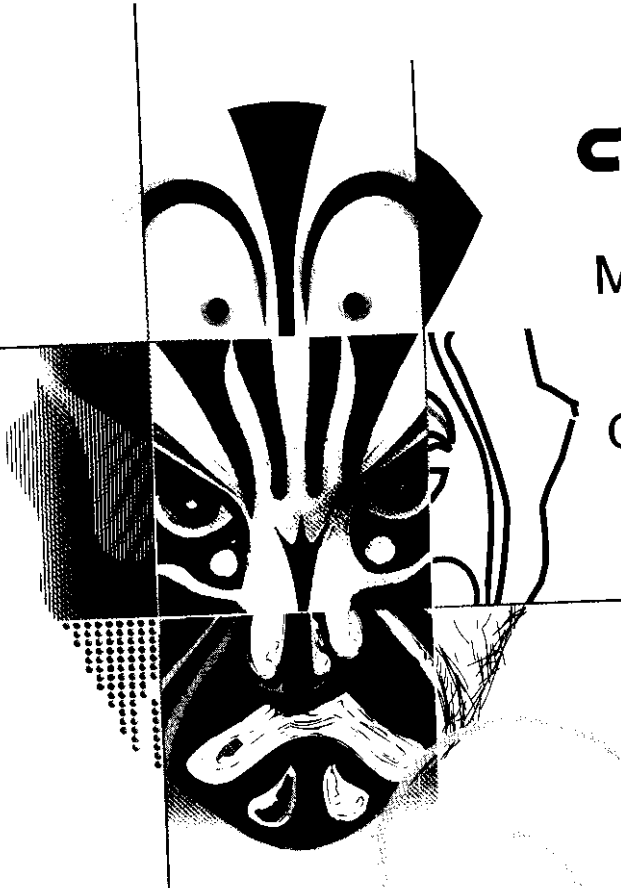


APPENDIX 5

USER'S MANUAL OF EUT

The enclosed manual is for the EUT. As you will notice on the preceding page of this manual is the **FCC WARNING** about radio and television interference as per the requirement set forth in Part 15 of the FCC Rules.



CARDEXPERTTM

MultiMedia VGA

CARDEXpert SMX

VER 1.0

NO:MMVS020-10E6RA

User's Manual

VIRGE MX

Pervasive 3D and multimedia processor

Installation Guide

Version 1.0

07/98

Trademark Acknowledgments

Microsoft is registered trademarks of Microsoft Corporation.
Powerstrip is trademark of Entech International Corporation.
All other brand and product names are trademarks or registered trademarks of their respective companies.



MMMVSO20-10E6RA

FCC Notice

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

- (1) this device may not cause harmful interference.
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Notice:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Plug the computer into a different outlet so that the two devices are on different branch circuits.
- If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions.

Warning:

Shielded interface cables must be used in order to comply with emission limits.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

CSA Notice:

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

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<i>Chapter 2 Hardware Installation</i>	2
<i>Chapter 3 Microsoft Windows 95/98 Drivers</i>	4
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1

Overview

Congratulations on the purchase of your VGA board! You are now the owner of a state-of-the-art video adapter that offers features and functionality equal to, and beyond any other in the VGA class.

FEATURES

- High-Performance Integrated 2D/3D S3 VIRGE/MX Graphics and Multimedia Accelerator
- 66MHz Baseline AGP Bus
- Support PanelLink/TMDs Digital Interface
- Display Memory support 4MB SGRAM
- CRT Display resolutions up to 1600x1200 and color depths up to 16 million
- 3rd Generation of S3d Graphics Engine support
 - Flat and Gouraud shading for 3D
 - High quality 3D texture mapping
 - Perspective correction
 - Bi-linear and tri-linear texture filtering
 - MIP-Mapping
 - Depth cueing, fogging, alpha blending
 - Video texture mapping
 - 16-bit hardware Z-buffering
- DuoView™ Dual Display Capability
- LCD support VGA, SVGA, XGA 18/24-bit TFT color panels
- LCD resolution up to 1024x768 and color depths up to 16 million
- VESA DDC/DPMS support

DRIVER SUPPORT

- Microsoft Windows 95/98
- Microsoft Windows NT4.0
- DirectX 5.0

2

Hardware Installation

CAUTION !

