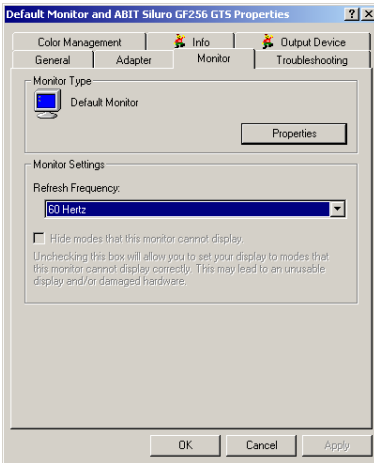
Now, if you go to the “**Adapter**” folder, you will see the current display driver information. You can change the driver here. If you click the “**Properties**” button, you will see the next screen shot.



The “**Properties**” screen shot.

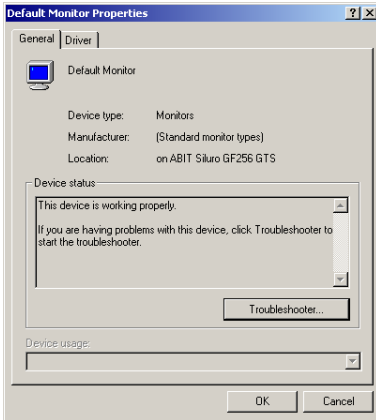


If you click the “**List All Modes...**” button, you’ll see this screen.

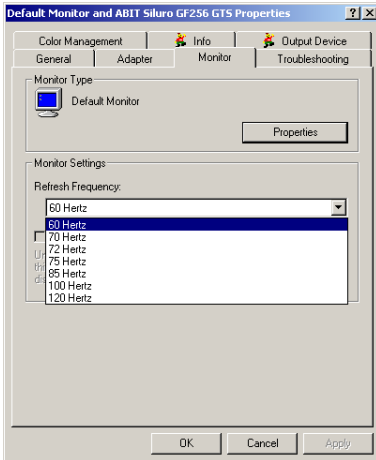


Then we go to see the “**Monitor**” folder. If you choose the “**Properties**” button, you will see the next screen.

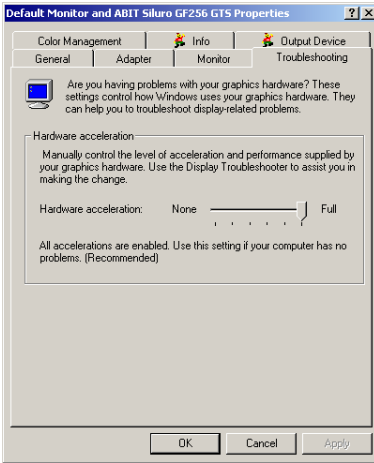
Otherwise, you can change the refresh frequency for your monitor.



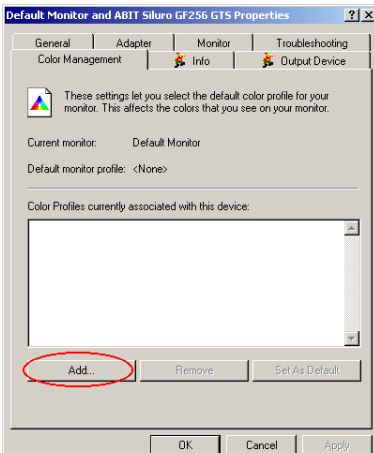
The “**Properties**” screen shot.



“**Refresh Frequency**” screen shot.

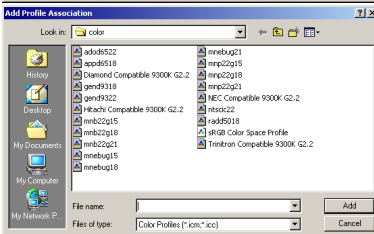


“**Troubleshooting**” folder. This folder can let you adjust hardware acceleration to solve any problems caused by hardware.

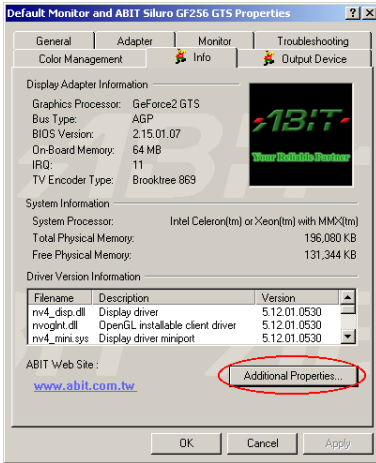


The “**Color Management**” folder. These settings let you select the default color profile for your monitor. This affects the colors you see on your monitor.

