

**ASUS**® ATI VGA Series  
Audio/Video Cards

**USER'S MANUAL**  
Hardware & Video Drivers

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# FCC & DOC COMPLIANCE

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## ***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:

- Re-orient 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

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The ASUS 264 series of audio/video cards provides the best way to play games, watch videos, and work in Windows 95. Just look at some of these video features:

## **Powerful 3D Graphics**

Enter a new age of computing with enriched 3D graphics. ATI video chipset supercharges 3D applications, games, Internet, illustrations, and animation with rich 65,000 graphics, hardware acceleration and higher frame rates. It's like doubling the power of your processor.

## **Cool 3D Gaming**

Turn your PC into a powerful 3D game console. ATI video chipset brings gameplay never seen before on your PC... with detailed texture mapped graphics in vibrant 65,000 colors, higher resolution and faster frame rates. Plus, it also runs your DOS games fast. And, ASUS even includes the hottest Windows 95 game with certain packages so you can start playing right out of the box!

## **Direct3D and Windows 95 Ready**

ASUS 264 series of audio/video cards is ready for Direct3D, the new standard for 3D acceleration in Windows 95. With the addition of a new software driver, ASUS 264 series of audio/video cards will supercharge 3D games and applications.

## **Amazing Video Quality**

Experience the best full-screen, full-motion MPEG video, as if you were watching it on your TV. Get brilliant color, full-motion playback in Windows 95 or 3.x.

## **Superior Graphics and Speed**

Speed up your applications with ATI's powerful 3D and 2D, 64-bit accelerator... images appear on-screen instantly. Add more color, speed, and detail to your applications.

## **Ease-of-Use**

Simply install the ASUS 264 series of audio/video cards into your system... ASUS provides graphics and video drivers for the most popular operating systems. ASUS provides seamless installation routine to help you optimize your video capabilities... intuitive Windows 95 control accessed through ATI's enhanced suite of Windows 95 utilities.

# I. Introduction

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## **Enhanced Windows 95 Support**

ASUS 264 series of audio/video cards will add snap and vibrance to all your business and home computing tasks under Windows 95. Blazing speed, intense full color graphics, plus enhanced graphics utilities. To give you the highest possible confidence your software will run reliably, ATI has worked closely with Microsoft to ensure the most stable Windows 95 drivers in the industry. Access powerful graphics features instantly, with ATI's enhanced suite of Windows 95 utilities:

**Virtual Desktop** - Conveniently access a larger desktop workspace, up to 1,600 x 1,200.

**Screen Adjust** - Change your screen size, center the screen image, and tune monitor refresh rates from within Windows 95.

**Color correction** - Adjust your screen color to match your printer output, a feature not available on most other comparably-priced graphics cards.

**ATI Help Wizards** - An intelligent on-screen guide makes it easy to optimize your graphics accelerator and display, without even opening a manual.

**Plug & Play** - ASUS 264 series of audio/video cards is Windows 95 plug and play compliant for automatic configuration, supporting VESA and DDC1/2b compliant monitors.

**ATI Video Player** - Play MPEG or video with simple VCR controls.



## II. Hardware Installation

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This section tells you how to install the ASUS PCI Video Card or ASUS Audio+Video MediaBus Card in your PC computer. The steps provided below demonstrate how to install the cards in a typical system. Your system may be slightly different.

**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 should follow some precautions whenever you work on your computer.

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. Hold components by the edges and try not to touch the IC chips, leads, or circuitry.
3. Use a grounded wrist strap before handling computer components.
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.

**IMPORTANT:** Keep the host adapter in its antistatic bag until you are ready to install it. Before you pick up the adapter, ground yourself by touching an unpainted surface on the computer chassis. Even a little static electricity can destroy a host adapter component!

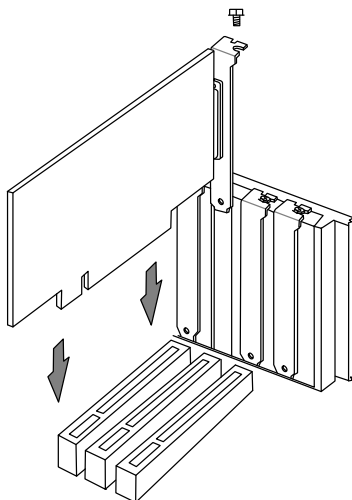
### Installation Procedures:

1. Unplug all electrical cords on your computer.
2. Remove the screws for the back of the system unit cover.
3. Remove the system unit cover.
4. Find an unused 5volt PCI bus expansion slot or MediaBus expansion slot. Make sure this slot is unobstructed. .
5. Remove the corresponding expansion slot cover from the computer chassis. The slot cover is the metal strip in the back of the computer chassis that covers the opening for the adapter's external connector.
6. Ground yourself to an antistatic mat or other grounded source.
7. Pick up the board (still in its sleeve) by grasping the edge bracket with one hand. Avoiding touching board components.
8. Remove the plastic sleeve.

## II. Hardware Installation

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9. Position the card directly over the PCI slot and insert one end of the board in the slot first. Carefully 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.



10. Anchor the board's mounting bracket to the computer chassis using the screw from the slot cover you set aside previously.
11. Connect the CD audio wire from your CD ROM player to the AV264 series card audio input connector that fits your CD ROM type.
12. For AV264 series cards, connect the joystick ribbon cable and mount to a free slot opening.
13. Replace the cover on the system unit.
14. Connect your analog monitor's 15-pin VGA connector to the card and fasten the retaining screws (if any). For Audio cards, you should also connect speakers to the "Speaker Output" in order for sound to be heard.

# III. Microsoft Windows 95

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## Video Driver Installation

### Introduction

After installing the ASUS Video or Audio/Video card, software drivers and utilities must be installed. The following are various driver installation procedures for Windows 95 under specific situations.

