ASUS® AGP-V2740 Series

3D Multimedia Accelerator

USER'S MANUAL

Hardware & Video Drivers

AGP-V2740
&
AGP-V2740TV

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Product Name:	**ASUS AGP-V2740 Series**
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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.

I. Introduction

Thank you for purchasing the ASUS AGP-V2740 Series Graphics & Video Accelerator. With the Intel740™ built in, the ASUS AGP-V2740 Series provides you with fast acceleration in both 2D/3D graphics and high quality scalable video playback, which can fully support 3D Gaming and Multimedia Applications.

Item Checklist

NOTE: The AGP-V2740 Series requires a Pentium II motherboard with an AGP slot.

For Advanced Model:
- ☑ ASUS AGP-V2740TV
- ☑ This User's Manual
- ☑ ASUS Driver & Utility CD
- ☑ (1) S-VHS Cable
- ☑ (1) Composite Cable
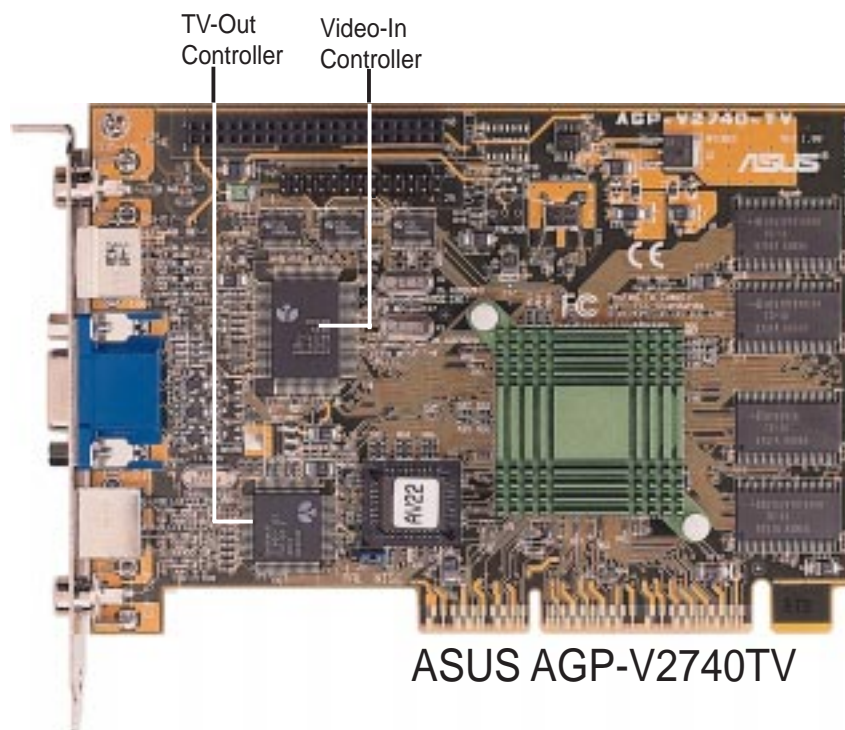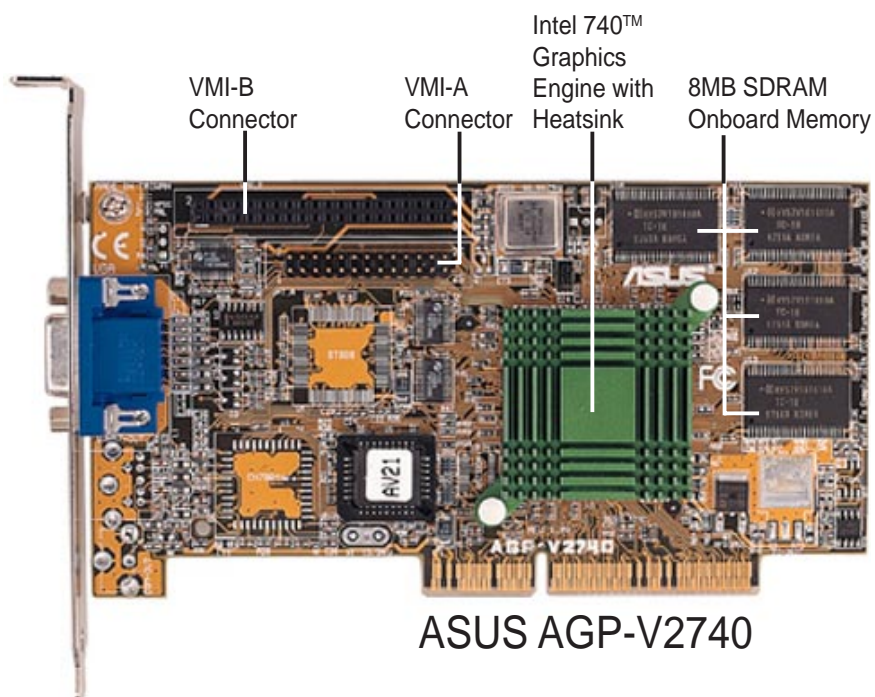
For Standard Model:
- ☑ ASUS AGP-V2740
- ☑ This User's Manual
- ☑ ASUS Driver & Utility CD