- Static electricity can severely damage electronic parts. Take these precautions:
- Before touching any electronic parts, drain the static electricity from your body. You can do this by touching the internal metal frame of your computer while it's unplugged.
- Don't remove a card from the anti-static container it shipped in until you're ready to install it. When you remove a card from your computer, place it back in its container.
- Don't let your clothes touch any electronic parts.
- When handling a card, hold it by its edges, and avoid touching its circuitry.

Before You Begin

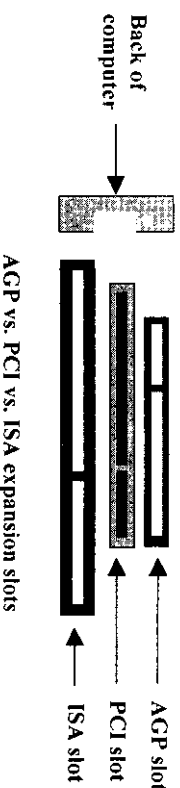
Before you process further, make sure your computer system meets the peripheral requirements and switch to the standard VGA display driver.

Prepare Your Computer for Installation

Prior to working on your computer, make sure the power of the computer and any related equipment is turned off.

Select a Vacant Expansion PCI (AGP) Slot

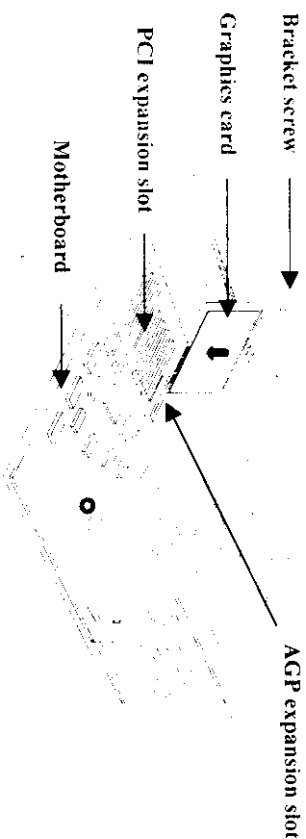
Most AGP (PCI) bus computers have a combination of AGP (PCI) and ISA expansion slots. AGP (PCI) are usually made with plastic of a contrasting brown color (beige color), and are shorter than other slots in your computer. Your system manual should identify the AGP (PCI) slots. Plugging your Graphic card into a non-AGP (PCI) slot could damage the card, your computer, or both.



2 Hardware Installation

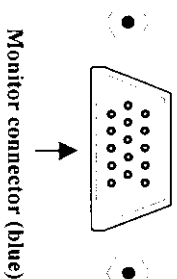
Insert your Graphic Card

Remove the cover for the slot you intend to use and save the screw for the mounting bracket. Then, pick up the Graphic card and position it over the expansion slot you've chosen. Push the card with firmly and evenly until it's fully seated in the slot. Replace the screw to secure the bracket of the Graphic card to the computer chassis.



Connect the monitor

Plug your monitor cable into the monitor connector on your Graphic card. Make sure the other end of the monitor cable is properly connected to your monitor.



3 Microsoft Windows 95/98 Drivers

CAUTION!

- Before installing the Display driver, make sure your Windows 95/98 is installed in VGA mode and work fine.
- For Windows 95 user, please install the DirectX before you want to play the MPEG Movie Player

Installation of the Windows 95/98 drivers and utilities is a two-step procedure: (1) first install the Windows 95/98 Utilities using the Setup program, and then (2) install the Windows 95/98 drivers using standard Windows 95/98 procedures. Although we do not recommend this, you can install the display drivers for Windows 95/98 without installing the support files.

Setup VGA Mode

Click the right mouse button anywhere on the Windows 95/98 desktop and select Properties from the pop-up menu that appears on screen. Select Settings | Change Display Type and then click the [Change] button for Adapter Type. When the Select Device dialog box appears on the screen, please select [Standard display types] from the manufacturers and select Standard Display Adapter (VGA) from the Models then click OK button.