You can select the profiles by clicking the “**Add...**” button.

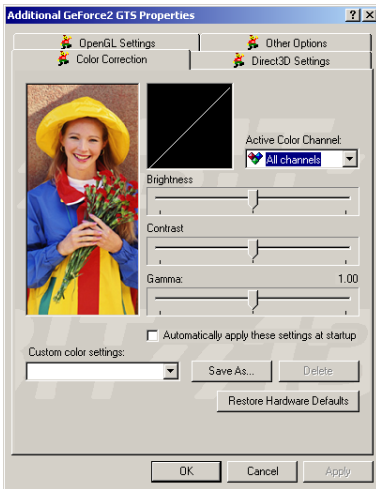


The left figure is the color profile screen shot.



The folder “Info” will show you all the detailed information regarding your graphics card.

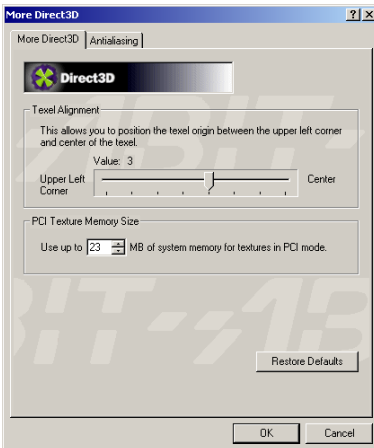
If you want more settings for your graphics card, please click the “**Additional Properties...**” button to go to the next screen.



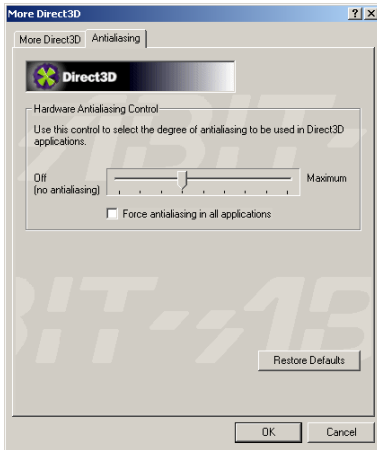
There are four more items folder that can be selected. For more detailed descriptions, please refer to chapter 3-2, pages 3-12.



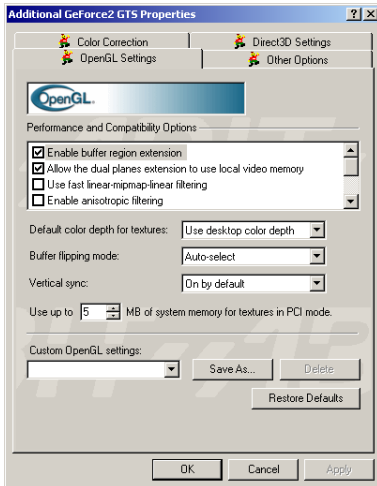
Exit the “**Color Correction**” folder and select the “**Direct3D Settings**” folder. For more detailed descriptions, please refer to chapter 3-2, pages 3-12.



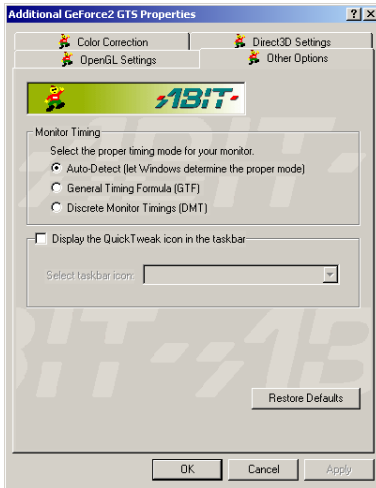
If you click the “**More Direct3D...**” button, you will see this screen. For more detailed descriptions, please refer to chapter 3-2, pages 3-14, step 17.



The “**Antialiasing**” folder is used to select the degree of antialiasing to be used in Direct3D.



For more detailed descriptions, please refer to chapter 3-2, pages 3-15, step 18.



For more detailed descriptions, please refer to chapter 3-2, pages 3-18, step 21.

Those are all the display setting items in Windows® 2000. Carefully adjust the resolution and refresh frequency (a higher refresh frequency will make your screen appear more stable). If you are using an older display monitor, we suggest that you adjust the frequency from 60Hz, increasing the refresh frequency step by step. Sometimes, if your refresh frequency is at a setting above the monitor's specifications, monitor failure or damage may result.