Features

- Built-in Intel740™ 64-bit 3D Multimedia Accelerator
- 64-bit 2D, GUI, and DirectDraw Acceleration
- 8MB 100MHz SDRAM frame buffer
- X and Y up and down video scaling
- Software MPEG I and VCD Player
- 205MHz Palette-DAC
- Built-in VMI Bus Connectors for TV Tuner, Video Capture, MPEG-1, and MPEG-II
- Acceleration for Windows 95 APIs, including Direct3D and DirectDraw (+ VPE)
- Video Acceleration (including acceleration for MPEG-I, MPEG-II, and Indeo)
- Acceleration for Windows NT APIs, including Direct3D, DirectDraw, and OpenGL
- AGP 1.0 Interface (supports 2x mode, execute mode with sideband)
- User-friendly Installation for Windows 95 and Windows 98
- Video-In and Flicker-free TV-Out (on AGP-V2740TV only)
- Video Capture Utility for Live Video/Still Image Capture (on AGP-V2740TV only)
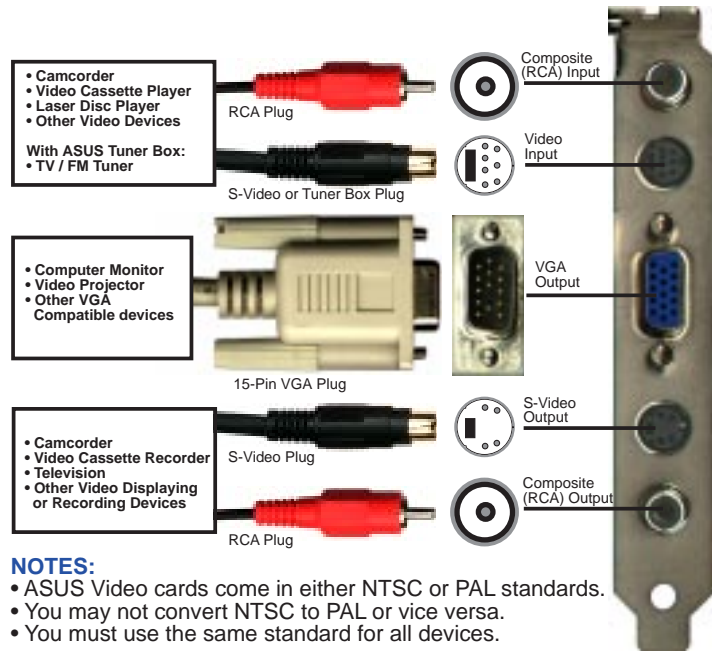
I. Introduction
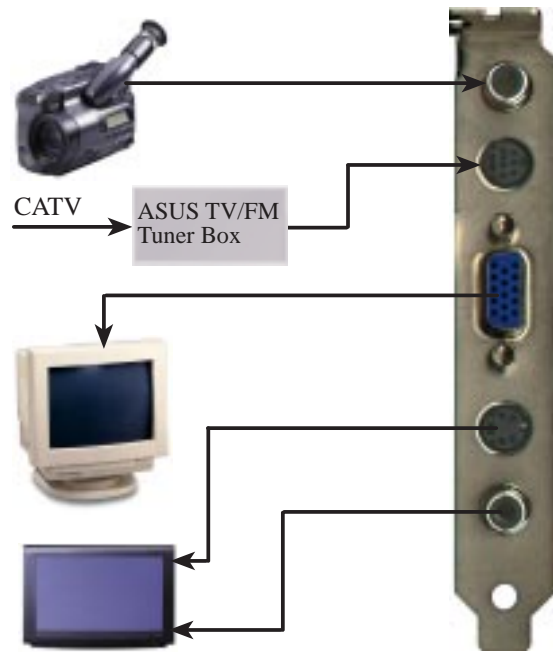
ASUS AGP-V2740 Series Layout