Setup Driver

1. Turn on your computer and start Windows 95/98.
2. Insert the Driver CD into your CD-ROM driver.
3. Type D:\CDSETUP [Enter] in the Run dialog box.
4. The PowerStrip Setup Wizard dialog box will appear on the screen, please click the "Finish" button and follow the instruction to complete the installation.
5. In Win98, the Update Device Driver Wizard dialog box will appear, please click "next" button and follow the instruction on screen to install.
6. At the same time during the installation, the driver will also choose the correct path and VGA card automatically so that you can easy to finish the installation. (e.g., S3 Inc. VIRGE/MX)
7. If the driver doesn't choose the correct path and VGA card automatically, please click the right mouse button anywhere on the Windows 95/98 desktop and select Properties from the pop-up menu that appears on screen. In Display Properties, select Settings | Change Display Type (If you use the OSR2 please select Settings | Advanced Properties.) and then click the Change | Have Disk button and enter the path to the driver installation diskette (e.g., D:\win95). Click "OK" and follow the instruction on screen to install.
8. If you use the Win98 please select Settings | Advanced | Adapter . Click the Change | Next button. In Update Device Driver Wizard dialog box, choose the second checkbox: Display a list of all the drivers in a specific location, so you can select the driver you want. Then click "next" and click "Have Disk" button and follow the instruction on screen to finish the installation.
8. Click OK button. Finally click Apply button to restart your computer.

Microsoft Windows NT Drivers

CAUTION!

- Before installing the video driver, make sure your Windows NT is installed in VGA mode and work fine.
- Before installing the video driver, please install the Windows NT service pack 3 package first (or please download these drivers from Microsoft web site), otherwise the PowerStrip Utility will not work correctly.

If you are running Windows NT, please note that drivers for NT are not compatible with earlier releases of NT, and *vice versa*. Consult your dealer, local user support groups or online services from time to time to ensure you have the latest release for the version of NT you are running.

To install the optimized display drivers for Windows NT, you must be running NT and follow Microsoft standard display driver installation procedure as documented in the NT user manual. Note the somewhat different installation procedures between NT and earlier release below.

Setup Driver

1. Turn on your computer and start Windows NT.
2. Insert the **Driver CD** into your CD-ROM driver.
3. Type **D:\CDSETUP [Enter]** in the Run dialog box.
4. The PowerStrip Setup Wizard dialog box will appear on the screen, please click the "finish" button and follow the instruction to complete the installation.
5. At the same time during the installation, the driver will also choose the correct path and VGA card automatically so that you can easy to finish the installation.
6. If the driver doesn't choose the correct path and VGA card automatically, please click the right mouse button anywhere on the Windows NT desktop and select **Properties** from the pop-up menu that appears on screen. In **Display Properties**, select **Settings | Display Type** and then click the **Change | Have Disk** button and enter the path to the driver installation diskette (e.g., D:\winNT4). Click "OK" and follow the instruction on screen to install.
7. Click **OK** button. Finally click **Apply** button to restart your computer.

Windows 95/98/NT Display Properties

Windows 95/98/NT allows you to select resolution, color depth, refresh frequency and font size using the standard Windows 95/98/NT Display Properties sheet, which can be accessed by right clicking anywhere on the Windows 95/98/NT desktop, and then selecting Properties from the pop-up menu that appears on screen.

Display Utility for Windows

CAUTION!

- For maximum compatibility and flexibility, the PowerStrip can be loaded and unloaded dynamically, but note that many of the features it provides are only available while the PowerStrip is running.

PowerStrip

The **PowerStrip** is a display control and desktop enhancement utility for Windows 95/98/NT, specially designed and optimized for use with your graphics accelerator. You should think of the PowerStrip as a kind of supplementary "device driver" which works in conjunction with your accelerator's display driver.

Installation

The PowerStrip is automatically installed when you use the Setup program under windows 95/98/NT (refer to Chapter 3-4). After you finish the installation, the About the PowerStrip dialog box will appear on the screen, then click "OK". Then click **Program | PowerStrip | PowerStrip** (Figure 5-1) or double click on the "Monitor" | **Show PowerStrip Configuration** (Figure 5-2) icon in the System tray to show the PowerStrip Properties on your screen. (Figure 5-3)

Note: If you need the more information that is referred to the pstrip.doc file or on line help where locate at **Programs | PowerStrip | Online Documentation**. (Figure 5-1)