3-8. Before running Graphic Max

We have provided you with a tool for adjusting both the graphic processor working speed and the graphic memory speed. Please be warned that it may cause damage to both the graphic processor and graphic memory if you use incorrect settings. Please read the following description carefully before running ABIT Graphic Max!

Important Warning Message

1. ABIT does not provide any warranty or support for this utility. Use of this utility is at your own risk. This risk includes all damages caused by this utility. If you don't accept this warning, don't use this utility.
2. ABIT does not recommend any overclocking settings for your hardware. Overclocking can cause overheating which will damage your chip, even though an excellent cooling fan is included on your SILURO™ GF256 GTS display card.
3. If you are not acquainted with the display card hardware, we strongly recommend that you not to use this utility. Improper settings can cause unrecoverable damages to your graphics chip, your display card, and other components!

Application Notes

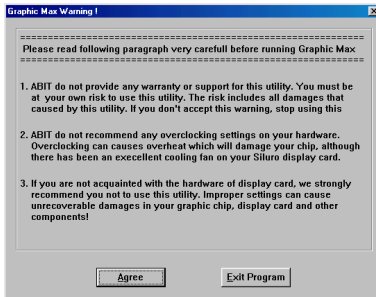
1. This utility is provided for fine-tuning your display card to allow for maximum stability on your system. It is for Windows® 95/98 only.
2. Select "Start->Programs->ABIT Graphic Max->Graphic Max" to launch Graphic Max.
3. If you have adjusted the Graphic Max settings and have problems after booting, you can boot into "Windows Safe Mode" and then run "Start->Programs->ABIT Graphic Max->Graphic Max Safe Mode Recovery" to clear previous settings.



Move the cursor to the "Install Graphic Max" and click on it.

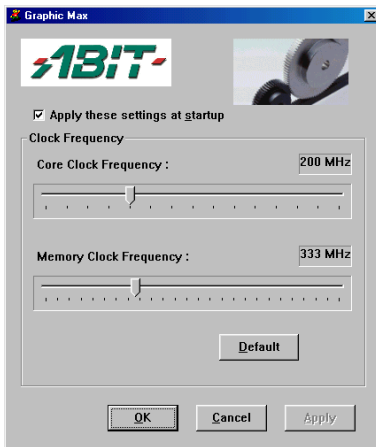
Note: Follow each installation procedure shown on your screen. The software can be installed quite easily this way.

The following Graphic Max screen will appear:



Each time you execute the program, you will see this warning message screen. Please read the entire message.

When you have read the entire message, click the “**A**gree” button to go on.



When the Graphic Max screen appears, you can use the two slide bars to adjust the “**C**ore Clock Frequency” and the “**M**emory Clock Frequency”. Please adjust these values very carefully, and make sure that you have already read the “Warning Message” on the prior page.

3-9. Installation of AlbumView

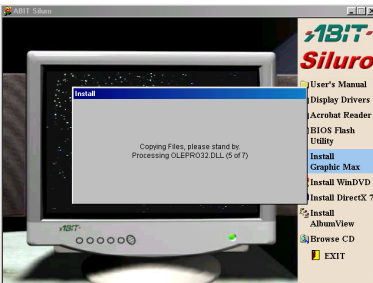
The Siluro™ installation CD includes the software *AlbumView*. This software is designed to view several formats of graphics. We hope you enjoy it!

The following will describe the installation procedures of this software.

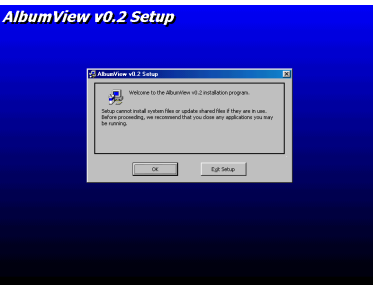


Move the cursor to the "Install AlbumView" and click on it.

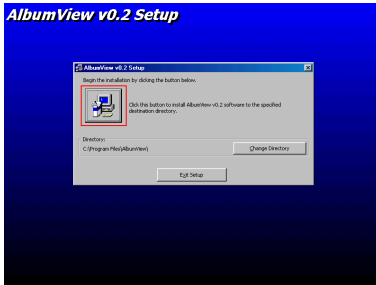
Note: Follow each installation procedure shown on your screen. The software can be installed quite easily this way.



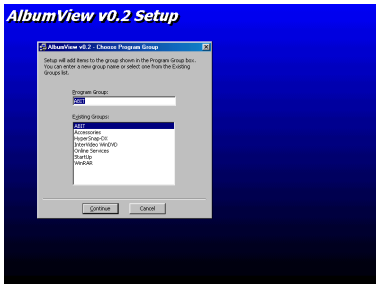
The program will start to copy the necessary files.