### Windows Plug and Play in Windows 95: (Auto installing drivers)

**IMPORTANT:** If an ASUS Video or Audio/Video card (or ATI compatible) was installed at one time, Windows 95 Plug and Play may install ATI's original driver upon entering Windows 95. The old driver may cause your system to hang. If this happens, follow these steps to reset your display driver to its basic defaults:

1. Enter Windows 95 in **safe mode** by pressing **F5** repeatedly during bootup
2. **Right click** the mouse on the open desktop (not over any icons)
3. Select **Properties**
4. Click the **Settings** tab - Settings menu appears
5. Click **Change Display Type** - Change Display Type windows appears.
6. Click **Change** button - Select Device windows appears.
7. Click **Show all devices** - Manufacturers and Models appears
8. Click (**Standard display types**) - Standard Display Adapter (VGA) is selected
9. Click **OK** button - Change Display Type windows appears.
10. Click **Apply** button - System Settings Change window appears
11. Click **Yes** button to restart your computer now - restart in normal mode.

# III. Microsoft Windows 95

## Video Driver Installation

### Installing ATI Video drivers in Windows 95: (New Hardware Found)

If installing an ASUS Video or Audio/Video card for the first time, a “New Hardware Found” window will appear upon entering Windows 95:

Select which driver you want to install for your new hardware:

- Windows default driver
- Driver from disk provided by hardware manufacturer
- Do not install a driver (Windows will not prompt you again)
- Select from a list of alternate drivers

1. Click **OK** to use the default selection: “Driver from disk provided by hardware manufacturer”
2. Insert ASUS installation CD and click **Browse** button - Open windows appears.
3. Select you CD-ROM drive in the “Drives:” box
4. Select **win95\english (\enhanced) (\japanese) - macxw4.inf** shows in “File name:”  
**NOTE:** Select the directory according to your Windows language. “Enhanced” produces slightly better performance but without Microsoft’s Windows certification.
5. Click the **OK** button - Install from Disk appears - Click OK button again.
6. Your ASUS card should be auto detected, if not select the appropriate model of your Video or Audio/Video card (click **Show all devices** if necessary) - Copying Files... appears - message appears to restart your computer.



7. Click **Yes** button - ATI Desktop Help will appear upon restart, make changes as necessary.

## III. Microsoft Windows 95

### Video Driver Installation

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#### Installing ATI Video drivers in Windows 95 (Prompted by Windows 95)

If an ASUS Video or Audio/Video card (or ATI compatible) was installed unsuccessfully or modified at one time a a “Display” message will appear upon entering Windows 95:

There is a problem with your display settings. The adapter type is incorrect, or the current settings do not work with your hardware.

1. Click **OK** button to continue - The “Settings” tab of the Display Properties appears.
2. Click **Change Display Type** - Change Display Type windows appears.
3. Click **Change** button - Select Device windows appears.
4. Click **Have Disk** button - “Install From Disk” window appears
5. Insert ASUS installation CD and Click **Browse** button - Open window appears
6. Select your **CD-ROM** drive in the “Drives:” box
7. Select win95\english (\enhanced) (\japanese) - **macxw4.inf** shows in “File name:”  
**NOTE:** Select the directory according to you Windows language. “Enhanced” produces slightly better performance without Microsoft’s Windows certification.
8. Click the **OK** button - Install from Disk appears - Click **OK** button again.
9. Click **Show all devices** (if available)
10. Select the appropriate model of your Video or Audio/Video Card - Copying Files... appears
11. Change your monitor type if necessary - Click **Close** button when finished.
12. Adjust the “Desktop area,” “Color palette,” and “Font size” if necessary - Click **Apply** button when finished - System Settings Change windows appears:

You must restart your computer before the new settings will take effect.  
Do you want to restart your computer now?

13. Click **Yes** button - ATI Desktop Help will appear upon restart, make changes as necessary.

# III. Microsoft Windows 95

## Video Driver Installation

### Updating installation in Windows 95: (Using Autorun Screen)

If for some reason you need to reinstall the ATI video drivers or if you skipped the previous procedures, you may use the following steps:

1. Insert the ASUS installation CD (or double click on the CD drive in “My Computer” if CD already inserted)- ASUS Windows 95 Install Shell appears.



2. Click **Install Windows 95 Display Driver** - Display Properties and installation information appears.
3. Select the **Settings** tab and Continue from step 2 above.

# III. Microsoft Windows 95

## Software MPEG & Video Player

Software MPEG allows the viewing of the following video files identified by their extensions:

- MPEG Format: (\*.MPG, \*.DAT, \*.MPV) Extensions
- AVI Files (\*.AVI) Extensions

For Software MPEG support in Windows 95, you must first install DirectVideo Upgrade For Microsoft Windows, then install ATI Video Player.

### Installing Microsoft DirectVideo in Windows 95:

1. Reinsert the ASUS installation CD or select the **CD** from My Computer.
2. Click **Install DirectX** - Click "Next" to install
3. Click **Done** button when finished.

### Installing ATI Video Player in Windows 95:

1. Reinsert the ASUS installation CD or select the **CD** from My Computer.
2. Click **Install Video Player** - ATI Setup: ATI VIDEO PLAYER window appears.
3. Click the **OK** button - Installation complete message will appear
4. Click **Restart Windows** button when finished

The setup program will give you "ATI Multimedia" in your Programs group and start button. The following icons will be available from the "Start" button once the driver has successfully been installed. Click ATI Player to bring up the ATI Player screen.



# III. Microsoft Windows 95

## Windows 95 Display Settings

### Changing display settings:

To enter the "Display Properties" at any time, right click your mouse on the desktop and select "Properties" or double click the "Display" icon in the "Control Panel." Click the appropriate Tab as follows:

### Adjustment



**Adjustment:** Click on the Position or Size arrows to make your screen appear as centered and large as possible.

### Panning



**Panning:** This allows you to assign hotkeys in the "Value" box to move your screen up, down, left, right, in, or out in any application. Click on "Defaults" button to fill in the "Value" box with default values.

### Color



**Color:** This allows you to adjust the Gamma level for your monitor and color levels for Red, Green, and Blue. You can save your settings by clicking "Save As" button and typing in a file name. This allows you to recall previously saved settings. Click on "Defaults" button to restore all settings to the default.



# IV. Microsoft Windows 3.x

## Video Driver Installation

For your convenience, the ATI video drivers for Windows 3.x can be installed in Windows 3.x or in DOS. The autorun ASUS Windows 3.1 Install Shell cannot be automatically run by Window 3.x, so manual execution is necessary.