VMI-B
Connector

VMI-A
Connector

Intel 740™
Graphics
Engine with
Heatsink

8MB SDRAM
Onboard Memory

ASUS AGP-V2740

TV-Out
Controller

Video-In
Controller

ASUS AGP-V2740TV

AGP-V2740TV Connection Examples

- **Camcorder**
- **Video Cassette Player**
- **Laser Disc Player**
- **Other Video Devices**

With ASUS Tuner Box:
- **TV / FM Tuner**

RCA Plug

S-Video or Tuner Box Plug

Composite (RCA) Input

Video Input

- **Computer Monitor**
- **Video Projector**
- **Other VGA Compatible devices**

15-Pin VGA Plug

VGA Output

- **Camcorder**
- **Video Cassette Recorder**
- **Television**
- **Other Video Displaying or Recording Devices**

S-Video Plug

RCA Plug

S-Video Output

Composite (RCA) Output

NOTES:
- ASUS Video cards come in either NTSC or PAL standards.
- You may not convert NTSC to PAL or vice versa.
- You must use the same standard for all devices.

II. Installation Connections

CATV → ASUS TV/FM Tuner Box

II. Hardware Installation

NOTE: The ASUS AGP-V2740 series graphics card can only be installed in motherboards with an AGP slot.

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-V2740 series graphics card.
4. Restart your computer.
5. Install the ASUS AGP-V2740 series display driver.

III. Windows 95 OSR2.0

Operating System Requirements

> **IMPORTANT!** The ASUS AGP-V2740 series requires its own IRQ to work normally. If you have problems during installation, please check your BIOS setting or motherboard jumpers to make sure that "VGA IRQ" has been enabled.

NOTE: The AGP-V2740 Series requires a Pentium II motherboard with an AGP slot.

Windows 95 OSR2.0

Both Windows 95 and Windows 95 OSR2.0 support AGP cards, but to take advantage of all the AGP features, you must use Windows 95 OSR2.0 and install the USB upgrade and then install the VGARTD driver for the corresponding chipset on your motherboard. (see **III. Windows 95 OSR2.0 "Install VGARTD"**).

To install Win95 OSR2.0 with USB, you must have OSR2.0 installed already. Otherwise, first install OSR2.0 and then use the USB support update (you must use the same update language of your Windows language). On the April 1997 MSDN Disc-1 "Windows 95, SDKs, and Tools", OSR2.0 is found in "\OSR2" while the USB support update is found in "\OSR2\USBSUPP". To determine the installed version of the operating system, look in the registry at:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Version
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\VersionNumber

OSR2.0 with USB has:
Version "Windows 95" and VersionNumber "4.03.1212" or "4.03.1214".

Windows 98

Only Windows 98 **Beta3** or later supports full Direct3D and AGP features. If you are not using Beta3 or later, you must upgrade your Windows before installing the AGP display driver.

NOTE: Windows 98 includes VGARTD for the major chipsets but it is recommended that you install VGARTD from the AGP-V2740 Series CD to make sure that you have the latest version of VGARTD.

NOTE: This Manual assumes that your CD-ROM disc drive is drive **D:** and that MS Windows is in **"c:\windows"**. Replace either with the actual location, if necessary.
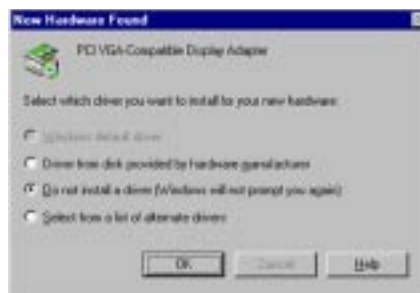
III. Windows 95 OSR2.0

Installation Procedures

"New hardware found" refers to the prompt for drivers when installing Windows 95 with the ASUS AGP-V2740 series VGA card already installed.

When installing Windows 95, a **New Hardware Found** window will appear:

Select **Do not install a driver** and follow the steps on the next page.

When installing Windows 95 OSR2.0, the **Update Device Driver Wizard** window will appear:

This wizard will complete the installation of the Standard PCI Graphics Adapter (VGA). Click **Next >** to let Windows search for an updated driver.

> **WARNING!** Only click **Next >**. The system will hang if you click **Cancel**.

Click **F**inish to install the VGA driver. You will then be asked for your Windows95 CD in order to complete the VGA driver installation. If you do not have your CD handy, direct the installation path to your **\Windows\System** directory. Windows will prompt you to restart your windows. Choose "**No**" and follow the steps on the next page.

III. Windows 95 OSR2.0

Install VGARTD

Insert the ASUS AGP-V2740 series installation CD. The **ASUS AGP-V2740 Install Shell** will appear. If it does not appear, run **D:\setup.exe**. You will be presented with a list of install options.

Click **Install VGARTD**.
A message appears that the VGARTD driver is only required for AGP boards. Click <u>**Yes**</u> to proceed to install the VGARTD driver.
The **AGP VGARTD Driver Detection** dialog box appears displaying the chipset on your motherboard that the program detected.
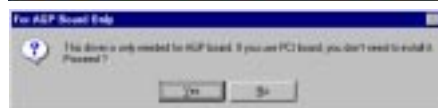
Click **OK** to install the driver for your chipset.

Installation dialogs are slightly different for each chipset. Follow the onscreen instructions to complete the VGARTD installation. The following steps are for Intel chipsets.

In you opted to select other drivers, you will be presented with a drop-down list of other drivers. In the driver selection list, click the VGARTD driver for your chipset and then click <u>**Install**</u>.

The VGARTD driver setup program **Welcome** dialog box appears. Click <u>**Next**</u> to continue.

When the setup program is finished installing the VGARTD driver for your chipset, the **Setup Complete** dialog box appears. Click **Finish** to complete the setup.

Install DirectX 5

Install Microsoft DirectX5 with this feature. DirectX allows 3D hardware accelera-
tion support in Windows 95. For Software MPEG support in Windows 95, you must
first install the **Microsoft DirectX 5** libraries, then you may install the Video Player.

Insert your CD or double click on your CD drive
icon in My Computer to bring up the autorun screen
or run Setup.exe in the root directory of the CD.
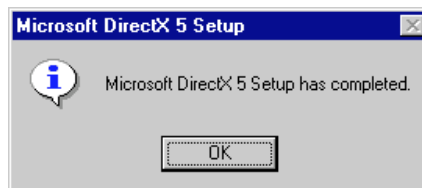Click **Install DirectX 5.**

Click **Yes** to install Microsoft DirectX5.

Click **Yes** after reading the agreement.

Click **OK** after installing DirectX5.

III. Windows 95 OSR2.0

Install Display Driver

Insert your CD or double click on your CD drive icon in My Computer to bring up the autorun screen or run Setup.exe in the root directory of the CD. Click **Install Display Driver** for AGP display driver installation.

A welcome screen appears, click **Next**.

A features screen appears, click **Next**.

A notice will appear depending on whether you have installed Windows OSR2.0 or not. If your system is not OSR2.0 or later, you will be asked to upgrade. Otherwise, you will be asked to install VGARTD if you have not yet.

If your Windows is OSR2.0, the installation program will start copying files to your hard disk once you click **Next**.

When the driver installation is completed, you will be prompted to restart Windows. Click **Finish** to restart your computer.

III. Windows 95 OSR2.0

Install Video Player

Install "PowerPlayer" video player with this feature. A video player allows you to view Video CD (*.DAT) or MPEG (*.MPG) CD titles.

Insert your CD or double click on your CD drive icon in My Computer to bring up the autorun screen or run Setup.exe in the root directory of the CD.

Follow the self-explanatory instructions to complete the installation.

Using the Video Player

Moving your cursor over the buttons will give the button name as shown.

Restart	Open VCD
Repeat	About	Backward
Settings		Stop
Eject		Forward
Power		Number Keys
Minimize		Play
Sound Channel Switch		Full Screen
		Capture to Clipboard
	Increase Volume	Next
Decrease Volume		Pause
Mute		Previous
		Open File

NOTE: It is strongly recommended that you run PowerPlayer at low resolutions (1024x768 or lower) and refresh rates (below 85Hz). Higher resolutions or refresh rates result in poor quality and may cause problems.

III. Windows 95 OSR2.0

Change Resolution and Color

You can change your display settings with this feature.

Settings: This allows you to make display, resolution, color, desktop, and font settings. The maximum screen size allowed depends on the monitor specified.

Adjustment: This allows you to make monitor adjustments such as position, size, and refresh rate. Press **ESC** to restore the original settings.

Information: This allows you to see relevant information about your display card.

Color Correction: This allows you to make color adjustments such as brightness, contrast, gamma for each RGB component.

Hotkey: This allows you to assign hotkeys in the "value" box to move your screen or to zoom in and out in the virtual desktop.

Remove Display Driver

If you want to install other graphics cards or if you no longer need the AGP-V2740 display drivers, you can use one of the following procedures to completely uninstall the drivers from Windows 95 to save disk space.

Using the Autorun Screen

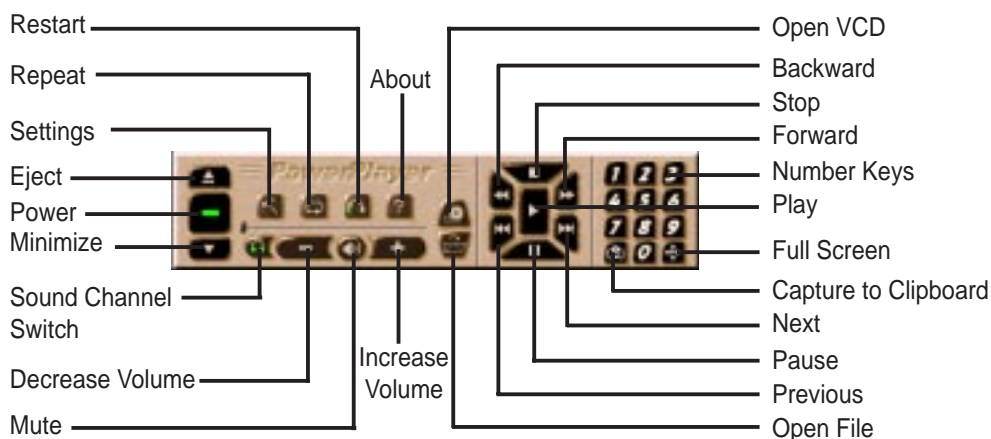Insert your CD or double click on your CD drive icon in My Computer to bring up the autorun screen or run Setup.exe in the root directory of the CD. Select **Remove Display Driver** and follow the directions.
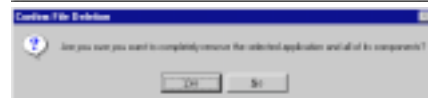
Using Windows 95 Control Panel

