

TABLE OF CONTENTS

CHAPTER 1 INTRODUCTION	1
1.1 SOFTWARE COMPATIBILITY	1
1.2 DISPLAY MODES SUPPORTED	2
1.3 MONITOR COMPATIBILITY	3
CHAPTER 2 HARDWARE INSTALLATION	4
2.1 INSTALLATION	4
CHAPTER 3 SOFTWARE INSTALLATION	5
3.1 S3REFRSH UTILITY	5
3.2 WINDOWS 3.1X AND WINDOWS FOR WORLDGROUPS DRIVER	6
3.3 WINDOWS 95 DRIVER	8
3.4 OS/2 DRIVER (OPTION)	9
3.4.1 Installation Considerations	9
3.4.2 Installation Instructions	10
3.5 AUTODESK ADI 4.2 DRIVER (OPTION)	12
3.6 MICROSTATION PC DRIVER	13
3.7 WINDOWS NT 3.5X	14
3.8 GALILEO UTILITY FOR WINDOWS 3.1	17
3.9 MEDIAMATICS MPEG ARCADE 95 PLAYER	18
3.10 XING MPEG DRIVER (OPTION)	20

TRADEMARKS

All product and brand names are trademarks and/or registered trademarks of their respective holders.

CHAPTER 1 INTRODUCTION

Comment [字淨建設1]:

The S3d ViRGE™ PCI VGA card is integrated 3D video/graphics accelerator to provide a full-featured high performance 3D rendering engine for games and other interactive 3D applications. Also it provides excellent 2D graphics performance at Windows applications. They provide the flexible features to meet a wide range of user requirements.

- High performance 64-bit 3D/2D graphics engine
- Full PCI compatibility.
- Up to 75 Hz screen refresh rates.
- Flat and Gouraud shading for 3D, high quality 3D texture mapping
- Accelerated modes include 800x600x16.7M colors, 1024 x 768 x 64K colors and 1280 x 1024 x 256 colors
- Full software support, including enhanced drivers for Windows™ 3.1, Windows™ 95, Windows™ NT, AutoCAD® applications, and MicroStation.
- Galileo Windows utility, which provides the capability of changing resolutions, color depth and refresh rates within Windows.

1.1 SOFTWARE COMPATIBILITY

The VGA compatibility includes backward compatibility with the EGA, CGA and MDA standards. All DOS software will include drivers for at least one of these display types and will be fully compatible with the card. This means that all DOS software will run correctly with the card without modification. It is also fully compatible with PCI BIOS extensions for resolutions higher than 640 by 480.

When the card is used in VGA, backward compatibility or 16 color PCI modes, the drawing engine of the S3d ViRGE™ is not used. The speed in these modes will be comparable to the fastest type of standard VGA card.

1.2 DISPLAY MODES SUPPORTED

The card supports all the following graphics modes. (IL) means that the display is interlaced, i.e., only every other line is repainted each refresh cycle. Some monitors may not be able to support all these modes and refresh rates. If the screen is not displayed properly under MS Windows or another application, your monitor may not supported or lower the refresh rate. Refer to your monitor owner's manual for information on the monitor capabilities.

Resolution	2MB DRAM	4MB DRAM
640 x 480 x 4	✓	✓
640 x 480 x 8	✓	✓
640 x 480 x 16	✓	✓
640 x 480 x 24	✓	✓
800 x 600 x 4	✓	✓
800 x 600 x 8	✓	✓
800 x 600 x 16	✓	✓
800 x 600 x 24	✓	✓
1024 x 768 x 4	✓	✓
1024 x 768 x 8	✓	✓
1024 x 768 x 16	✓	✓
1024 x 768 x 24		✓
1152 x 864 x 8	✓	✓
1280 x 1024 x 4 (IL)	✓	✓
1280 x 1024 x 8	✓	✓
1280 x 1024 x 16 (IL)		✓
1600 x 1200 x 4	✓	✓
1600 x 1200 x 8 (IL)	✓	✓

1.3 MONITOR COMPATIBILITY

The card will work with any VGA, Super VGA or Multisync monitor. Super VGA monitors are monitors that support IBM standard VGA plus the 800 x 600 extended mode used by most VGA cards, and the 1024 x 768 interlaced mode used by most VGA cards and the IBM 8514A.