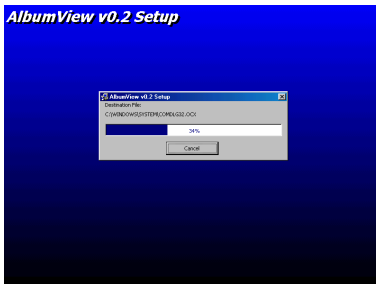
The welcome screen appears. Click "OK" to go on.



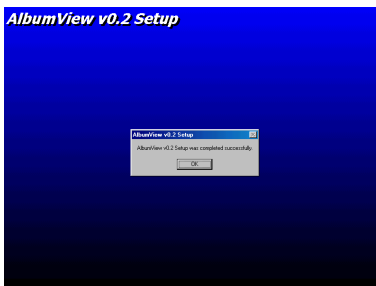
You can change the install path, or you can directly click the icon to start installing.



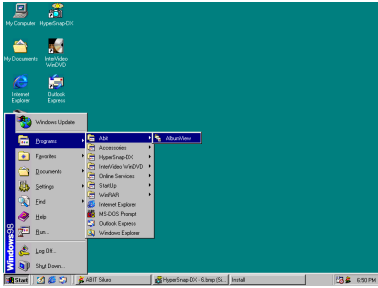
Choose the name of program group, we suggest you use the default setting. Click the “**C**ontinue” button to continue.



You will see the installation percentage on the screen.

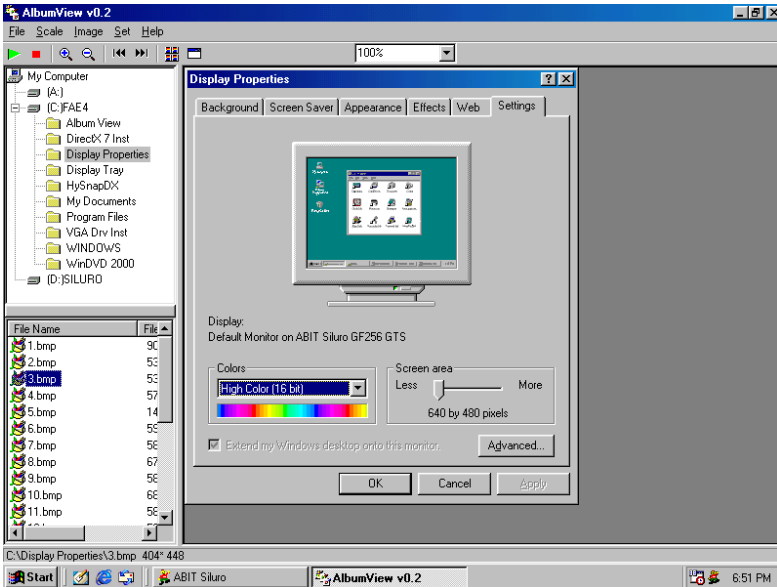


When the installation is complete, click “**O**K” button to leave the installation program.



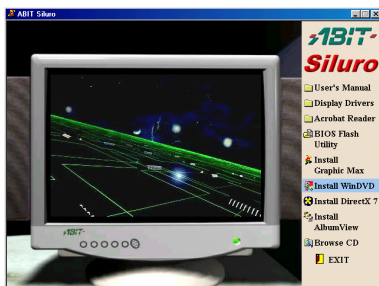
Select "Start -> Programs -> Abit -> AlbumView" to launch AlbumView.

Then you will see the screen below:



3-10. Installation of InterVideo WinDVD 2000

If you have a DVD-ROM, you can install this software DVD player application into your computer. Please insert the *ABIT SILURO™ Installation Disc* into the CD-ROM drive. It should execute the program automatically. If not, you can go to the CD location and execute the execution file at the root directory of this CD-Title. After it has been executed you will see the screen below.



Move the cursor to the "Install WinDVD" and click on it. This will begin installing the InterVideo WinDVD software into your computer.

Note: Follow each installation procedure shown on your screen. The software can be installed quite easily this way.

When you finish the installation, the program will ask you to reboot your computer. Reboot it and go to "Start" → "Program" → "InterVideo WinDVD" → "InterVideo WinDVD". Otherwise, you can start it by double clicking the WinDVD icon on your desktop. Then you will see the screen below.