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. Select ASUS VGA driver from the list**.**
6. Click **Add/Remove**.
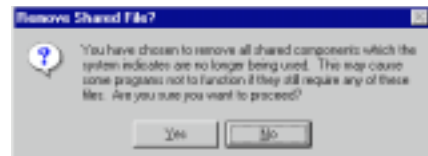
You will be warned that files will be deleted. Click **Yes** to continue.

A **"Remove Shared File?"** dialog box will ask for confirmation on removing some shared files. Click **Yes To <u>All</u>** to remove the shared files.

You will be warned that shared files may be used by other devices. Click **Yes** to continue.

This progress screen will show the components that are being uninstalled.

IV. Microsoft Windows NT 4.0

Install Display Driver

> **WARNING!** Before installing the ASUS AGP-V2740 series display driver in Windows NT 4.0, make sure that you have installed **Windows NT 4.0 Service Pack3** (You must use the same update language of your Windows language available on the Internet at http://www.microsoft.com/isapi/support/bldqpage.idc?ProductPage=q_servpk). Otherwise, the system will hang and will not be able to start up!

NOTE: Procedures assume your CD-ROM drive letter is D. To have all the AGP features, you must be using Windows NT 5.0 (available in the near future).

Installation Procedures

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-V2740 Installation CD.

8. Type **D:\NT40** or click **Browse** to select the path of the display driver for Windows NT. Click **OK.**

9. Select **ASUS AGP-V2740** 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 **Yes** to restart Windows.

12. Windows NT will restart with the default settings. The Display applet will appear to allow for mode selection.

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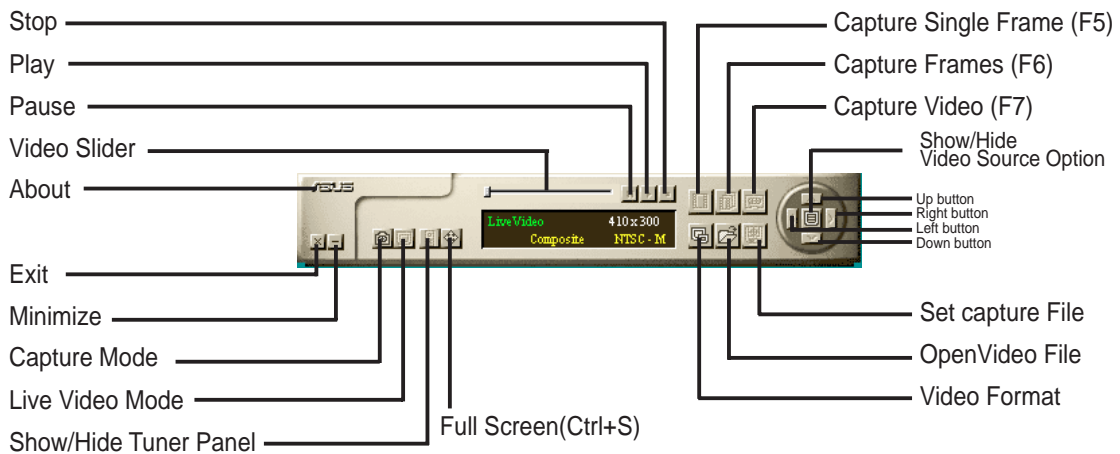
V. AGP-V2740TV Video Features

Live2740 Video Capture Utility

When you install the AGP-V2740TV Windows 95 driver, the Live2740 utility will automatically be installed on your system.

After installation, you may run the Live2740 through the **Start** button.