### Installing ATI video drivers in Windows 3.x:

1. Start Windows 3.x
2. Run **File Manager**
3. Insert the ASUS installation CD.
4. Change to your CD drive.
5. Double click **setup.exe** - ASUS Windows 3.1 Install Shell appears



6. Click on **Install Windows 3.1 Display Driver**- Confirm Installation appears
7. Click **Yes** - Copying Files appears - Restart Windows appears
8. Click **Restart now** to complete installation - ATI Desktop group and icon will appear upon restart - Install Shell Message appears:

Now installation process will continue. If you want to install Video for Windows, please keep your ASUS driver CD in CD-ROM drive.

9. Click **OK** - Follow the instructions for Software MPEG & Video Player.

# IV. Microsoft Windows 3.x

## Video Driver Installation

### Installing ATI video drivers in DOS:

1. Enter DOS mode (Exit Windows, do not use Windows DOS prompt)
2. Change to your CD-ROM drive
3. Type: **W31INST**



4. Press Enter to confirm path of Windows 3.x or change if necessary.
5. "ASUS driver is successfully installed !!" - **press any key.**
6. "Do you want to launch Windows 3.1 to continue installation now? (Y/N)  
Note: You must make sure that ASUS ATI VGA card has been plugged in your machine." - Press **Y**.
7. Install Shell Message appears:

Now installation process will continue. If you want to install Video for Windows, please keep your ASUS driver CD in CD-ROM drive.

9. Click **OK** - Follow the instructions for Software MPEG & Video Player.

# IV. Microsoft Windows 3.x

## Software MPEG & Video Player

Software MPEG allows the viewing of the following video files identified by their extensions:

- MPEG Format: (\*.MPG, \*.DAT, \*.MPV) Extensions
- AVI Files (\*.AVI) Extensions

For Software MPEG support in Windows 3.x, you must first install Microsoft's Video for Windows, then install ATI Video Player.

### Installing Microsoft Video for Windows in Windows 3.x:

1. Click on **Install Video for Windows** - Video for Windows 1.1 Runtime appears
2. Click **Continue** - Setup appears - Setup Successful appears
3. Click **Restart now** to complete installation

### Installing ATI Video Player in Windows 3.x:

1. Run **File Manager**
2. Insert the ASUS installation CD.
3. Change to your CD drive.
4. Double click **setup.exe** - ASUS Windows 3.1 Install Shell appears



5. Click on **Install Video Player** - Memory Requirement appears:

The ATI Video Player needs at least 600K conventional memory to execute.  
If you are not sure or memory is not enough, you can type "MEMMAKER"  
under DOS to optimize your memory configuration.

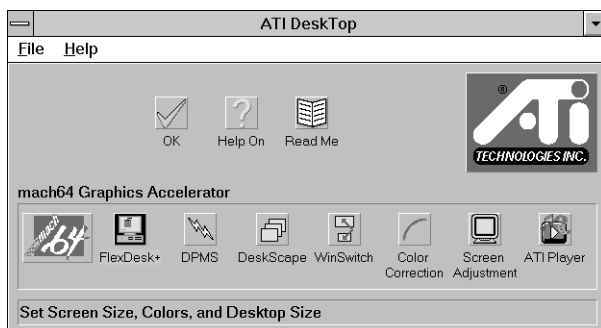
6. Click **Continue** - ATI Setup: ATI VIDEO PLAYER appears with message
7. Click **OK** to start installation - Installation completed message appears.
8. Click **OK** to complete installation - Restart Windows? appears
9. Click **Restart Windows** button.
10. The Video Player icon will be added to the ATI Desktop menu.

## IV. Microsoft Windows 3.x

**NOTE:** This section shows screens for Windows 3.1x although feature descriptions may be used for both Windows 3.1x and Windows 95.

### ATI Desktop Control Panel

An ATI DeskTop is installed automatically when you install the enhanced driver for Windows. Double click on the icon to display the ATI Desktop Control Panel.



The **ATI DeskTop** provides a consistent and integrated control. Depending on what has been installed, your DeskTop may not have the same number of features as shown above.

Each feature icon in the *Mach64* product group shown in this DeskTop is described on the following pages.

### ATI Desktop Features

**Help On:** Click this icon, then click any other icon in the product group to display Help information on the selected item.

**Read Me:** Click this icon then click the Mach64 logo or feature icon to display the readme file on the item.

**ATI Logo:** Double click this logo to generate a problem report which includes pertinent data on your system and card configuration to help solve your problem. Have the report ready before contacting your vendor.

**Feature Icons:** Double click a Feature icon to launch the associated control panel.

## IV. Microsoft Windows 3.x

### FlexDesk+



### FlexDesk+ Basic Settings

**FlexDesk+** is for configuring the operating modes and parameters of the ASUS 264 Series Card. The availability of options in FlexDesk+ is dependent on the card and its hardware configuration. This control panel allows you to configure Colors (color depth), Screen Size (resolution), Desktop Size (virtual desktop size), Advanced settings and Default parameters (factory settings). A Status Bar at the bottom of the panel displays help information as you make your selection.

**FlexDesk+** Provides **dynamic screen information feedback** as you adjust the sliders for "Colors", "Screen Size" and "Desktop Size." Any setting not supported by the card is shown in gray. A slider will always snap to the nearest supported setting for the current slider combination.

The **Sample Color Bar** next to the Sample Monitor dynamically shows a color palette that approximates the Colors setting as you adjust the Colors slider.

**NOTE:** If your desired resolution is not available, check your monitor configuration setting in the INSTALL program.

#### Sliders

**Colors:** Select color depths of 256; 32,000; 65,000; or 16.7million colors.

**Screen Size:** Selects standard screen resolutions of 640x480, 800x600, 1024x768, 1152x864, and 1280x1024.

**Desktop Size:** Selects virtual desktop sizes of 640x480, 800x600, 1024x768, 1152x864, 1280x1024, and 1600x1200. Desktop size is greater than or equal to Screen size. The virtual desktop provides expanded work space on your screen even if your monitor cannot display that resolution by allowing you to pan past your visible screen.