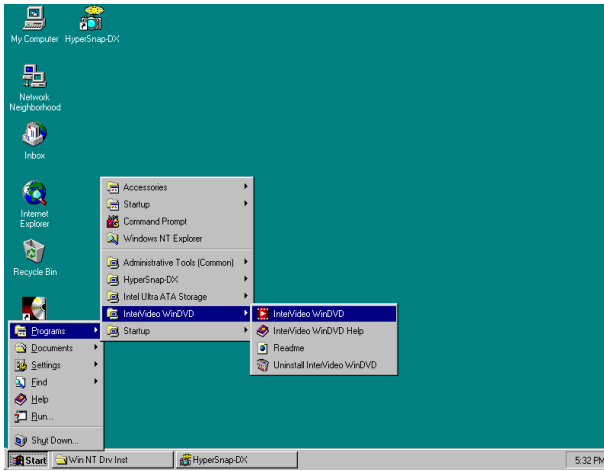


You also can play DVD movies using the DVD player control panel.

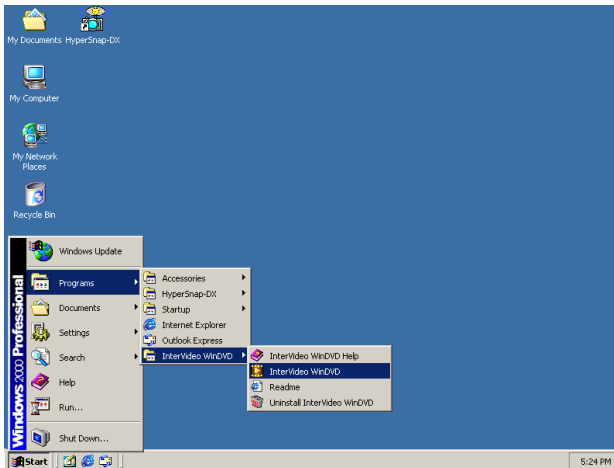
For more detailed information about how to operate it, please check the help file in the InterVideo WinDVD program group.



WinDVD 2000 for Windows® NT:



WinDVD 2000 for Windows® 2000:



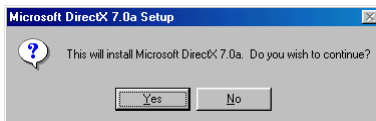
3-11. Installing Microsoft® DirectX® 7

For the best gaming capability, we suggest that you install the Microsoft® DirectX® 7 drivers. Some newer games will also ask you to install the DirectX drivers before you start them.

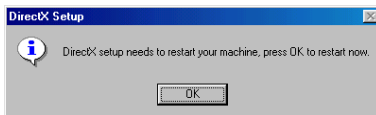
Installation of Microsoft® DirectX® 7 is very easy. Please insert the *ABIT SILURO™ Installation Disc* into the CD-ROM drive. It should execute the program automatically. If not, you can go to the CD location and execute the execution file at the root directory of this CD-Title. After it has been executed you will see the screen below.



Move the cursor to the "**Install DirectX 7**" and click on it.



The install dialogue box will appear. Click the "**Y**es" button. This will begin installing the Microsoft® DirectX® 7 drivers into your computer.



When the installation procedure is complete, a dialogue box will ask you to reboot your computer. Click the "**O**K" button to reboot your computer.

3-12. BIOS Flashing Utility

We will place the newest BIOS file on our WEB site (<http://www.abit.com.tw>), and you can check our WEB site to obtain the newest BIOS file.

We will tell you how to use the flash utility to flash the BIOS for the SILURO™ GF256 GTS display cards.

Note 3-9-1

When you use the flash utility to flash the BIOS, the screen will be blank for about 20~25 seconds. This is a normal situation, not a malfunction. Do not reboot your computer during this period, or you may cause the flash to fail.

- Step 1.** Reboot your computer into DOS environment, or open a Windows® 95/98 window to the DOS prompt.
- Step 2.** Insert the SILURO™ GF256 GTS Installation CD into your CD-ROM drive.
- Step 3.** Copy **DOS4GW.EXE** and **NVFLASH.EXE** to a new directory from path **D:\NVFLASH**. (D: refers to the CD-ROM drive letter)
- Step 4.** Copy the new BIOS binary file to the new directory.
- Step 5.** Change to the new directory and type the following command:
NVFLASH -F[Filename]. ([Filename] refers to the name of BIOS binary file.)
Then press the “Enter” key. The program will begin flashing your display card BIOS.
- Step 6.** When the flash is complete (the screen will display images again), you must reboot your computer system to make flash take effect.

The following commands are for the Nvidia Flash ROM programming utility. V3.12, for your reference only.