Control Panel

Stop
Play
Pause
Video Slider
About
Exit
Minimize
Capture Mode
Live Video Mode
Show/Hide Tuner Panel
Full Screen(Ctrl+S)

Capture Single Frame (F5)
Capture Frames (F6)
Capture Video (F7)
Show/Hide Video Source Option
Up button
Right button
Left button
Down button
Set capture File
OpenVideo File
Video Format

When first using ASUS Live2740, you must setup the Video Source. By clicking the **Show/Hide Video Source Option** button on the panel, you can show or hide the video source setting.

You can use the Up or Down arrow buttons on the control panel to select the Video Connector or the Video Standard. The Left and Right arrow buttons are used for making selections.

V. AGP-V2740TV Video Features

Using Live2740

There are two methods to capture video by clicking the capture button on the Live2740 control panel or by pressing the corresponding functions keys.

Single Frame (F5): Capture a still image and save it as a Bitmap file. (.bmp)
Frames (F6)   : Capture some still images and save them as a video file. (.avi)
Video (F7)   : Capture continous video and save it as a video file. (.avi)

You may switch to capture mode by clicking the Capture Mode button on the control panel.

To set the output location of captured images or video, click the **Set Capture File** button on the control panel. Then set the desired location for saving your images or videos.

Live2740 allows you to play video files or use play-back to review videos in a window or full screen.

TV-Out setting

This allows you to enable the TV-Out feature and set the video-format and output-type setting. You can also set the flicker rate and brightness of the TV image in this window.

VI. Display Information

Resolution Table

8MB Video Memory

Resolution	Vertical Frequency	Horizontal Frequency	Supported Color Depth		
			8bpp = 256 colors Standard	16bpp = 65K colors High Color	24bpp = 16.7M colors True Color
640 x 480	60Hz	31.1KHz	yes	yes	yes
	72Hz	37.8KHz	yes	yes	yes
	75Hz	37.5KHz	yes	yes	yes
	85Hz	42.6KHz	yes	yes	yes
	100Hz	51.1KHz	yes	yes	yes
	160Hz	84.1KHz	yes	yes	yes
800 x 600	60Hz	37.9KHz	yes	yes	yes
	72Hz	45.4KHz	yes	yes	yes
	75Hz	46.7KHz	yes	yes	yes
	85Hz	53.7KHz	yes	yes	yes
	100Hz	62.9KHz	yes	yes	yes
	150Hz	93.5KHz	yes	yes	----
1024 x 768	60Hz	48.1KHz	yes	yes	yes
	75Hz	60.3KHz	yes	yes	yes
	85Hz	68.6KHz	yes	yes	yes
	100Hz	80.7KHz	yes	yes	yes
	120Hz	96.9KHz	yes	----	----
1280 x 1024	60Hz	64.1KHz	yes	yes	yes
	75Hz	80.6KHz	yes	yes	----
	85Hz	90.8KHz	yes	yes	----
1600 x 1200	60Hz	74.7KHz	yes	yes	----
	75Hz	94.0KHz	yes	----	----
	44Hz *	55.4KHz	----	----	yes

*Interlaced

VII. Troubleshooting

Description	Recommended Action

After installation and re-starting, Windows 95 informs me that the display setting is still incorrect.

There may be a conflict between a previous and the current display drivers. This is caused by the incomplete removal of the previous display driver. Try the following steps to remove it:

1. Right-click **My Computer** on the desktop.
2. Select **Properties**. The **System Properties** dialog box appears.
3. Click the **Device Manager** tab. Be sure that **View devices by type** is selected.
4. Double-click **Display adapters**.
5. You will find two (or more) conflicting adapters.
6. Disable all previous adapters by selecting them and clicking **Remove**.
7. Close Device Manager and restart Windows 95.
8. Your display driver should work correctly this time.

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.

There may be several possible reasons:

1. Windows 95 is not OSR2.0 or later.
2. DirectX version is not 5.0 or later.
3. You have not installed appropriate drivers for AGP chipset. (e.g. VGARTD.VXD for Intel 440LX which ASUS installation automatically installs)
4. Incorrect BIOS setting. BIOS must support at least 32MB for AGP aperture size.