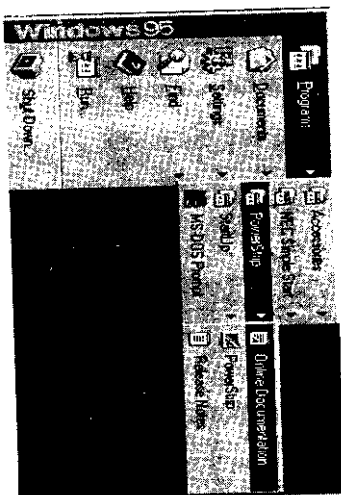


Figure 5-1



Figure 5-2



Figure 5-3 PowerStrip toolbar

5 Display Utility for Windows

LCD for Windows 95

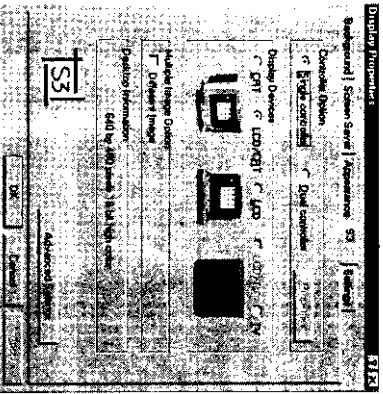


Figure 5-4

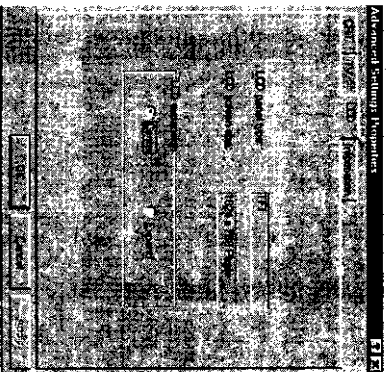


Figure 5-5

Click the right mouse button anywhere on the Windows 95 desktop and select **Properties** from the pop-up menu that appears on screen. In **Display Properties** dialog box, select **S3** as Figure 5-4.

Controller Option: Select between a Single or Dual display controller state.

Single controller: In this mode, you can select the panel only display, the CRT only display, or the panel/CRT simultaneous display.

Dual controller: In this mode, you can make one of three choices: CRT, LCD, LCD/CRT.

When either CRT or LCD/CRT is selected the refresh rates that can be used are determined by the capabilities of the CRT.

Properties: Click this button to invoke the Video Output dialog to select between the panel (LCD) and CRT/TV for the video output.

Display devices: Shows the active display devices.

Multiple Image Option: If you choose this item, the LCD/CRT will show the different size image on your LCD screen and CRT screen.

Click **Advanced Settings** icon, choice **LCD** item as Figure 5-5.

LCD center/expand: the source image can be centered or expanded when the desktop resolution is smaller than the panel (LCD) resolution.

5 Display Utility for Windows

LCD for Windows 98

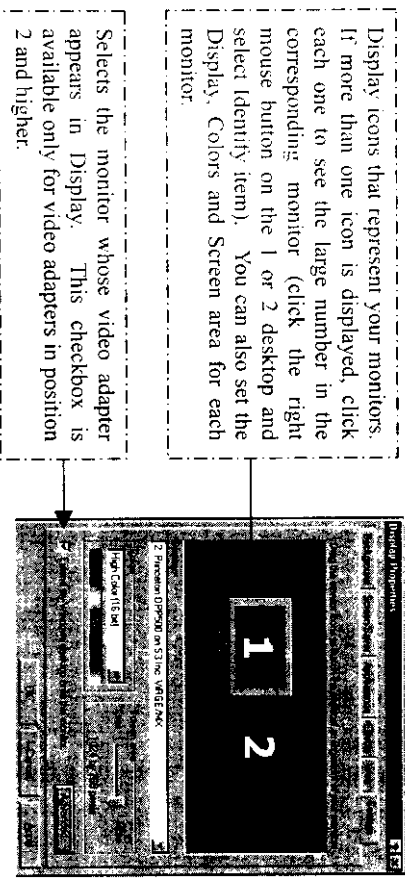


Figure 5-6

Click the right mouse button anywhere on the Windows 98 desktop and select **Properties** from the pop-up menu that appears on screen. The **Display Properties** dialog box will appear, please click **Settings** item as Figure 5-6.

Click **Advanced** icon in **Display Properties** dialog box, the **S3 Inc. VIRGE/MX** **Properties** is the same as Figure 5-4 will appear on the screen that is refer to Page 7.