Nvidia Flash ROM Programming Utility V3.12 Commands List:

Commands:

Example of use: **NVFLASH -s4 -fBIOS.ROM -l**

- f<filename> Flash the ROM using <filename>, then do compare and ~CRC32.
- b<filename> Read ROM and save to <filename>.
- k<filename> Read ROM and compare with <filename>.
- x<filename> Xfer TV data from file to AT29LV512; SST29LE/VE512 SST39VF512.
- v<filename> Display file version and ~CRC32 (if no filename, acts on ROM).
- t Display 256 bytes of ROM, at offset C000h
- e Erase the ROM.

-d	Display 256 bytes of ROM, at offset 0.
-c	Check for supported EEPROM.
-l	Don't light keyboard LEDs.
-p	Don't pause if ROMfile & chip PCI VenID, DevID mismatch.
-h	Reboot the PC after other tasks completed.
-w	Write protect ROM (only works on some ROMs).
-r	Remove ROM Write protect. (only works on some ROMs).
-a	List all supported device indexes.
-m	Enable Macintosh (FCode) compatible mode.
-g<deviceid>	Force a specific device index.
-i<instance>	Force specific device instance (use with -g).
-?	Display Help
-s#	Silence level:
default	All progress messages, all beeps.
#=1	No progress messages, no beeps.
#=2	No progress messages, no progress beeps.
#=3	No progress messages.
#=4	No progress beeps.
#=5	No beeps.

3-13. How to Update the Current SILURO™ GF256 GTS Product Drivers & BIOS

You may update the newest SILURO™ GF256 GTS product drivers or BIOS files from your dealer or directly download them from our WEB site <http://www.abit.com.tw>.

	Bits per Pixel	Memory Req. (MB)	Refresh Rates (Hz)*											
			60	70	72	75	85	100						
1920×1080	8	2MB	60	70	72	75	85	100						
	16	4MB	60	70	72	75	85	100						
	32	8MB	60	70	72	75	85							
1920×1200	8	4MB	60	70	72	75	85	100						
	16	8MB	60	70	72	75	85							
	32	16MB	60	70	72	75	85							
1920 × 1440	8	2MB	60	70	72	75	85							
	16	4MB	60	70	72	75								
	32	8MB	60	70	72	75								
2048 × 1536	8	2MB	60	70	72	75								
	16	4MB	60	70	72	75								
	32	8MB	60											

* **Bold** indicates support for video overlay


Technical Support Form

 **Company Name:**

 **Phone Number:**

 **Contact Person:**

 **Fax Number:**

 **E-mail Address:**

VGA Card Product Name	*	VGA Card BIOS Version	*
Motherboard Manufacturer, Model Name and Chipset type	*	VGA Card Software and Driver Version	*
Operating System Type	*	Monitor Manufacturer and Model	*
Hardware name	Type	Specifications	
CPU Type and Speed	*		
HDD <input type="checkbox"/> IDE1 <input type="checkbox"/> IDE2			
CD-ROM Drive <input type="checkbox"/> IDE1 <input type="checkbox"/> IDE2			
System Memory Size (SDRAM)	*		
Add-On Card	*		



Problem Description:



Note 4-1-1

Information on items marked with an asterisk “*” on the *Technical Support Form* are required.

If you encounter any problems and need help from our technical staff, please take the time to fill out the *Technical Support Form* and send it to your dealer or our technical support mailbox. The mailbox address is: technical@abit.com.tw. We will try to solve your problem as soon as possible. You must provide specific information on your equipment. Also please describe in detail the problems you encountered. It's helpful and enables our technicians to analyze your problems more quickly.

Appendix A How to Get Technical Support

(From our website) <http://www.abit.com.tw>

(In North America) <http://www.abit-usa.com>

(In Europe) <http://www.abit.nl>

Thank you for choosing ABIT products. ABIT sells all our products through distributors, resellers and system integrators, we have no direct sales to end-users. Before sending email for tech support please check with your resellers or integrators if you need any services, they are the ones who sold you your system and they should know best as to what can be done, how they serve you is a good reference for future purchases.

We appreciate every customer and would like to provide the best service to you. Providing fast service to our customers is our top priority. However we receive many phone calls and a huge amount of email from all over the world. At the present time it is impossible for us to respond to every single inquiry. Therefore it is quite possible that if you send an email to us that you may not receive a response.

We have done many compatibility tests and reliability tests to make sure our products have the best quality and compatibility. In case you need service or technical support, please understand the constraint we have and **always check with the reseller who sold the product to you first.**

To expedite service, we recommend that you follow the procedures outlined below before contacting us. With your help, we can meet our commitment to provide the best service to the **greatest number of ABIT customers:**

1. **Check the Manual.** It sounds simple but we have taken a lot of care in making a well written and thorough manual. It is full of information that doesn't only pertain to motherboards. The CD-ROM included with your board will have the manual as well as drivers. If you don't have either one go to our Program Download Area of the website or FTP server at: <http://www.abit.com.tw/download/index.htm>
2. **Download latest BIOS, software or drivers.** Please go to our Program Download area on our website to check to see if you have the latest BIOS. They are developed over periods of time to fix bugs or incompatibilities. **Also please make sure you have the latest drivers from your peripheral cards makers!**
3. **Check the ABIT Technical Terms Guide and FAQ on our website.** We are trying to expand and make the FAQs more helpful and information rich. Let us know if you have any suggestions. For hot topics check out our HOT FAQ!

4. **Internet Newsgroups.** They are a great source of information and many people there can offer help. ABIT's Internet News group, **alt.comp.periphs.mainboard.abit**, is an ideal forum for the public to exchange information and discuss experiences they have had with ABIT products. Many times you will see that your question has already been asked before. This is a public Internet news group and it is reserved for free discussions. Here is a list of some of the more popular ones:

[alt.comp.periphs.mainboard.abit](#)

[comp.sys.ibm.pc.hardware.chips](#)

[alt.comp.hardware.overclocking](#)

[alt.comp.hardware.homebuilt](#)

[alt.comp.hardware.pc-homebuilt](#)

Ask your reseller. Your ABIT authorized distributor should be able to provide the fastest solution to your technical problem. We sell our products through distributors who sell to resellers and stores. Your reseller should be very familiar with your system configuration and should be able to solve your problem much more efficiently than we could. After all, your reseller regards you as an important customer who may purchase more products and who can urge your friends to buy from him or her as well. They integrated and sold the system to you. They should know best what your system configuration is and your problem. They should have reasonable return or refund policies. How they serve you is also a good reference for your next purchase.

5. **Contacting ABIT.** If you feel that you need to contact ABIT directly you can send email to the ABIT technical support department. First, please contact the support team for the branch office closest to you. They will be more familiar with local conditions and problems and will have better insight as to which resellers offer what products and services. Due to the huge number of emails coming in every day and other reasons, such as the time required for problem reproduction, we will not be able to reply to every email. Please understand that we are selling through distribution channels and don't have the resources to serve every end-user. However, we will try to do our best to help every customer. Please also remember that for many of our technical support team English is a second language, you will have a better chance of getting a helpful answer if your question can be understood in the first place. Be sure to use very, simple, concise language that clearly states the problem, avoid rambling or flowery language and always list your system components. Here is the contact information for our branch offices:

In North America and South America please contact:

ABIT Computer (USA) Corporation
46808 Lakeview Blvd.
Fremont, California 94538 U.S.A.
sales@abit-usa.com
technical@abit-usa.com
Tel: 1-510-623-0500
Fax: 1-510-623-1092

In the UK and Ireland:

ABIT Computer Corporation Ltd.
Caxton Place, Caxton Way,
Stevenage, Herts SG1 2UG, UK
abituksales@compuserve.com
abituktech@compuserve.com
Tel: 44-1438-741 999
Fax: 44-1438-742 899

In Germany and Benelux (Belgium, Netherlands, Luxembourg) countries:

AMOR Computer B.V. (ABIT's European Office)
Van Coehoornstraat 5a,
5916 PH Venlo, The Netherlands
sales@abit.nl
technical@abit.nl
Tel: 31-77-3204428
Fax: 31-77-3204420

All other territories not covered above please contact:

Taiwan Head Office

When contacting our headquarters please note we are located in Taiwan and we are 8+ GMT time. In addition, we have holidays that may be different from those in your country.

ABIT Computer Corporation

3F-7, No. 79, Sec. 1, Hsin Tai Wu Rd.

Hsi Chi, Taipei Hsien

Taiwan, R.O.C.

sales@abit.com.tw

market@abit.com.tw

technical@abit.com.tw

Tel: 886-2-2698-1888

Fax: 886-2-2698-1811

RMA Service. If your system has been working but it just stopped, but you have not installed any new software or hardware recently, it is likely that you have a defective component. Please contact the reseller from whom you bought the product. You should be able to get RMA service there.

6. **Reporting Compatibility Problems to ABIT.** Because of tremendous number of email messages we receive every day, we are forced to give greater weight to certain types of messages than to others. For this reason, any compatibility problem that is reported to us, giving detailed system configuration information and error symptoms, will receive the highest priority. For the other questions, we regret that we may not be able to reply directly. But your questions may be posted to the internet news group in order that a larger number of users can have the benefit of the information. Please check the news group from time to time.

Thank you, ABIT Computer Corporation

<http://www.abit.com.tw>

Appendix B Product FAQ

We have collected some frequently asked questions and answers for your reference, for further help with problems or questions, please see the “How to get technical support” section above.

Q: What driver should I use for my SILURO™ GF256 GTS product?

A: You can begin with the driver provided by ABIT in the package your card came in for maximum performance. However, NVIDIA™ does provide updated reference drivers ("Detonator" drivers) on their web site. Please keep in mind that since NVIDIA™ does not sell products directly to the consumer, they do not have a customer support team to answer your questions.

Q: What's APIs does the SILURO™ GF256 GTS support?

A: It will support 2D and 3D industry standard APIs, which include: DirectX and OpenGL. It will not support proprietary APIs.

Q: What if my application uses an API not supported by SILURO™ GF256 GTS?

A: It means the game will switch to software rendering mode rather than utilize hardware acceleration.

Q: Why can't run Glide with my SILURO™ GF256 GTS product?

A: Glide is a proprietary API and only applies to a small number of games. Over 90% of software developers will develop to one of the industry standard APIs.

Q: What is a GPU?

A: GPU is an acronym for “graphics processing unit.” A GPU is a single-chip processor with integrated transform, lighting, triangle setup/clipping and rendering engines that is capable of producing a minimum of 10 million polygons per second.

Q: What is the GPU's impact on the PC industry?

A: The GPU brings a major discontinuity in performance and image fidelity, and will fundamentally change the PC industry forever. 3D applications will never be the same.

Q: Will I see any difference in performance when SILURO™ GF256 GTS runs existing games?

A: YES! Current games and applications will benefit from SILURO™ GF256 GTS's higher fill rate, especially in resolutions 1024 x 768 and higher.

Q: Is the performance of SILURO™ GF256 GTS CPU-dependent?

A: SILURO™ GF256 GTS provides high-performance graphics with any CPU. In addition, SILURO™ GF256 GTS's integrated transform and lighting engines allow developers to increase geometry complexity without the performance penalty. Developers can now take full advantage of the CPU horsepower to apply more realistic physics, artificial intelligence, and game play.

Q: Can SILURO™ GF256 GTS's integrated T&L engines be used with Microsoft® DirectX® 7?

A: Yes. The SILURO™ GF256 GTS and DirectX® 7 were designed in conjunction so that maximum performance and compatibility could be achieved.

Q: If the SILURO™ GF256 GTS offloads the host CPU from performing the T&L calculations, what will be left for the CPU?

A: By offloading the T&L computations, the CPU will now have the bandwidth to dramatically improve the level of quality for physics, artificial intelligence and character animation.

Q: Is DirectX® 7 required to take advantage of SILURO™ GF256 GTS's T&L engines?

A: No. Hardware T&L can be used with OpenGL® or DirectX® 7.

Q: Does it support texture compression?

A: Yes. SILURO™ GF256 GTS supports all five formats of DX6 texture compression.

Q: What kind of bump mapping does SILURO™ GF256 GTS support?

A: SILURO™ GF256 GTS supports single-pass emboss and dot-product bump mapping. With its integrated T&L geometry power, SILURO™ GF256 GTS will enable much more realistic "bump" effects without sacrificing performance.

Q: My MPEG player displays poor quality video images, why?

A: First, you have to check your system had installed DirectX® 6 or later version, so that your MPEG player can take advantage of the hardware acceleration mode (DirectDraw).

Second, you can try to lower your display resolution, color depth, or refresh rate. Because this will allow your MPEG player to use hardware acceleration mode.

Third, switch your display mode to VGA or TV, then see if the video quality which one is better.

Q: My games or applications report "No 3d acceleration hardware found."

A: Normally, 3D mode works only in 16-bit or 32-bit color depth. Change your color depth to 16-bit (high color). Also check the DirectX or OpenGL libraries installed complete, or you can try to change to a lower display resolution.

Q: DirectX or applications report “No AGP memory available”.

A: Your Windows® 95 is not OSR2.1 or later version, or your DirectX version is not version 6.0 or later. Some AGP chipset need to installed appropriate drivers, otherwise it will not work well. Also check your motherboard BIOS for AGP aperture size, it must support at least 64MB for AGP aperture size.