Multisync monitors are more expensive and will work at all Super VGA resolutions plus additional higher resolutions or refresh rates. The most useful multisync monitor specification for determining maximum resolution and refresh capability is the horizontal frequency range. For PC use, the lower end of the range must be no greater than 30 KHz. The upper limit is usually 48 KHz, 57 KHz or 64 KHz. These correspond to a maximum resolution of 1024 x 768, 60 Hz refresh, 1024 x 768, 72 Hz refresh and 1280 x 1024, 60 Hz refresh respectively.

By default, the card will drive your monitor at a screen refresh rate of 60 Hz. In other words, it completely repaints the screen 60 times each second. If the screen is not displayed properly when you boot your system, your monitor may not support this refresh rate for the resolution chosen. In this case, you must either lower the resolution to one that can be supported at 60Hz or lower the refresh rate. The maximum refresh rate supported by your monitor is specified with the Refresh Rate utility. See the Windows 3.1 Driver Installation section for instructions on the installation and use of this utility.

Refer to your monitor owner's manual for information on the monitor capabilities. If you are not sure what refresh rate is supported, you can always try a higher rate. If the screen looks good, the rate is supported (and will be easier on your eyes).

CHAPTER 2 HARDWARE INSTALLATION

2.1 INSTALLATION

1. Turn off your computer and disconnect all peripherals.
2. Remove the cover of the computer per the owner's manual.
3. Install the card in one of the PCI bus slots.
4. Replace the cover and reconnect the peripherals.

If the system successfully powers up and the normal DOS boot-up messages appear on the screen, the card is installed properly. If the system does not boot, check the following:

If your system has serial port, Local area network, modem or fax/modem adapter cards that use the COM4 port address you may need to change this address or disable it to avoid a conflict with the card. Although it does not use COM4, some older cards set to COM4 will incorrectly respond to CPU accesses to the card. Refer to the documentation supplied with your serial port, Local area network, modem, or fax/modem card for specific instructions regarding changing the serial port address.

If you are using memory management software, be sure to exclude the card BIOS address range C000 - C7FF. If your memory manager is QEMM you should also disable the stealth mode. Please refer to your software documentation for specific instructions.

CHAPTER 3 SOFTWARE INSTALLATION

The card is 100% VGA compatible and as such needs no display drivers to run application software correctly in standard

VGA resolutions. However, the display drivers described in this section are supplied because they can provide improved speed, color depths and resolution for supported software application packages.

3.1 S3REFRSH UTILITY

This is a DOS-based utility which allows the user to change the refresh rate of the display. The install menu has an option for this utility.

This utility requires that a mouse driver be installed. Without a mouse driver, command line parameters are required using the following options:

USAGE (without mouse):

S3REFRSH X Y

where X= 640, 800, 1024, 1280

and Y= 0 (56Hz), 1 (60Hz), 2 (70Hz), 3 (72Hz), 4 (75Hz), 5 (Interlaced)

Note that 1600x1200 and 1152x864 each have a single refresh rate so this utility is not needed.

With a mouse driver, a menu will be displayed upon loading S3REFRSH. The refresh rate options are shown on the left side and the corresponding resolutions are displayed on top of the table. Click on the desired boxes. The "X" marks mean that the selection is not valid; selected refresh rates are defined by the check marks. Click on the EXIT button to set the new refresh rate. The utility will ask if the user wishes to save the changes in AUTOEXEC. BAT. Choose YES if the user wants to use the new refresh rate values every time the system boots.

3.2 Windows 3.1x and Windows for Workgroups Driver

The section provides instructions, using the installation diskette, to install S3 Windows drivers. The following installation procedure loads drivers and related files onto your PC.

3.2.1 DCI Support

With S3d ViRGE hardware, DCI-compatible applications can use the DCI Provider and by-pass GDI. The DCI Provider uses the off-screen video memory as a cache for color space conversion, hardware stretching, and filtering of video data. The S3 DCI driver enhances performance by improving direct screen access, color-space conversion, and filtering.

3.2.2 Installation Instructions

The Windows setup program installs and modifies all of the necessary files. Follow these steps to install the S3 Windows 3.1, Windows 3.11, and Windows for Workgroups™ driver.

- Step 1 Exit from Windows.
- Step 2 From the DOS prompt, change to your windows directory, "A:\WIN31".
- Step 3 Type **setup**.
- Step 4 The current Windows configuration is displayed.
- Step 5 Use the arrow keys to highlight the Display entry and press ENTER.
- Step 6 A list of available display adapters is displayed.

- Step 7 Use the arrow keys to highlight Other (Requires disk provided by a hardware manufacturer) and press ENTER.
- Step 8 Insert the driver installation diskette into the diskette drive.
- Step 9 Press ENTER (or first enter another diskette drive letter).
- Step 10 Select the screen resolution and press ENTER.
- Step 11 Files are copied from the driver installation diskette into the Windows directory on the hard disk. (A message may be displayed asking for a subdirectory location. If this occurs, enter the diskette drive letter.) When the installation is complete, the DOS prompt returns.
- Step 12 Start Windows.

The driver for Windows 3.1, Windows 3.11 or Windows for Workgroups installation is now complete.

3.3 S3 WINDOWS 95 DRIVER

The section provides instructions to use the installation diskette. Following the following installation procedure loads drivers and related files onto your PC.

Installation Instructions

- Step 1 Start Windows 95.
- Step 2 Click the Start button.
- Step 3 Double-click on the Display icon in the Setting->Control Panel folder.
You can also click the right mouse button anywhere on the desktop and select the Properties option from the pop-out menu.
- Step 4 Choose the Settings tab.
- Step 5 Choose the Change Display Type... button.
- Step 6 Under Adapter Type choose the Change button.
- Step 7 Choose the Have Disk button.
- Step 8 Change directories to **A:\WIN95** and choose the OK button.
- Step 9 Select S3.INF and choose the OK button.
- Step 10 Select **S3 INC. VIRGE** PCI driver from the list and choose the OK button.
- If a message stating that one or more driver files is older than the files on the system respond YES to overwrite the files.
- Step 11 Choose the Close button.
- Step 12 Select the appropriate resolution using the Desktop Area and Color Palette options.
- Step 13 Choose the Apply button.
- A System Settings Change box appears.
- Step 14 Choose Yes to restart your PC.

The Windows 95 driver installation is now complete.

3.4 S3 OS/2 DRIVER INSTALLATION (option)

<p>Note: OS/2 version 2.1 driver is available upon request. Please contact your vendor for details.</p>
--

3.4.1 Installation Considerations

1. You must know the maximum vertical refresh rate as well as the maximum resolution supported by the monitor.
2. When installing the S3 driver to replace a non-S3 driver (e.g., SVGA), the standard IBM VGA driver must be installed first. This is not required if you are replacing an S3 driver.
3. If you are copying the driver onto blank diskettes, you must label the diskettes correctly. The first driver diskette must be labeled S3 DRV1. The second driver diskette must be labeled S3 DRV2.
4. An S3 chip-based card must be installed in the computer before you install the driver. (The driver reads information from the accelerator chip.)

3.4.2 Installation Instructions

The OS/2 setup program installs and modifies all of the necessary files. Follow these steps to install the OS/2 driver.

Step 1 Boot up OS/2 in the VGA mode.

Step 2 Save all open data files before continuing the S3 driver installation.

- Step 3 Close the Win-OS/2 session and all Seamless Windows applications. (Seamless applications are Windows applications that run on top of the PM Desktop.)
- Step 4 Open an OS/2 command prompt (windowed or full screen).
- Step 5 Insert the driver diskette into the diskette drive A.
- Step 6 Type **A**.
- Step 7 For S3 drivers version 2.58 and earlier
- Type **S3INST A: C:** and press ENTER. (A is the diskette drive; C is the drive on which OS/2 is installed.)
 - Exit the OS/2 command prompt, remove the diskette from the drive.
 - Shut down and reboot the system.
- Step 8 For S3 drivers version 2.581 and newer
- Type **setup A: C:** and press ENTER. (A is the diskette drive; C is the drive on which OS/2 is installed.)
 - When the installation is finished, you are asked to restart your system.
 - Remove the diskette.
 - Select the OK button.
- Step 9 Double click on the OS/2 System icon.
- Step 10 Double click on the System Setup icon.
- Step 11 Double click on the Display Driver Install icon.
A Display Driver Install dialog appears.
- Step 12 When prompted by the Display Driver Install dialog, select Primary Display and choose the OK button.
- Step 13 Select the **S3 INC. VIRGE** Version option from the Primary Display Adapter Type dialog and select the OK button.

Step 14 Select the appropriate option from the Monitor Configuration/Selection Utility dialog, and choose the OK button. The Source Directory dialog appears.

Step 15 Reinsert the diskette in drive A:.

Step 16 Select Install.
The Installation Program may pause and display prompts to overwrite certain files.

Step 17 Answer **YES** for each file. A shut down message appears.

Step 18 Choose the OK button.

Step 19 Remove the driver diskette from the drive.

Step 20 Shut down and reboot system.

After you reboot, the system comes up using the newly installed driver.

3.5 AUTODESK ADI 4.2 DRIVER (option)

3.5.1 Driver Installation for All Applications

The section provides instructions, using the installation diskette, to install the ADI 4.2 driver. The following installation procedure loads drivers and related files onto your PC.

3.5.2 Installation Instructions for Driver Files

- Step 1 Start your PC in the DOS environment.
- Step 2 Before starting, make a backup copy of the distribution disk using the DOS DISKCOPY command.
- Step 3 Insert the ADI 4.2 Device Driver distribution diskette into your floppy disk drive.
- Step 4 Type **A: INSTALL** and press ENTER.
- Step 5 Use the arrow keys to highlight your choice for target drive. (The files are copied to the target drive.) Press ENTER.
- Step 6 Select the version of AutoCAD desired. If you are installing for multiple Autodesk applications or versions, highlight the option `Release 10` or `11`. To accept your selection, press ENTER to continue.
- Step 7 If the subdirectory name is incorrect, type the correct subdirectory. Press ENTER.
- Step 8 Use the arrow keys to highlight any additional options. Press ENTER after each selection.

The ADI 4.2 device driver files will be copied to the subdirectory you specified during installation.
- Step 9 Press any key to exit the install program.

3.6 MICROSTATION PC DRIVER

Installation Instructions

The section provides instructions, using the installation diskette, to install the panaStation driver. The following procedure loads drivers and related files onto your PC.

- Step 1 Start your PC in the DOS environment.
- Step 2 Make a backup copy of your panaStation diskette, using the DOS DISKCOPY command.
- Step 3 Insert the panaStation disk into your floppy disk drive.
- Step 4 Type **A:\PANA\INSTALL** and press ENTER.
- Step 5 Use the arrow keys to highlight the correct MicroStation version and drive letter and press ENTER.
- Step 6 If the subdirectory name is incorrect, type the correct subdirectory. Press ENTER.
- Step 7 Use the arrow keys to highlight additional options. Press ENTER after each selection.

The panaStation files will be copied to the drive and subdirectory you specified during installation.

- Step 8 Press any key to exit the installation program.

The panaStation driver installation is now complete. Use the following sections to reconfigure MicroStation for use with the driver.

3.7 WINDOWS NT 3.5x

Microsoft supplies S3 video driver files,
C:\WINNT35\SYSTEM32\DRIVERS\S3.SYS and
C:\WINNT35\SYSTEM32\S3.DLL.

This S3 Windows NT 3.5x driver installation will overwrite these files; therefore, you may want to save the original files to a backup file or location.

Installation Instructions

- Step 1 Under DOS, please do copy " A:\NT35\DISK1. A:\ "
- Step 2 Start Microsoft Windows NT
- Step 3 From the Program Manager window, open the Main window and double-click the Control Panel
- Step 4 Double-click the Display icon
- Step 5 Choose Change Display Type button
The Display Type dialog box appears
- Step 6 Choose the Change button in the Adapter Type panel
A Select Device dialog box appears
- Step 7 Scroll down the Select Device text box, and select model
S3 Video Driver Update 1.20.09
- Step 8 (*for Server station*)Choose the Install button. OR
(*for Workstation*)Choose the Other button.
An Installing Driver dialog box appears.
- Step 9 Choose the Yes button.

A Windows NT setup dialog box appears.

Step 10 Choose the New button.

A Windows NT setup dialog box appears.

Step 11 Type **A: \NT35** .

Step 12 Choose the Continue button.

A Setup dialog box appears. An error message is displayed,
Are you using a down level Installation disk?.

Step 13 Choose the OK button.

Step 14 Scroll down the Select Device text box *past* the first S3
Compatible Graphics selection.

Step 15 Choose the second S3 Compatible Graphics selection
at the bottom of the scroll list.

Step 16 Choose the Install button.

An Installing Driver dialog box appears.

Step 17 Choose the Yes button.

A Windows NT setup dialog box appears.

Step 18 Choose the New button.

A Windows NT setup dialog box appears.

Step 19 Enter **A: \NT35**; Choose the Continue button. Choose the
OK button.

The Installing Driver dialog box appears with a message to
restart Windows NT.

Step 20 Choose the Restart Now Button to restart Windows NT with the new driver.

Step 21 Remove the diskette from the diskette drive A:.

Step 22 When re-booting select the Windows NT boot option.

Invalid Display Setting dialog box appears stating, A new graphics driver has been installed. The default display resolution has been temporarily used by the system. Use the Display option in the Control Panel to select your preferred display resolution.

Step 23 Choose the OK button.

Step 24 Select List All Modes.

Step 25 Choose a Resolution (of your desktop area), Color Palette and Refresh (the refresh rate).

Step 26 Choose the Test button to test the chosen mode.
A Test Mode dialog box appears.

Step 27 Choose the OK button.

Watch the test pattern to verify resolution, color, and flicker are acceptable. (If the screen is blank, the refresh rate is unacceptable.) After a few seconds, the test pattern will disappear, and a dialog box appears.

Step 28 If the test pattern is not acceptable, choose NO and repeat through Steps Step 25 through Step 28,. otherwise, go to StepStep 29.

Step 29 Once test pattern is acceptable, choose YES and select the Restart button to restart Windows NT.

Note : After you plug in the S3 VGA card, and reboot the system, you should choice “Windows NT Server Version 3.5 (VGA mode)”.

3. 8 Galileo Utility for Windows 3.1

Note: The utility is available upon request. Please contact your vendor for details.

The section provides instructions, using the installation diskette, to install S3 Galileo™. The following installation procedure loads drivers, and related files onto your PC. S3 Galileo is a utility for Microsoft Windows that allows you to access or change the following items:

- resolutions, color depths and refresh rates
- desktop font size
- display power management
- monitor centering
- feature connector data paths
- display data channel data file

3.8.1 Requirements

Your PC must have the following items installed:

- Windows 3.1X
- S3 Windows driver
- S3 multimedia accelerator

3.8.2 Installation

The Galileo utility files are on a diskette. The installation program copies all of the necessary files and modifies Windows files.

Follow these steps to install S3 Galileo from within Windows.

- Step 1 Insert the S3 Galileo diskette in diskette drive A:.
- Step 2 From the File menu in the Program Manager, select the Run... option.
- Step 3 Type **A:\GALILEO\SETUP.EXE** in the Command Line text box and press the ENTER key.
- A dialog box appears.
- Step 4 Press the Continue button.
- After copying (and decompressing) the files to your Windows directory, a dialog box appears.
- Step 5 Press the OK button.
- The Galileo installation is now complete.

3.9 MEDIAMATICS MPEG ARCADE Player (Win 31, Win 95)

The VGA card supports software MPEG function, this is a OM-1 compatible MCI driver enabling software only Decode of MPEG-1 streams. It can read MPEG-1 System, Video and Audio Streams of up to 1.5Mbits/sec from Hard Disk or ISO/High Sierra CD-ROMS and play back on Windows 3.1 and Windows 95. For more information, please refer to "readme.doc" file.

3.9.1 Hardware requirements :

For Windows 95 --

- Pentium based system with 256K L2 cache
- Direct Draw Enabled graphics Card (recommended)

- SVGA graphics, 256 color minimum
- 8/16 bit Audio card with Windows 95 Drivers
(For 8 bit cards - please configure the MPEG driver using Multimedia section in the Windows 95 Control Panel.)

For Windows 3.1x --

- Pentium based system with 256K L2 cache
- **Video for Windows 1.1d or 1.1e** by Microsoft
- DCI Enabled graphics card with OffScreen Color space support and DCI software (dciman.d11 and the DCI service provider)
- CD-I, Video CD compatible CD ROM
- 8/16 bit Wave card with Windows Drivers, the factory default is 16 bit PCM Wave data (for 8 bit cards please configure the driver using Control Panel/Drivers/Setup)

3.9.2 Installation

Whenever you change any configuration - either the Audio or Video quality from the Device/Configure Dialog - please stop playing all clips and exit all running instances of Media Player. New settings will take effect when Media Player is re-run.

※ **Playing MPEG files from Windows 3.1x**

1. Install the graphics device driver and DCI software and Video for Windows 1.1d or 1.1e
2. Install Mediamatics MPEG Arcade Player by running the program SETUP. EXE on the software disk.

※ **Playing MPEG files from Windows 95**

To play a MPEG file (.MPG, .MPA, .MPV) run Media Player in one of two ways :

- Start/Programs/Mediamatics Software MPEG/Arcade Media Player
- Start/Programs/Accessories/Mediamatics/Media Player

1. On the Device menu, click the Mediamatics Arcade Player
2. Double-click the file you want to play. (files with

- .mpg, .mpa, .mpv extension)
3. Click play the play the MPEG file.

※ **Playing Video CD files from Windows 95**

To play a MPEG file (...DAT) run Media Player in 1 of 2 ways :

- Start/Programs/Mediamatics Software MPEG/Arcade Media Player
- Start/Programs/Accessories/Mediamatics/Media Player

1. On the menu, click the Mediamatics Arcade Player
2. Double-click the file you want to play in the AVSEQ directory on the CD-ROM drive. (files with .dat extension)
3. Click play the play the Video CD file.

The Arcade Player for Windows95 is capable of playing only the newer **CD-i** discs which carry the **Video CD** label. **The DISC's that can be played back have the label "VIDEO CD" on the jacket / disc.**

3.10 XING MPEG DRIVER (option)

Installation from a floppy diskette :

1. Install an S3 Windows driver compatible with DCI 1.6.
2. Launch Windows 3.1x or Windows 95.
3. Insert the Xing Native-MPEG Driver in driver "A" or "B".
4. Run **SETUP** from the driver.
5. After a successful installation, the SETUP program will automatically restart Windows.

To Use Video for Windows Media Player with Xing Native-MPEG Driver :

The Xing Native-MPEG Driver should be used with Microsoft Corporation's Video for Windows version 1.1e Media Player (11/19/93). Refer to its User's Guide for more information.

To Specify the Xing Native-MPEG Driver :

1. From the Device menu, select the Native-MPEG...device.
The open dialog box appears.

2. Select the drive, subdirectory and name of the MPEG file you want to play.