Display Memory Configuration

Memory-Resolution/Color

	4MB		
	256 color	64K color	16.7M color
640x480	85Hz	85Hz	85Hz
800x600	85Hz	85Hz	85Hz
1024x768	85Hz	85Hz	85Hz
1280x1024	75Hz	75Hz	-
1600x1200	48(1)Hz	48(1)Hz	-

Monitor Connector Pin Assignments

Pin no.	Function	Pin no.	Function
1	Red Video	9	Key (no connection)
2	Green Video	10	Sync Return (ground)
3	Blue Video	11	NC
4	NC	12	DDC DATA
5	Ground	13	Horizontal Sync
6	Red Return (ground)	14	Vertical Sync
7	Green Return (ground)	15	DDC CLOCK
8	Blue Return (ground)		

Problem: Software programs will not run with the drivers.

Solution:

1. Try running the software with standard VGA drivers supplied with the application program. Most software programs have standard IBM VGA drivers. If the program does not work it may be a problem with the application software.
2. Removed all TSR (Terminate and Stay Resident) programs from your system (specially in DOS system) and try the program again.

Problem: How do I get the latest drivers for the card?

Solution: You can check with the relative web site to download them.

Problem: When I boot the computer the display is not black. It is a different color, such as blue.

Solution:

Check the monitor connection. Generally blue, or other color screens are related to improper connections between the video card and monitor cable.

Problem: I am using a high resolution multi-frequency monitor. The vertical refresh is set for 140Hz using 1024x768 resolution. When going into Windows or other graphics applications, my display size shrinks quit a bit on the screen.

Solution:

Use a slower vertical refresh rate. The vertical refresh rate may be set too high for the monitor to support it. The monitor may be compensating for the high frequency rate by reducing the screen size.

Problem: After installation and restarting, Windows 95 informs me that display setting is still incorrect. What can I do?

There may be conflict between previous and current display drivers. This is caused by not complete removal of previous display driver. Try the following steps to remove it:

Solution:

- (1) Use right button of mouse to click on "My Computer" icon on desktop.
- (2) Select "Properties" and "System Properties" box appears
- (3) Click on "Device Manager" tab
- (4) You will see a list of devices on your computer.
- (5) Open "Display adapters" in the list (double click it).
- (6) You will find two (or more) conflicted adapters listed here.
- (7) Remove all previous adapters by selecting them and press "Remove"
- (8) Close Device Manager and restart Windows 95.
- (9) Now display driver will work correctly.

Trouble Shooting

Problem: After installing the driver, Windows 95 doesn't prompt me for restarting

and the driver still doesn't work after I reboot it by myself.

You may have installed similar drivers before. Try the following steps to install:

Solution:

- (1) Use right button of mouse to click on "My Computer" icon on desktop.
- (2) Select "Properties" and "System Properties" box appears
- (3) Click on "Device Manager" tab
- (4) You will see a list of devices on your computer.
- (5) If "Display adapters" appears in the list, click it.
If "Display adapters" doesn't appear, jump to step 9 and continue.
- (6) The name of your card will be listed in the box. Double click it.
- (7) The properties box of your card appears. Select "Driver" tab.
- (8) Click "Change Driver.." and follow the installation steps.
- (9) Click "Other devices" you will see your card is listed.
- (10) Click on the name of card, the properties box appears.
Select "Driver" tab.
- (11) Click "Change Driver.." and follow the installation steps.

Trouble Shooting

When you need advanced technique service, please Complete this form and FAX to your dealer.

Your name:

Phone :

Product S/N:

PCB NO.:

HARDWARE CONFIGURATION

Mainboard Chipset:	CPU Clock:	MHz
Mainboard CPU:	VGA Memory Type:	
Mainboard Memory:	MB	VGA Memory MB
Mainboard Brand:	VGA Memory Brand:	
Cache Memory:	KB	FDD/HDC Card:
Monitor:	Horizontal Freq.:	KHz to KHz
	Vertical Freq.:	HZ to HZ
Other Cards on Mainboard:		

Note:

SOFTWARE CONDITION
CONFIG.SYS:
AUTOEXEC.BAT:
Operation System or Test Program:
Application Software or Test Program:
Problem Description:
Note: