ASUS® AGP-V3500 Series

3D Multimedia Accelerator

USER'S MANUAL

Hardware & Video Drivers

AGP-V3500/Pure /32MB

AGP-V3500/F /32MB

AGP-V3500/T /32MB

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Product Name:	**ASUS AGP-V3500 Series**
Manual Revision:	**1.01 E387**
Release Date:	**July 1999**

ASUS CONTACT INFORMATION

ASUSTeK COMPUTER INC. (Asia-Pacific)
Marketing
Address: 150 Li-Te Road, Peitou, Taipei, Taiwan 112
Telephone: +886-2-2894-3447
Fax: +886-2-2894-3449
Email: info@asus.com.tw

Technical Support
Tel (English): +886-2-2894-3447 ext. 706
Tel (Chinese): +886-2-2894-3447 ext. 111
Fax: +886-2-2895-9254
Email: tsd@asus.com.tw
Newsgroup: news2.asus.com.tw
WWW: www.asus.com.tw
FTP: ftp.asus.com.tw/pub/ASUS

ASUS COMPUTER INTERNATIONAL (America)
Marketing
Address: 6737 Mowry Avenue, Mowry Business Center, Building 2
               Newark, CA 94560, USA
Fax: +1-510-608-4555
Email: info-usa@asus.com.tw

Technical Support
Fax: +1-510-608-4555
BBS: +1-510-739-3774
Email: tsd-usa@asus.com.tw
WWW: www.asus.com
FTP: ftp.asus.com.tw/pub/ASUS

ASUS COMPUTER GmbH (Europe)
Marketing
Address: Harkort Str. 25, 40880 Ratingen, BRD, Germany
Telephone: 49-2102-445011
Fax: 49-2102-442066
Email: sales@asuscom.de

Technical Support
Hotline: 49-2102-499712
BBS: 49-2102-448690
Email: tsd@asuscom.de
WWW: www.asuscom.de
FTP: ftp.asuscom.de/pub/ASUSCOM

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CONTENTS

FCC & DOC COMPLIANCE

Federal Communications Commission Statement

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

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING! The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Canadian Department of Communications Statement

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

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

I. Introduction

Thank you for purchasing an ASUS AGP-V3500 Series Graphics and Video Accelerator. With the S3 Savage4 Pro™ On Board®, the ASUS AGP-V3500 Series graphics cards provide you with extremely fast acceleration in 2D/3D graphics and high quality scalable video playback, which can fully support 3D Business, Gaming, and Multimedia Applications.

Highlights

• Supports professional graphics design, gaming, learning, and business applications

• Flicker free, high refresh rates reduce eye strain

• Powerful 3D rendering

• Crisp, realistic images

• Striking cinema-quality video

NOTE: The AGP-3500 Series graphics cards can only be installed on motherboards with an AGP slot.

Available Models

ASUS AGP-V3500/Pure
• 32MB SDRAM Frame Buffer

ASUS AGP-V3500/F
• 32MB SDRAM Frame Buffer

• Flat Panel Display Output

ASUS AGP-V3500/T
• PAL or NTSC

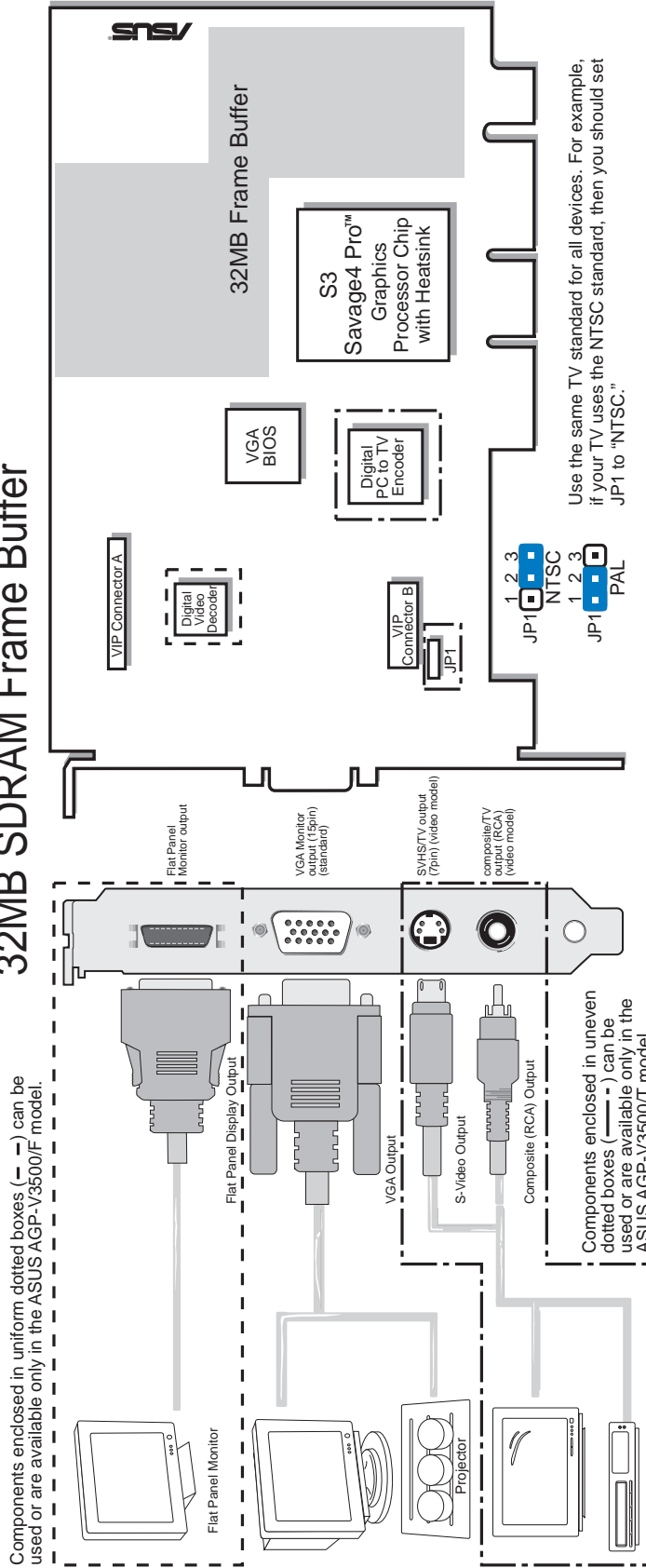• 32MB SDRAM Frame Buffer

• TV-out cable

I. Introduction

Features

- S3 Savage4 Pro™ On Board® graphics chip

- 300MHz RAMDAC with gamma correction

- 32MB 128-bit 125MHz SDRAM

- Built-in VMI Bus connector for TV-Tuner, MPEG-I, MPEG-II, and Video capture

- AGP 4X/2X interface with sideband addressing and execute mode

- S3 DX6 texture compresssion (S3TC)

- 128-bit hardware engine for Microsoft's GDI acceleration

- Direct3D, OpenGL acceleration

- Planar to/from packed format conversion

- Superior 3D performance

- Photo-realistic 3D quality

- High resolution 3D gaming

- High quality DVD video playback

- Flat panel desktop monitor support

- ASUS Smart and User-friendly Utility: Provides one-click automated setup for Windows98 and monitor and color adjustment

II. Hardware Installation

ASUS AGP-V3500 Layout
32MB SDRAM Frame Buffer

32MB Frame Buffer

S3
Savage4 Pro™
Graphics
Processor Chip
with Heatsink

VGA
BIOS

Digital
PC to TV
Encoder

VIP Connector A

Digital
Video
Decoder

VIP
Connector B

JP1

1 2 3
JP1 □ NTSC

1 2 3
JP1 □ PAL

Use the same TV standard for all devices. For example, if your TV uses the NTSC standard, then you should set JP1 to "NTSC."

Flat Panel Monitor output
VGA Monitor output (15pin) (standard)
SVHS/TV output (7pin) (video model)
composite/TV output (RCA) (video model)

Flat Panel Display Output
VGA Output
S-Video Output
Composite (RCA) Output

Components enclosed in uniform dotted boxes (— —) can be used or are available only in the ASUS AGP-V3500/F model.

Flat Panel Monitor

Projector

Components enclosed in uneven dotted boxes (—·—·) can be used or are available only in the ASUS AGP-V3500/T model.

Item Checklist
☑ ASUS AGP-V3500/T (PAL or NTSC)
☑ TV-out cable
☑ This User's Manual
☑ ASUS AGP-V3500 Series Driver & Utility CD Disc

Item Checklist
☑ ASUS AGP-V3500/F
☑ This User's Manual
☑ ASUS AGP-V3500 Series Driver & Utility CD Disc

Item Checklist
☑ ASUS AGP-V3500/Pure
☑ This User's Manual
☑ ASUS AGP-V3500 Series Driver & Utility CD Disc

II. Installation Layout

II. Hardware Installation

NOTE: The ASUS AGP-V3500 series graphics card can only be installed in motherboards with an AGP slot.

WARNING! Computer boards and components contain very delicate Integrated Circuit (IC) chips. To protect the computer board and other components against damage from static electricity, you must follow some precautions.

1. Make sure that you unplug your power supply when adding or removing expansion cards or other system components. Failure to do so may cause severe damage to both your motherboard and expansion cards.
2. Keep all components such as the host adapter in its antistatic bag until you are ready to install it.
3. Use a grounded wrist strap before handling computer components. If you do not have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case. Hold components by the edges and try not to touch the IC chips, leads, or circuitry.
4. Place components on a grounded antistatic pad or on the bag that came with the component whenever the components are separated from the system.

Installation Procedures

New Systems

1. Unplug all electrical cords on your computer.
2. Remove the system unit cover.
3. Locate the AGP bus expansion slot. Make sure this slot is unobstructed.
4. Remove the corresponding expansion slot cover from the computer chassis.
5. Ground yourself to an antistatic mat or other grounded source .
6. Pick up the board (still in its sleeve) by grasping the edge bracket with one hand and then remove the plastic sleeve.
7. Position the card directly over the AGP slot and insert one end of the board in the slot first. Firmly but gently press the bus connector on the bottom of the card down into the slot. Be sure the metal contacts on the bottom of the host adapter are securely seated in the slot.
8. Anchor the board's mounting bracket to the computer chassis using the screw from the slot cover that you set aside previously.
9. Replace the cover on the system unit.
10. Connect your analog monitor's 15-pin VGA connector to the card and fasten the retaining screws (if any).
11. Connect other cables and devices if available -You are now ready to install the software drivers and utilities.

Systems with Existing VGA Card

1. Change your display driver to Standard VGA.
2. Shut down your computer and unplug all electrical cords.
3. Replace the existing VGA card with the ASUS AGP-V3500 series graphics card.
4. Restart your computer.
5. Install the ASUS AGP-V3500 series display driver.

III. Windows 98

Operating System Requirements

NOTE: The AGP-V3500 series graphics cards require a motherboard with an AGP slot. It is strongly recommended that you use Windows98 with these graphics cards. The AGP-V3500 series graphics cards are fully compatible and works best with Windows98.

Windows 98

Windows 98 supports full Direct3D and AGP features. If you are still using the beta version of Windows 98 and you want to fully take advantage the Direct3D and AGP features, you must upgrade your current Windows to the release version before installing the AGP display driver.

Windows 98 includes VGARTD for the major chipsets but it is recommended that you install VGARTD from the AGP-V3500 Series CD to make sure that you have the latest version of VGARTD.

NOTES
- For other notes or release information, see the README files in the installation CD.

- This Manual assumes that your CD-ROM disc drive is drive D: and that Windows is in C:\WINDOWS. Replace either with the actual location, if necessary.

III. Windows 98

Driver Setup

You can use one of three methods to install the Windows 98 drivers for your ASUS AGP-V3500 series graphics card.

NOTE: Method 2 and Method 3 will not install the appropriate AGP GART driver if your motherboard does not use the Intel AGPset. Installing the AGP GART driver will ensure that the AGPset's AGP functions are available. Method 2 and Method 3 will not install also the DirectX runtime libraries. DirectX must be installed so that your video player can take advantage of hardware acceleration. *See* **III. Windows 98 Install VGART Driver** and **III. Windows 98 Install DirectX** later in this manual for the setup steps.

Method 1: ASUS Quick Setup Program

NOTE: *See* **III. Windows 98 | ASUS Windows 98 Install Shell | Install All Drivers and Utilities** for detailed steps.

1. Start Windows.

2. Switch display to Windows' Standard Display Adapter (VGA) mode and then restart Windows.

3. Insert the CD installation disc into your CD-ROM drive.

4. The ASUS Windows 98 Install Shell appears. Click **Drivers and Utilities** and then click **Install All Drivers and Utilities** on the **Drivers** dialog box.

5. Follow the onscreen instructions to complete the setup.

6. When Setup has finished installing all the necessary files on your computer, it will prompt you to restart your computer. Click **Yes...** and then **Finish** to restart your computer and to complete Setup.

III. Windows 98

Method 2: Display Property Page

1. Start Windows.

2. Switch display to Windows' Standard Display Adapter (VGA) mode and then restart Windows.

3. Right-click the Windows desktop and click **Properties**.

4. Click the **Settings** tab and then click **Advanced**. The **Standard Display Adapter (VGA) Properties** dialog box appears.


5. Click **Change** on the **Adapter** tab. The **Update Device Driver Wizard** dialog box appears. Click **Next**, click **Display a list of all the drivers**... and then click **Next**.

6. Click **Show all hardware** and then click **Have Disk....**.When the **Install From Disk** dialog box appears, type the location of the V3500.INF file and then proceed to step 9. Otherwise, proceed to the next step.

7. Click **Browse** to search the CD-ROM drive. In the **Drives** box of the **Open** dialog box, select your CD-ROM drive and then click **OK**.

8. In the **Folders** box, double-click the WIN98 folder and then select V3500.INF in the **File name** box.

9. Click **OK**. A list of video cards appears. Select your VGA card type for your operating system and then click **OK**.

10. The **Update Driver Warning** box appears. Click **Yes** to confirm the setting up of the ASUS enhanced display drivers and then follow the onscreen instructions to start the setup.

11. Setup will prompt you when it has finished installing all the necessary files on your computer. Click **Finish** to close Setup.

12. When you are returned to the **Standard Display Adapter (VGA) Properties** box, click **Close**. The **Display Properties** box appears. Click **Close**.

13. The system will prompt you to restart your computer. Click **Yes** to restart your computer and to complete Setup.

III. Windows 98
Driver Installation

III. Windows 98

Method 3: Plug and Play

NOTE: Before proceeding with these steps, replace first your old VGA card with an ASUS AGP-V3500 series graphics card.

1. Start Windows.

2. When Windows detects your ASUS AGP-V3500 series graphics card, the **New Hardware Found** dialog box appears.
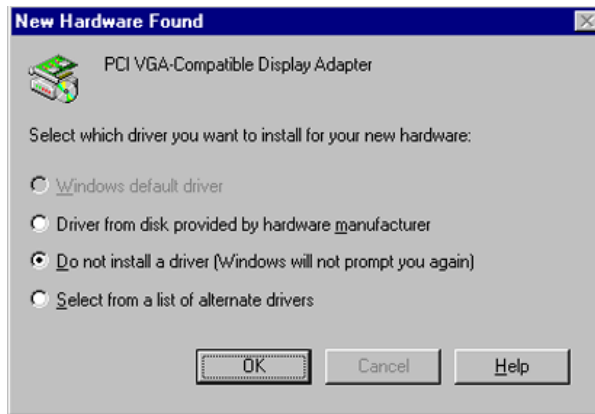
3. Click **Driver from disk provided by hardware manufacturer**.

4. When Setup prompts you for the location of the driver, type D:\WIN98 to direct Setup to the INF file and then click **Finish** to install the driver.

5. When Setup has finished installing all the necessary files on your computer, it will prompt you to restart your computer. Click **Yes** to restart your computer and to complete Setup.

III. Windows 98

ASUS Windows 98 Install Shell

Install Display Driver

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


   Click **Drivers and Utilities**.

2. The **Drivers** box appears. Click **Install Display Driver** to install all the drivers and utilities into your computer. Setup will install the drivers and utilities in the following order: Display Driver, DirectX runtime libraries, Direct3D and OpenGL Drivers for games. Just follow the onscreen instructions to complete the installation.

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

Install DirectX

Microsoft DirectX allows 3D hardware acceleration support in Windows 98. For Software MPEG support in Windows 98, you must first install the **Microsoft DirectX** libraries, and then an MPEG-compliant video player.

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

   Click **Drivers and Utilities**.

2. The **Drivers** box appears. Click **Install DirectX** to install the DirectX libraries.

3. When the **Microsoft DirectX** 6**.**x **Setup** box appears, click **Yes** to continue.

4. An end-user license agreement for the DirectX runtime libraries appears. Click **Yes** after reading to accept the terms of the agreement and to start the installation process.

5. Click **OK** when Setup has successfully copied all the files to your computer.
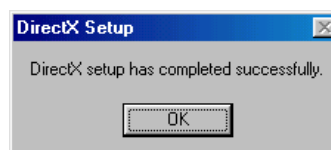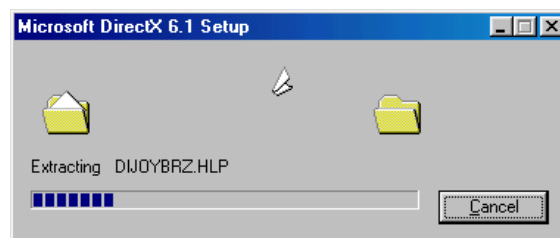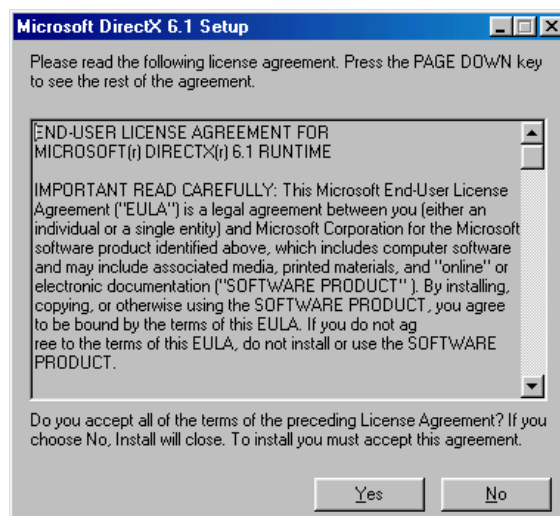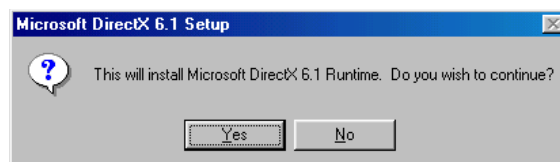
III. Windows 98

Install GART Driver

The AGP GART Driver is used to support AGP functionality for the chipset on your PC's motherboard. It is recommended to install the GART driver if it is newer than the one you have installed in your system.

> **NOTE:** Installation dialogs are slightly different for each chipset. Follow the onscreen instructions to finish the VGARTD installation. The succeeding steps assume that you are installing for an Intel AGPset.

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

   Click **Drivers and Utilities**.

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

3. A message appears that the VGARTD driver is only required for AGP boards. Click **Yes** to continue to install the driver.
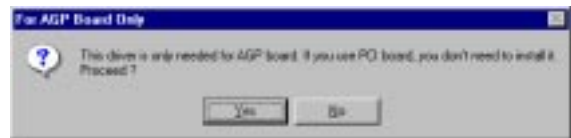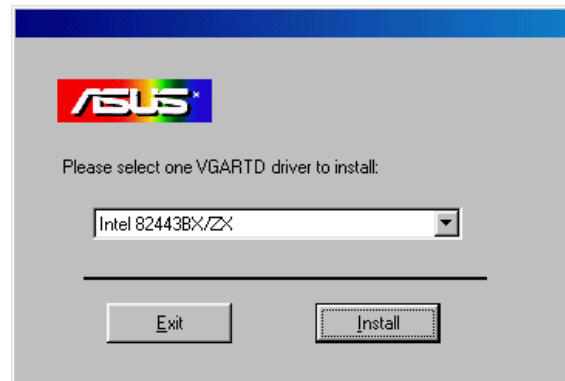
4. The **AGP VGARTD Driver Detection** box appears with the chipset detected on your motherboard. Click **OK** to install the appropriate driver for your AGPset.

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

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

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

III. Windows 98

Uninstall Display Driver

If you want to update your display drivers or if you no longer need the AGP-V3500 display drivers, you can use one of the following procedures to completely uninstall the drivers from Windows 98 to save disk space.
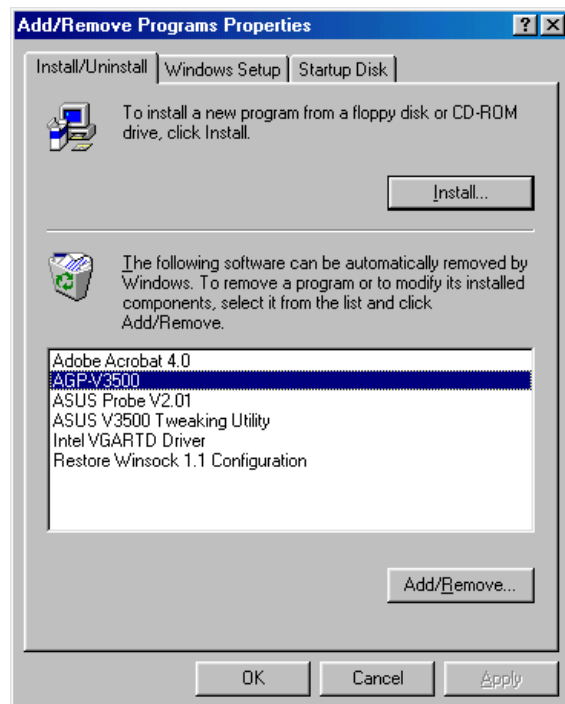
Using the Autorun Screen

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

2. Click **Uninstall Display Driver** and follow the onscreen directions.

Using Windows 98 Control Panel

1. Click **Start**, and then point to **Settings**.

2. Click **Control Panel**.

3. Double-click the **Add/Remove Programs** icon.

4. Click the **Install/Uninstall** tab.

5. Click **AGP-V3500** from the list**.**

6. Click **Add/Remove**.

7. The system will prompt you to restart your computer. Click **Yes** to restart.

(This page was intentionally left blank.)

III. Windows 98

Install ASUS Tweak Utility

The ASUS Tweak Utility lets you control the core clock speed and the memory interface speed of your graphics card.

WARNING! Use this option with caution. Using this inappropriately may damage your card and cause your system to be unstable.

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

   Click **Drivers and Utilities**.

2. The **Drivers** box appears. Click **Install ASUS Tweak Utility**

3. When the **Welcome** box appears, click **Next**.
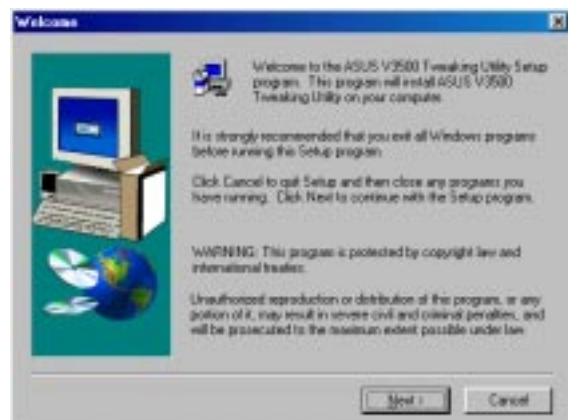
4. When the **Information** box apears, click **Next** to signify your acceptance of the warning and other related information.

   Setup starts to copy the necessary files to your computer. Follow the onscreen intructions to complete the installation.

Using the ASUS V3500 Tweak Utility

WARNING! Use the ASUS V3500 Tweak Utility with extreme caution and only if you are well acquainted with your display card. Using this inappropriately may damage your card, its components, and your system.

To run the ASUS V3500 Tweak Utility, click **Start** and point to **Programs**, **Asus**, **Tweaking Utilities**, and then click **Tweak**.

Timing Adjustment

Timing Adjustment lets you adjust the working frequency of the graphic engine and video memory.

Graphics Speed

Engine
Lets you adjust the working frequency of the graphic engine

Memory
Lets you adjust the working frequency of the video memory.
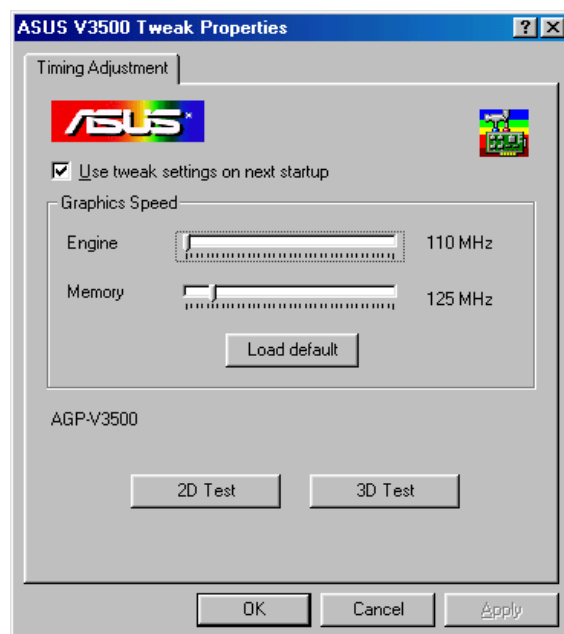
Load Default
Restores the settings to their defaults.

2D
Lets you test your tweak settings using 2D.

3D
Lets you test your tweak settings using 3D.

III. Windows 98

Test settings
Lets you test your settings.

Use tweak settings on next startup
Selecting this allows you to use your settings when Windows starts.

Tweak Safe Mode Recovery
Timing Adjustment (Safe Mode) lets you restore the working frequency of the graphic engine and video memory to their factory default settings. This mode is used when you encounter problems when starting or restarting Windows using your customized tweak settings.

Using V3500 Tweak Safe Mode Recovery

1. Restart Windows in safe mode. To start Windows in safe mode, hold the F8 key until the Windows Startup Menu appears. For some machines and Windows 98, you can use CTRL to bring up the Startup Menu. Enter the number for **Safe mode** and then press ENTER.

2. In Windows, click **Start** and point to **Programs**, **Asus**, **V3500 Tweaking Utilities**, and then click **Tweak Safe Mode Recovery**.

3. The **ASUS V3500 Tweak Safe Mode Properties** box appears. Click the appropriate settings.

Timing Adjustment (Safe Mode)
Select the **Clear tweak settings and use factory default** box to change back the timing adjustment settings to their factory defaults and then click **OK** to restart Windows properly.
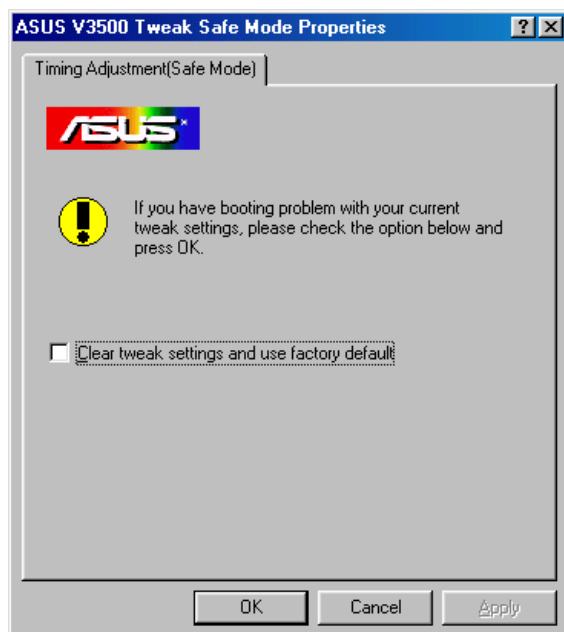
III. Windows 98

ASUS Control Panel

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

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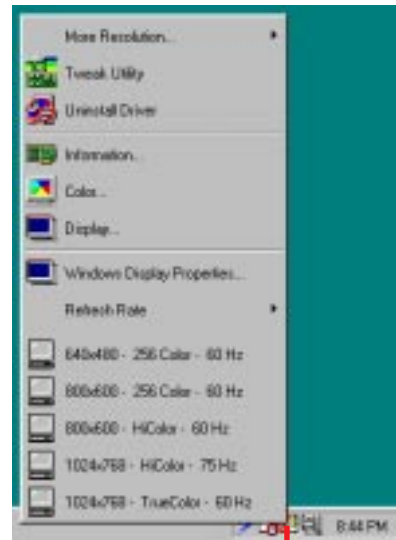
ASUS Control Panel icon

Refresh Rate

Refresh Rate lets you change the refresh rate of your current screen resolution.

> **WARNING!** Be sure that the refresh rate that you select is supported by your monitor. Selecting a refresh rate that is beyond your monitor's specification may damage it. **Press ESC to restore your original settings in case of problems.**

1. Click/right-click the ASUS Control Panel icon, point to **Refresh Rate**, and then click the desired refresh rate.
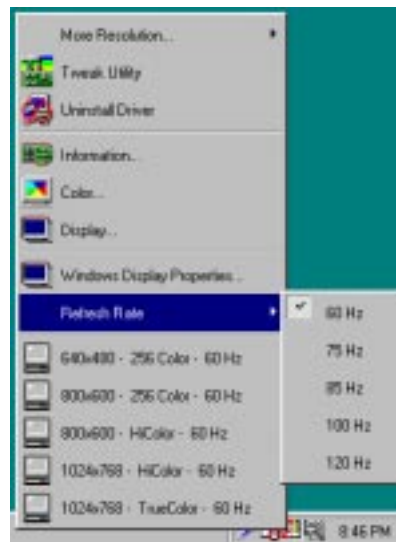
2. The system will prompt you whether you want to keep the setting you just selected. Click **OK** to keep the setting, otherwise, click **Cancel** or press ESC.
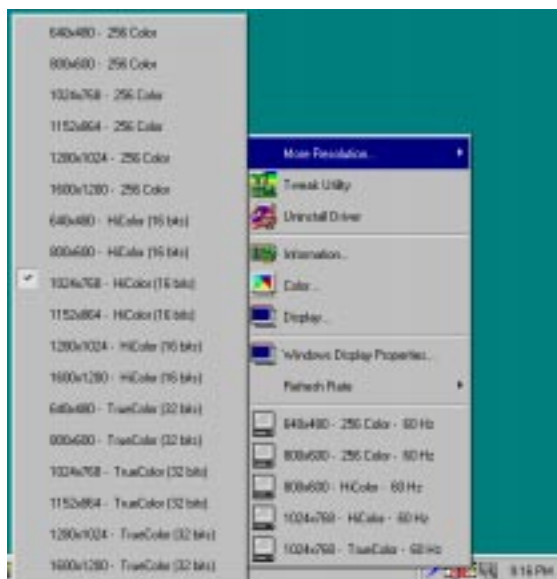
More Resolution

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

1. Click/right-click the ASUS Control Panel icon, point to **More Resolution**, and then click the desired screen resolution. The system will automatically set the resolution selected without restarting your computer.

WINDOWS95 USERS: You will be prompted to restart your computer if you select a screen resolution with a different color depth, for example, from 800x600 HiColor to 800x600 TrueColor. Click **OK** to restart your computer to make the change.
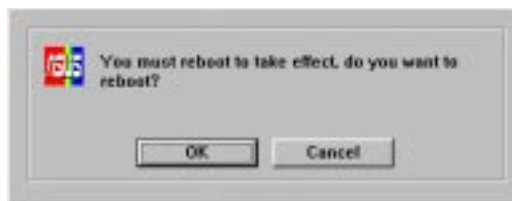
Information

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

III. Windows 98

![Color icon] **Color**

Color allows you to make color adjustments, such as brightness, contrast, and gamma values for each or all of the RGB colors. These adjustments can be made for Desktop and D3D/Game. This function is not available in 8-bit color depth.
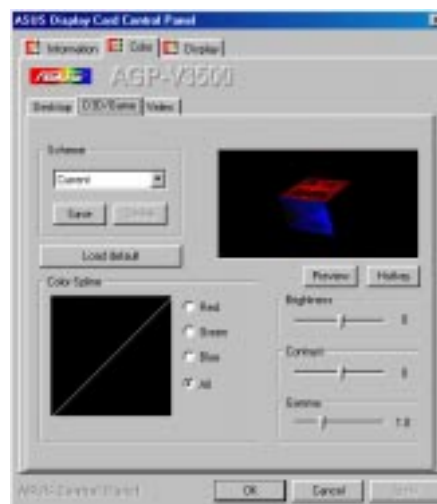
Desktop
Desktop lets you adjust the color of your Windows 98 desktop.

D3D/Game
D3D/Game lets you make your favorite color settings for D3D games.

Video
Video lets you make your favorite color settings for videos.

III. Windows 98

General Functions

Brightness / Contrast / Gamma

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

Desktop

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

D3D/Game

Changes to your color settings can be viewed by clicking **Preview**. When playing a **full-screen** DirectDraw/Direct3D game, changes can be interactively made if **Hotkey** is enabled
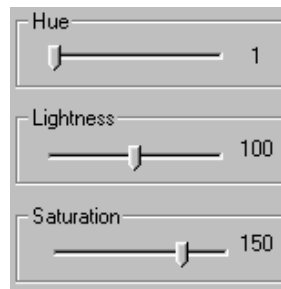
Dragging a slider to the left decreases the level and to the right increases it. The number at the right of each slider displays the brightness (value range: -128 to +128, default: 0), contrast (-30 to 30, default: 0), or gamma value (0.2 to 3.0, default: 1.0).

Hue / Lightness / Saturation

Hue / **Lightness** / **Saturation** sliders let you calibrate the hue, lightness, and saturation output of your display card.

Video

Changes to your settings can be viewed on the displayed picture (shown as race horses. When playing a movie with hardware acceleration (**YUV** overlay), changes can be interactively made if **Hotkey** is enabled..

Dragging a slider to the left decreases the level and to the right increases it. The number at the right of each slider displays the hue (value range: 1 to 200, default: 1), lightness (1 to 200, default: 100), or saturation value (1 to 200, default: 150).

Color Spline

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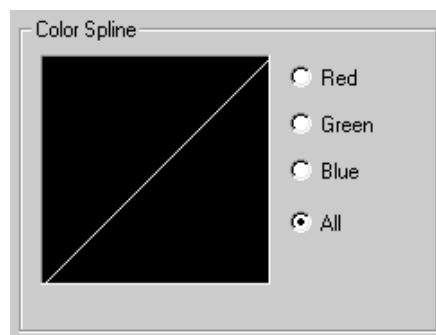
Scheme

Scheme lists schemes that you can use to change the appearance of many screen elements simultaneously. You can use existing schemes, or create and save your own scheme by saving your current settings, or delete unwanted schemes. You may want to save a scheme that you created for some special situations, such as when you want to use the same settings when playing a certain game or a movie.
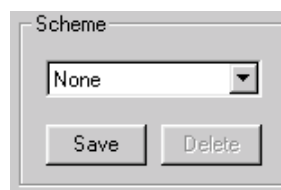
III. Windows 98

Hotkey

Hotkey lets you assign hot keys to adjust color settings interactively while playing a DirectDraw/Direct3D game or watching a movie. To use this function, click **Hotkey** to open the **Hot Key** box and then select **Enable Hotkey**. You may want to change the default hot keys when they conflict with hot keys of certain games, video players, or Windows programs.
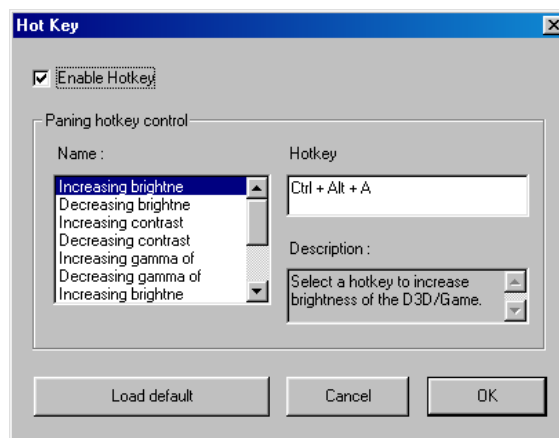
To change the default hot keys

1. In the **Name** list under **Paning hotkey control**, click the hot key control that you want to change and then click the **Hotkey** box.

2. Hot keys automatically include CTRL+ALT. Press any valid key (you cannot use ESC, ENTER, TAB, SPACEBAR, PRINT SCREEN, or BACKSPACE) you want to add to this combination. For example, to define the hot key combination CTRL+ALT+B, press B.

NOTE: The hot keys will be available only if you selected the **Enable Hotkey** check box and if you are in the appropriate environment. That is, with the **Enable Hotkey** check box selected, hot keys take effect only if you are playing a **full-screen** DirectDraw/Direct3D game or video hot keys are valid only when you are playing a movie with hardware acceleration (**YUV** overlay) turned on.

Important Notes

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

Video
Only one overlay is allowed at a time with the ASUS AGP-V3500. That is, when you click *Video* first and then run your favorite video player, you can only see the adjustments you made to the settings in the preview window because the video player cannot use the hardware acceleration function (overlay). On the other hand, if you run your video player first before opening *Video*, the preview window will show a warning message. The message may also appear when you click *Video* and the dialog box is on the wrong monitor in a Windows 98 multiple display environment.

III. Windows 98

Display

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

> **WARNING!** Adjusting position or size, especially refresh rate is a highly danger-ous operation. Selecting a value that is beyond your monitor's specification may damage it. **Press ESC to restore your original settings in case of problems.**

VGA

Adjustment

Position sets the screen position

Synchronization

Adjusts the synchronization polarity settings

Change current refresh rate

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

To change the current refresh rate

1. Click **Change current refresh rate**.

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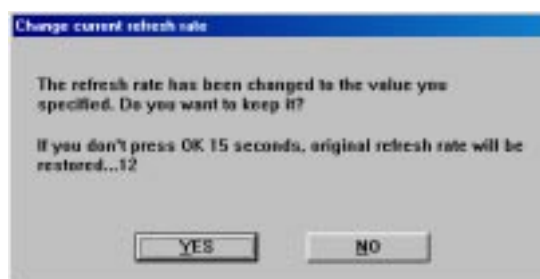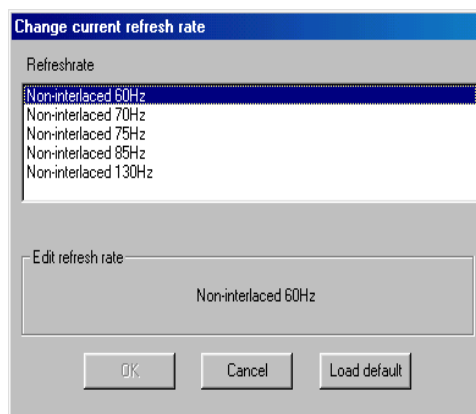
Load default

Restores the settings to their defaults.
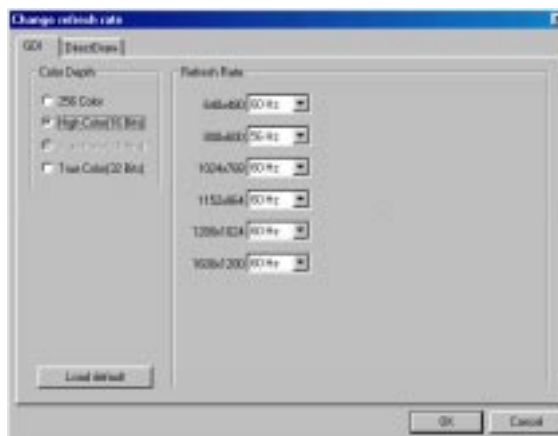
III. Windows 98

Change refresh rate

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

GDI

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

To change the refresh rate

1. Click **Change refresh rate**.

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

DirectDraw

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

To change the refresh rate

1. Click **Change refresh rate**.

2. In the **Refresh Rate** list under the **DirectDraw** tab, select the refresh rate you want to use. A **Test** button appears to let you test the selected refresh rate and resolution combination. Click **Test** to preview the new refresh rate.

3. To keep the new refresh rate, press **F1**. Otherwise, press **F2** to select another refresh rate.
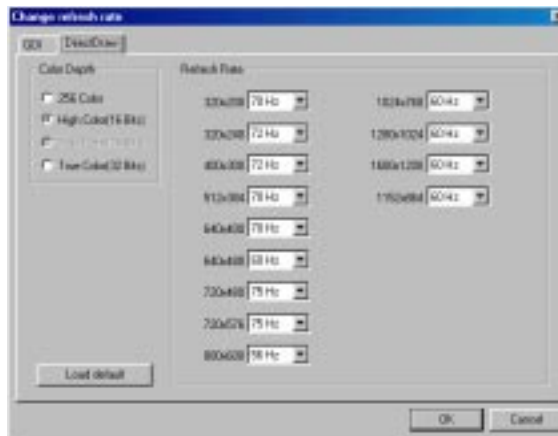
III. Windows 98

TV

(available only in AGP-V3500/T)

Display

Displays the current devices supported.

Position

Sets the screen position.

Size
Sets the screen size.

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

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

Scan type
Sets the scan type of the TV display.

Brightness
Sets the brightness of the TV display.

Saturation
Sets the saturation level of the TV display.

Flicker
Sets the anti-flicker effect.

Digital Flat Panel

(available only in AGP-V3500/F)

Display
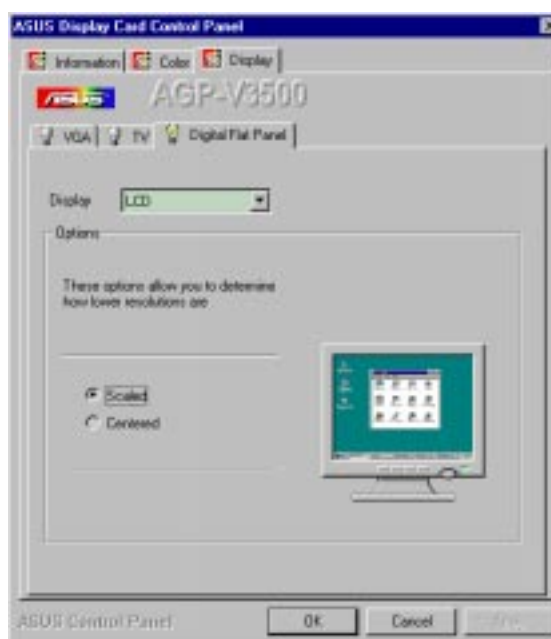
Displays the current devices supported.

Options

Options lets you determine how your desktop is displayed at lower resolutions when using a flat display monitor.

Scaled
Click **Scaled** if you want the screen to be stretched proportionately.

Centered
Click **Centered** if you want the screen to be displayed in the middle of the desktop

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IV. Windows NT 4.0

Install Display Driver

> **WARNING!** Before installing the display driver in Windows NT 4.0, make sure that you have installed **Windows NT 4.0 Service Pack3 or later, to take full advantage of the ASUS AGP-V3500 AGP features.**

Auto Installation

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

   Click **Drivers and Utilities**.

2. The **Drivers** box appears. Click **Install Display Driver** to install all the drivers and utilities into your computer. Setup will install the drivers and utilities in the following order: Display Driver, and OpenGL Drivers for games. Just follow the onscreen instructions to complete the installation.

IV. Windows NT 4.0

Manual Installation

NOTE: The following steps assume your CD-ROM drive letter is D.

1. Start Windows NT, switch display properties to VGA mode (16 colors, 640 x 480 pixels), then restart your computer to make the change.
2. After your computer restarts, right-click the desktop and click **Properties**.
3. Click the **Settings** tab.
4. Select **Change Display Type**.
5. Select **Adapter Type** and click **Change**.
6. Click **Have Disk**.
7. Insert the ASUS AGP-V3500 installation CD disc.
8. Type **D:\NT40** or click **Browse** to select the path of the display driver for Windows NT. Click **OK.**
9. Select **ASUS AGP-V3500** and then click **OK**.
10. Windows NT will once again prompt for confirmation. All appropriate files are then copied to the hard disk. When all files are copied, go back to the **Display Properties** box by clicking **Close**. Click **Apply.**
11. The **System Settings Change** dialog box is displayed. Click <u>Yes</u> to restart Windows.
12. Windows NT will restart with the default settings. The Display applet will appear to allow for mode selection.

V. Resolution Table

2D Video Modes

Resolution	Maximum Refresh Rate (Hz)	Supported Color Depth		
		8bpp = 256 colors Standard	**16bpp =** 65K colors High Color	**32bpp =** 16.7M colors True Color
640 x 480	160Hz	yes	yes	yes
800 x 600	160Hz	yes	yes	yes
1024 x 768	130Hz	yes	yes	yes
1152 x 864	100Hz	yes	yes	yes
1280 x 1024	100Hz	yes	yes	yes
1600 x 1200	85Hz	yes	yes	no
1920 x 1440	60Hz	yes	yes	no

V. Resolution Table

Maximum 3D Video Modes

Resolution	Color Depth	Single Buffer With Below Z-buffer				Double Buffer With Below Z-buffer			
		0bit	8bits	16bits	24bits	0bit	8bits	16bits	24bits
640x480	16bits	yes	yes	yes	yes	yes	yes	yes	yes
640x480	32bits	yes	yes	yes	yes	yes	yes	yes	yes
800x600	16bits	yes	yes	yes	yes	yes	yes	yes	yes
800x600	32bits	yes	yes	yes	yes	yes	yes	yes	yes
1024x768	16bits	yes	yes	yes	yes	yes	yes	yes	yes
1024x768	32bits	yes	yes	yes	yes	yes	yes	yes	yes
1280x1024	16bits	yes	yes	yes	yes	yes	yes	yes	yes
1280x1024	32bits	yes	yes	yes	yes	yes	yes	yes	yes
1600x1200	16bits	yes	yes	yes	yes	yes	yes	yes	yes
1600x1200	32bits	yes	yes	yes	yes	yes	yes	yes	yes

VI. Troubleshooting

Description	Recommended Action
After installation and re-starting, Windows 95/98 informs me that the display setting is still incorrect.	• Make sure the "Assign IRQ to VGA" option is enabled in the BIOS. • Check if there is enough IRQ for VGA. • Uninstall the driver, restart, and reinstall the driver.
My monitor is not capable of high resolution or refresh rate.	• It depends on the display characteristics of your monitor. Consult your monitor documentation for the proper configuration.
DirectX or the other applications report no AGP memory available.	• Windows 95 is not OSR2.1 or later. • DirectX version is not 6.0 or later. • You have not installed appropriate drivers for the AGP chipset. (e.g. VGARTD.VXD for Intel 440LX) • Incorrect BIOS setting. BIOS must support at least 64MB for AGP aperture size.
I have Windows95 but your manual has only the installation guides for Windows98	• To get the best compatibility and performance, we strongly recommend that you upgrade your system to Windows98.

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