# IV. Microsoft Windows 3.x

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## Buttons

**Test:** Automatically switches on monitor to display the selected mode without exiting this control panel, for 10 seconds or until the user clicks the End Test, OK, or Cancel button. All other buttons and sliders are inactive at this time. To show dynamic color depth changes in this test, the WinSwitch feature must be enabled before starting the current session of Windows.

**Defaults:** Returns Screen Size, Colors, and Desktop Size sliders to the default positions. When OK is clicked, these changes will be effective.

**Advanced...:** Opens the Advanced panel. See FlexDesk+ Advanced Settings.

**Help:** Displays Help information on FlexDesk+.

**OK:** Exits the FlexDesk+ control panel and effects all new changes.

**Cancel:** Discards all changes and exits the FlexDesk+ control panel.

## FILE Menu

**Open:** Opens an existing Setting file.

**Save:** Saves the current settings to the active Setting file.

**Save As:** Saves the current settings to an alternate Setting file which you can name.

**Exit:** Exits the FlexDesk+ control panel.

## FEATURES Menu

**Defaults:** Provides same functionality as the push button.

**Advanced...:** Provides same functionality as the push button.

## HELP Menu

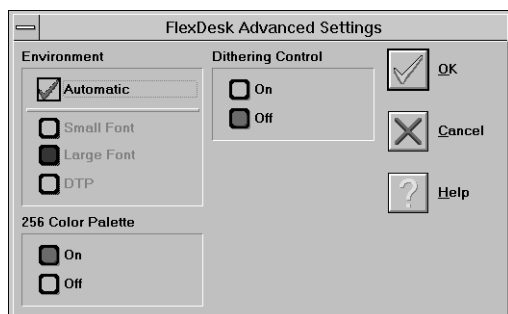
**Help:** Provides same functionality as the push button.

**Contents:** Displays the Help index.

**About...:** Displays the product version number and information.

# IV. Microsoft Windows 3.x

## FlexDesk+ Advanced Settings



### Environment

This parameter specifies logical dots per inch (LDPI). Being logical, i.e., not physical dots, the effect will differ depending on screen size. Automatic Mode chooses the optimal environment setting for the selected screen size. The Small, Large and DTP settings are 96, 120, and 128 LDPI respectively.

### 256 Color Palette

This selection is only available in 256 color mode. **Windows runs faster when this option is turned off.**

**On:** Allows the application to define color selection in the palette.

**Off:** Choose colors from a fixed palette.

### Dithering Control

Dithering is meshing two colors to produce the illusion of a third. This selection is only available in 256 color mode with 256 Color Palette on.

**On:** Provides standard VGA dithering of colors and color selection boxes.

**Off:** Provides smooth dithering which results in faster performance than VGA dithering.

### Buttons

**OK:** Accepts the advanced settings as shown and returns to the FlexDesk+ main panel.

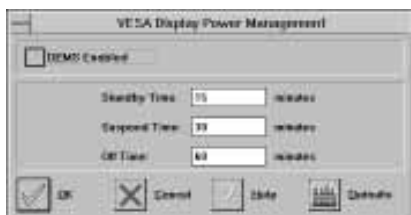
**Cancel:** Discards all changes and returns to the FlexDesk+ main panel.

**Help:** Displays Help information on FlexDesk+.

## IV. Microsoft Windows 3.x

### DPMS (for Windows)

Win3.1 Limitation: In some newer BIOS, DPMS function doesn't work normally.



VESA DPMS-compliant monitors conserve electrical energy by powering down after a period of inactivity. You can use the DPMS panel (in Windows) to configure the auto-shutdown timing sequence for your DPMS-compliant monitor. (The DOS version of DPMS is described in another section.)

**WARNING: Monitors that do not support VESA DPMS can be damaged by activation of the DPMS feature.**

**Do not use screen saver when DPMS is enabled. The screen saver will conflict with the DPMS operation.**

#### Enable DPMS for Windows:

1. Click the DPMS icon.
2. Highlight the timer boxes one at a time and specify the values.
3. Turn on DPMS Enabled.
4. Click OK.

#### Timer Settings

**Standby Time:** Time value is in minutes, after which Standby mode is activated if no user activity is detected. Standby is the first level of power conservation.

**Suspend Time:** Time value is in minutes, after which Suspend mode is activated if no user activity is detected. The monitor conserves more energy at this level than at Standby.

#### Off Time

Time value is in minutes, after which Off mode is activated if no service activity is detected. At this level, energy conservation is the highest.

#### Buttons

**DPMS Enable:** DPMS feature is enabled if box is checked.

**Defaults:** Sets DPMS timers to default values.

**Help:** Displays Help information on DPMS.

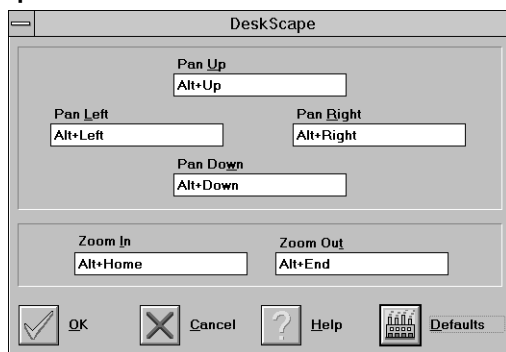
**OK:** Accepts settings as shown and exits.

**Cancel:** Discards all changes and exits.



## IV. Microsoft Windows 3.x

### DeskScape



**NOTE:** Press **Default** to fill in the fields with default keys first.

**DeskScape** allows more control over your Virtual Desktop using keyboard keys. For a description of Screen and Desktop, Refer to the *Using FlexDesk+* section.

The displayed image on the screen is a "window" showing only a portion of the entire virtual desktop. The non-displayed portion can be brought into view by panning. Four keys are assigned to this function, one for each direction of up, down, left and right. If you are using a mouse, the window may be panned by moving the mouse cursor to any edge of the window as well.

Zoom In will display a larger image but less of the desktop; Zoom Out has the opposite effect. What you can zoom is dependent on the relative settings of Screen Size and Desktop Size.

Use this panel to assign the six hot keys to Panning and Zooming functions. Alphabetic keys may be assigned in any combination with <ALT>, <Ctrl> and <Shift>. We recommend that you assign all the keys in one session.

### DeskScape Functions

**Pan Up:** Moves the "window" upward, with user defined keys, e.g., Alt ↑.

**Pan Left:** Moves the "window" to the left, with user defined keys, e.g., Alt ←.

**Pan Right:** Moves the "window" to the right, with user defined keys, e.g., <Alt →.

**Pan Down:** Moves the "window" downward, with user defined keys, e.g., <Alt ↓.

**Zoom In:** Makes the screen image larger, with user defined keys, e.g., <Alt>+<Home>. **NOTE:** The entire desktop can be panned.

**Zoom Out:** Displays more of the virtual desktop, with user defined keys, e.g., <Alt>+<End>

## IV. Microsoft Windows 3.x

### Buttons

**Defaults:** Assigns default keys to DeskScan.

**Help:** Displays Help information on DeskScan.

**OK:** Accepts key assignments as shown and exits.

**Cancel:** Discards all changes and exits.

### WinSwitch



**NOTE:** Press **Default** to fill in the fields with default keys first.

By pressing a user-defined set of keyboard keys **WinSwitch** can dynamically change screen attributes (i.e., Colors, Screen Size and Desktop Size) without exiting Windows.

When enabled, WinSwitch is actually operating in 24bpp mode-i.e., all other color depths and resolutions are emulations. As such, graphics performance across various color depths will be practically identical to that of 24bpp (16.7 million colors). Therefore, WinSwitch should be used only when color depth changes are desired. For maximum performance in 256 or 65,000 color modes, you should disable WinSwitch. **FlexDesk+** or **DeskScan** can provide the same dynamic screen size or desktop size switching functions.

#### Configuring the WinSwitch Panel

At the top of the panel is a checkbox labelled WinSwitch Enabled. This switch must be turned on (checked) to enable WinSwitch, which is primarily a dynamic color switching function. Clicking one of the four radio buttons (e.g., key 1) will display the slider positions currently associated with that key.

#### Procedure:

1. Select a radio button. Define the key combination in the field below it. You must include <Ctrl> or <Alt>.
2. Adjust any or all of the sliders. Slider functions are identical to those in FlexDesk+.
3. Either enable WinSwitch by checking the WinSwitch Enabled box, or disable WinSwitch by removing the check mark.
4. Click Ok.

## IV. Microsoft Windows 3.x

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### **Buttons**

**Key 1:** First of four radio buttons labeled key1, key 2, key 3, and key 4. The slider settings shown are associated with the selected radio button.

**Defaults:** Restores key combination and slider settings to defaults.

**Help:** Displays Help information on WinSwitch.

**OK:** Accepts current settings and exits.

**Cancel:** Discards all changes and exits.

**WinSwitch:** Switching function is enabled when the box is Checked; disabled when the box is empty.

### **Key Combination Fields**

**Key 1 Field:** Keyboard key combinations to be used to activate WinSwitch are specified in the four key combination fields, associated with Keys 1-4.

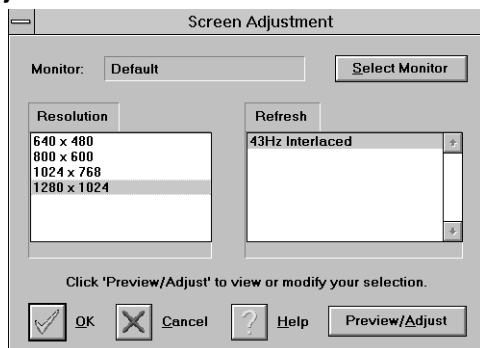
**Sliders - These sliders provide the same functions as the FlexDesk+ sliders.**

**Colors:** Selects a color depth from one of the supported Colors.

**Screen Size:** Sets the screen resolution to one of the supported sizes.

**Desktop Size:** Sets the virtual desktop to one of the supported sizes.

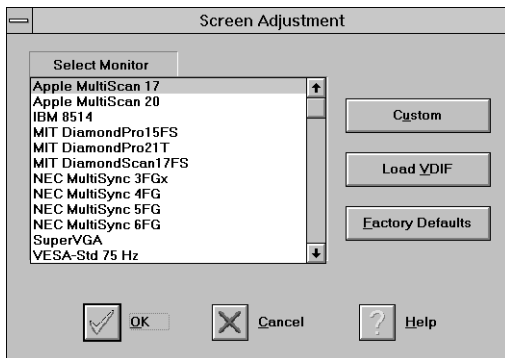
## Screen Adjustment



This allows the selection of different resolutions supported by your monitor. Select the proper monitor by pressing the "Select Monitor" button and then choosing from the list of monitors.

## IV. Microsoft Windows 3.x

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If your monitor came with a VDIF file then you may insert it into your floppy drive and press the "Load VDIF" button. The "Custom" button allows you to select the resolution and refresh rates. You may try out different settings that will optimize your display preferences but too high of a refresh rate will push your monitor past its specifications. Use the Preview/Adjust to see the results and allow digital adjustments to the screen. If the image is distorted you may press <Esc> or wait a few seconds to return to the original menu without the change.

## IV. Microsoft Windows 3.x

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The ASUS 264 Series Card supports a VESA power management control specification called **DPMS**-Display Power Management Signaling. Monitors that comply with DPMS can provide energy savings up to 80% compared to non DPMS compliant monitors. This also translates into extended monitor life.

DPMS control functions are provided for DOS and Windows operations. This chapter describes the DOS version, a Terminate-and-Stay-Resident program. TSR means it runs in the background once activated. The Windows version provides control via a Windows type control panel in the ATI DeskTop.

### NOTES:

- Monitors that do not support VESA DPMS can be damaged by activation of the DPMS feature. Check your monitor specifications.
- Do not use screen saver when DPMS is enabled. The screen saver will conflict with DPMS operation.

### DPMS (for DOS)

When you run DPMS for the first time, without parameters, DPMS will set the Standby, Suspend, and Off timers to default values. If DPMS has been loaded, running it again without parameters will display the current timer values, as follows:

<b>Standby timer:</b>	<b>15 minutes</b>
<b>Suspend timer:</b>	<b>30 minutes</b>
<b>off timer:</b>	<b>60 minutes</b>

If you run DPMS with at least one timer parameter, DPMS will set that value and disable the unspecified timers.

DPMS parameters are to be included in the command separated by spaces, as follows:

**DPMS** parameter <Enter>

**Example:** To set the Standby timer to 5 minutes, and disable the Suspend and Off timers: **DPMS STBY 5** <Enter>

### DPMS Parameters

**stby x** - Places the monitor into Standby mode after x minutes and seconds. For example, x for two minutes and ten seconds is specified as 2:10. Standby is the first level of power conservation. The monitor is instantly ready if activity is detected.

**susp x** - Places the monitor into Suspend mode after x minutes and seconds. The monitor conserves more energy at this level than at Standby.

**off x** - Places the monitor into Off mode after x minutes and seconds. The monitor is at the highest level of energy conservation.

**nomouse** - Does not detect mouse activity.

**quiet** - Suppresses DPMS messages.

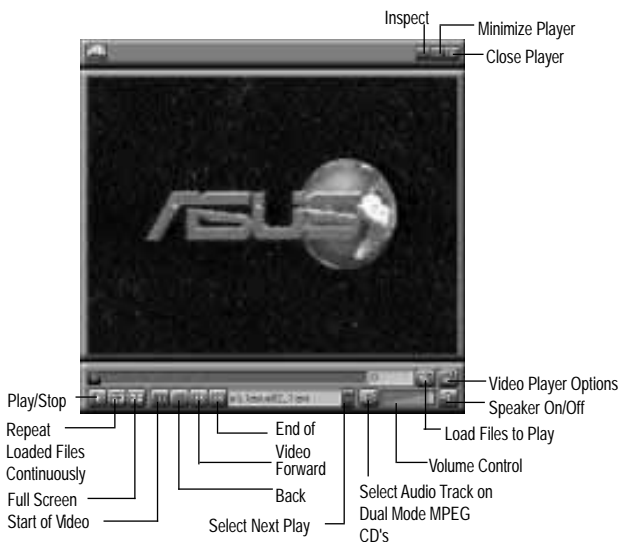
**unload** - Un-installs DPMS from system memory.

**help** - Displays help messages.

# V. Windows Video Player

## ATI Player and control panel (Win3.1x and Win95)

If MPEG drivers are installed, for playing video clips, the ATI Player icon will appear in the DeskTop. Double click on this icon to bring up the Video Screen as shown here: (Detailed button definitions are shown when holding the cursor over the individual buttons for a few seconds.)



**NOTE:** The video shown is an example only and not provided in the CD.

## Features

The question mark on top right of the Video Screen allows inspection into each button on the control panel. Click on the "?" then on a button that you would like to know about.

V. Video Player  
(Player/Features)

### ATI Player Setup



### MPEG



# V. Windows Video Player

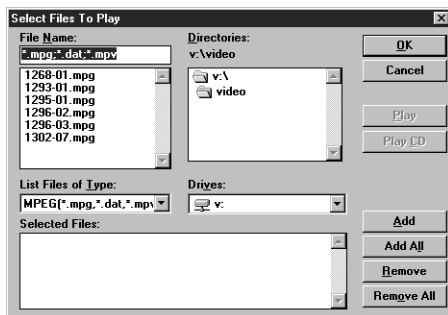
## Still Capture



## Schedule



Select Files To Play (Windows 3.1x and Windows 95)



For MPEG CD's, select the proper drive of the CD ROM and click on the 'Play CD' button. For MPEG files, select the files and click the "Add" button to add to the play list then click on the "Play" button.

**NOTE:** The above data is only an example and is not included in the software bundle.

## Video Acceleration Performance

Video is very data-intensive. For this reason, there are a number of factors which will negatively impact playback performance, including the type of compression used. *RLE* and *Video 1* are manageable with most 386 or higher systems; *Indeo* supports additional color depth, and is best run on faster 486 (or Pentium) systems.

## Playing Video Clips

Use the Microsoft Windows Media Player to play or insert video clips (i.e., files with the .AVI filename extension) into various documents. For details please refer to the Media Player on-line Help and the *Microsoft Windows 3.1 User's Guide*.

## Sizing Windows

The video clip window can be sized using <Ctrl> and number keys 1 & 2, providing 1x and 2x zoom respectively.

# VI. Microsoft Windows NT

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## Video Driver Installation

### Windows Plug and Play in Windows NT 4.0: (Auto installing drivers)

**IMPORTANT:** If an ASUS Video or Audio/Video card (or ATI compatible) was installed at one time, Windows NT 4.0 Plug and Play may install ATI's original driver upon entering Windows NT 4.0 . The old driver may cause your system to hang. If this happens, follow these steps to reset your display driver to its basic defaults:

1. Enter Windows NT 4.0 in **safe mode** by pressing **F5** repeatedly during bootup
2. **Right click** the mouse on the open desktop (not over any icons)
3. Select **Properties**
4. Click the **Settings** tab - Settings menu appears
5. Click **Change Display Type** - Change Display Type windows appears.
6. Click **Change** button - Select Device windows appears.
7. Click **Show all devices** - Manufacturers and Models appears
8. Click (**Standard display types**) - Standard Display Adapter (VGA) is selected
9. Click **OK** button - Change Display Type windows appears.
10. Click **Apply** button - System Settings Change window appears
11. Click **Yes** button to restart your computer now - restart in normal mode

**NOTE: Video for Windows, Direct Video, & Video Player is not available for any versions of Windows NT.**



# VI. Microsoft Windows NT

## Video Driver Installation

### Installing ATI Video drivers in Windows NT 4.0: (New Hardware Found)

If installing an ASUS Video or Audio/Video card for the first time, a “New Hardware Found” window will appear upon entering Windows NT 4.0:

Select which driver you want to install for your new hardware:

- Windows default driver
- Driver from disk provided by hardware manufacturer
- Do not install a driver (Windows will not prompt you again)
- Select from a list of alternate drivers

1. Click **OK** to use the default selection: “Driver from disk provided by hardware manufacturer”
2. Insert ASUS installation CD and click **Browse** button - Open windows appears.
3. Select you CD-ROM drive in the “Drives:” box
4. Select **nt40 - ati.inf** shows in “File name:”

**NOTE:** Select the directory according to your Windows language. “Enhanced” produces slightly better performance but without Microsoft’s Windows certification.

5. Click the **OK** button - Install from Disk appears - Click OK button again.
6. Your ASUS card should be auto detected, if not select the appropriate model of your Video or Audio/Video card (click **Show all devices** if necessary) - Copying Files... appears - message appears to restart your computer.



7. Click **Yes** button - ATI Desktop Help will appear upon restart, make changes as necessary.

**NOTE: Video for Windows, Direct Video, & Video Player is not available for any versions of Windows NT.**

# VI. Microsoft Windows NT

## Video Driver Installation

### Installing ATI Video drivers in Windows NT 4.0 (Prompted by Windows NT)

If an ASUS Video or Audio/Video card (or compatible) was installed at one time a "Display" message will appear upon entering Windows NT 4.0 :

There is a problem with your display settings. The adapter type is incorrect, or the current settings do not work with your hardware.

1. Click **OK** button to continue - The "Settings" tab of the Display Properties appears.
2. Click **Display Type** - Change Display Type windows appears.
3. Click **Change** button - Select Device windows appears.
4. Click **Have Disk** button - "Install From Disk" window appears
5. Insert ASUS installation CD and Click **Browse** button - Open window appears
6. Select your **CD-ROM** drive in the "Drives:" box
7. Select \nt40 - **ati.inf** shows in "File name:"
8. Click the **OK** button - Install from Disk appears - Click **OK** button again.
9. Click **Show all devices** (if available)
10. Select the appropriate model of your Video or Audio/Video Card - messages appears: "You are about to install a third-party driver..."
11. Click **Yes** - Copying Files... appears - message appears: "The drivers were successfully installed"
12. Click **OK** button
13. Change your monitor type if necessary - Click **Close** button when finished.
14. Adjust the "Desktop area," "Color palette," and "Font size" if necessary - Click **Apply** button when finished - System Settings Change windows appears:

You must restart your computer before the new settings will take effect.  
Do you want to restart your computer now?

15. Click **Yes** button - ATI Desktop Help will appear upon restart, make changes as necessary.

### Updating installation in Windows NT 4.0: (Using Autorun Screen)

If for some reason you need to reinstall the ATI video drivers or if you skipped the previous procedures, you may use the following steps:

1. Insert the ASUS installation CD (or double click on the CD drive in "My Computer" if CD already inserted)- ASUS Windows NT Install Shell appears.
2. Click **Install Windows NT Display Driver** - Display Properties and installation information appears.
3. Select the **Settings** tab and Continue from step 2 above.

**NOTE: Video for Windows, Direct Video, & Video Player is not available for any versions of Windows NT.**

# VI. Microsoft Windows NT

## Video Driver Installation

The mach64 driver for Windows NT is shipped with Windows NT. Before installing the mach64 driver, you must have installed Windows NT and selected VGA display.

### Installing ATI video drivers in Windows NT 3.5, 3.51:

1. Boot Windows NT
2. Double-click the **Main** icon.
3. Double-click the **Control Panel** icon.
4. Double-click the **Display** icon.
5. Click **Change Display Type** button.
6. Click **Change** button.
7. Insert the installation CD into the CD-ROM drive.
8. Click **Other** button.
9. Supply the Setup program with the location of the NT files of your revision, for example, type: **D:\NT35 (NT351)**
10. Click **OK** button.
11. Select the appropriate driver for your ASUS 264 series card
12. Click **Install** button.
13. Click **Yes** to change to your system configuration.
14. Click **Continue** to confirm the full path name.
15. If you are upgrading your driver, you will be asked whether you want to use the "Current" or "New" driver. Select **New** driver to install the drivers.
16. After the files have been copied to your computer, click **OK**
17. **Reboot** Windows NT
18. After reboot the Invalid Display Settings window appears - Click **OK**
19. The Display Settings dialogue box appears - Select a desired display mode.  
For more detailed information about changing your display mode, click Help.

**NOTE: Video for Windows, Direct Video, & Video Player is not available for any versions of Windows NT.**

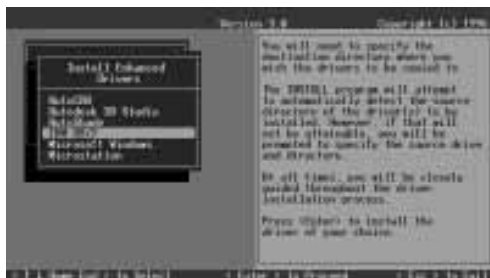
# VII. IBM OS/2 & OS/2 Warp

## Video Driver Installation

The ATI OS/2 video driver is to be used for the English version of OS/2 only.

### Installing ATI video drivers in English OS/2 or OS/2 Warp:

1. Start OS/2
2. Check that OS/2 is using standard VGA driver and other applications are closed.
3. Double-click the **OS/2 System** folder.
4. Double-click the **Command Prompts** folder.
5. Double-click the **OS/2 Full Screen** object.
6. Insert the installation CD (assuming your CD-ROM drive is letter D)
7. Type **D: <Enter>, CD OS2 <Enter>, OS2INST <Enter>**



8. Select **IBM OS/2 - Install OS/2 Driver** appears.
9. Select your version of OS/2.
10. Type **C:** (the drive letter of your OS/2 system) <Enter> - copying files appears.
11. Exit the installation program
12. Type **C: <Enter>, CD\MACH\_OS2 <Enter>, DSPINSTL**
13. Display Driver Install panel appears - select Primary Display.
14. Click **OK** - Driver selection list appears.
15. Select the latest ATI mach64 enhanced driver version from the list - click **OK**.
16. In the Monitor Configuration Selection Utility, select **Install Using Defaults for Monitor Type**, then click **OK**.
17. When the source directory panel appears, choose **Change** and enter path or use the default location of **C:\MACH\_OS2** - Click **SET**
18. Click **INSTALL**.
19. Type **EXIT** to close the OS/2 full screen command prompt.
20. **Shut down OS/2**
21. **Restart OS/2**. It will default to 640x480 in 256 colors. To change screen resolution and/or color depth, see your OS/2 User's Guide.

# VIII. Other Video Drivers

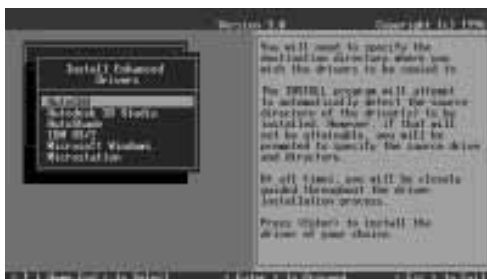
## AutoCAD Video Driver Installation

### Installing ATI AutoCAD Video Drivers:

1. Enter DOS mode (Exit Windows, do not use Windows DOS prompt)
2. Insert the installation CD (assuming your CD-ROM drive is letter D)
3. Type **D:** <Enter>, **CD DOS\ENGLISH (DOS\JAPANESE)** <Enter>, **INSTALL** <Enter>



4. Select **Drivers Installation** and press <Enter>
5. Select the Application name **AutoCAD** <Enter>



6. Follow the instructions to complete the installation of the drivers.
7. Press **Enter** when completed and press **ESC** twice and **Y** to exit the installation program.
8. Reboot the computer from DOS - Your Windows 3.x & DOS system ATI drivers should be installed and ready to use.

VIII. Other Drivers  
(AutoCAD)

# VIII. Other Video Drivers

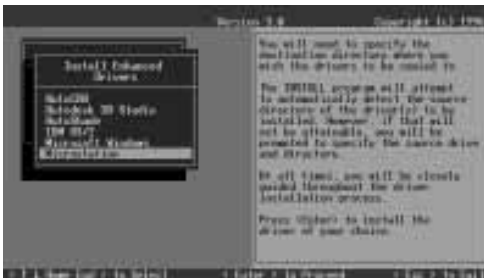
## Microstation Video Driver Installation

### Installing ATI Microstation Video Drivers:

1. Enter DOS mode (Exit Windows, do not use Windows DOS prompt)
2. Insert the CD (assuming your CD-ROM drive is letter D)
3. Type **D:** <Enter>, **CD DOS\ENGLISH (DOS\JAPANESE)** <Enter>, **INSTALL** <Enter>



4. Select **Drivers Installation** and press <Enter>
5. Select the Application name **Microstation** <Enter>



6. Follow the instructions to complete the installation of the drivers.
7. Press **Enter** when completed and press **ESC** twice and **Y** to exit the installation program.
8. Reboot the computer from DOS - Your Windows 3.x & DOS system ATI drivers should be installed and ready to use.

## VIII. Other Video Drivers

### Select System Information (optional)

The program will check the system for possible conflicts with the card, and display both the card and system configurations in the INFO BOX. In case of a conflict, it will issue a warning and suggest possible corrective actions.

Your ASUS 264 Series Card is a PCI Plug-and-Play compatible: your system will automatically allocate system resources and resolve possible conflicts between your Plug-and-Play compatible mach64 accelerator card and other expansion cards.

#### System Information



### Quick Setup (optional)

Select Quick Setup to configure the accelerator card to work with your monitor. As you highlight each monitor, the display specifications for that monitor type are listed in the INFO BOX. Proper monitor selection is necessary for correct resolution and refresh rate operation. You have four options to choose a correct Monitor Type.

**Selecting Your Monitor Type:** Factory Default/Apple.../IBM.../MIT.../NEC.../VESA-Std.../Generic.../Read VDIF.../Custom...

**Select Read VDIF...** If you have a VDIF file for your monitor and wish to use its parameters to automatically configure the mach64. Additional VDIF details are provided later in this chapter, in the section: *VDIF Files*

**Select Custom...** if none of the above applies to you, or you wish to manually configure the settings. Please refer to the information provided later in this chapter in the section: **Custom Configuration**

#### Notes On Refresh Rates:

- A higher refresh rate reduces screen flicker, and therefore reduces eye strain. Not all refresh rates are supported at all color depths. Refer to the features section for specifications of your ASUS 264 Series Card.
- The resolution used by your software application is independent of the refresh rate. Resolution depends on the installed software driver and selected display mode.

VIII. Other Drivers  
(Sys Info / Quick)

## VIII. Other Video Drivers

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### VDIF Files (optional)

VDIF files are VESA Display Information Format files. They contain all the necessary configuration parameters for getting optimal resolution and refresh rate operation from the specified monitor. Consult your monitor manufacturer for availability of VDIF files.

If you have a VDIF file for your monitor, select it. The INSTALL program will read the VDIF file and automatically configure the card to properly work with your monitor.

#### Procedure:

1. Start the INSTALL program.
2. Select Quick Setup and press <Enter>.
3. Insert into a floppy drive the disk containing the VDIF file.
4. Select READ VDIF... and press <Enter>.
5. Type in the location of the VDIF file (typically A: or B:). INSTALL will read the file and configure the card to support your monitor according to the VDIF specification.

#### Custom Configuration

If your monitor is not listed in the Monitor Selection Menu, or you are not using DDC or VDIF, you can set up display modes, i.e., resolutions and refresh rates, on the card using the Custom... option. This option is useful even if you had selected a monitor from the list. For example, you can modify the screen centering or refresh rate on one resolution, and not change the other resolutions.

#### Procedure:

1. Start the INSTALL program.
2. Select Quick Setup and press <Enter>.
3. Select Custom... and press <Enter>.
4. Pick a resolution, then a refresh rate. You will see a box outline.

**WARNING: Using the wrong refresh rate may permanently damage your monitor. For more information, please refer to the manual.**

NOTE: An incorrect Monitor Type setting may damage your monitor. Review your monitor specifications before making a selection from the Monitor Selection Menu. Do not exceed the monitor specifications. Using a refresh rate (i.e., vertical frequency) that is higher than specified may damage your monitor. The manufacturer will not be liable for any damage caused by incorrect settings. Consult your monitor manual to determine the highest refresh rate for each resolution that your monitor supports. A scrambled screen indicates your monitor is not capable of the selected display mode. In which case, you should immediately press <Esc> to exit.

**TIP:** If the monitor produces a scrambled display, try a lower refresh rate. If it is already at the lowest refresh rate, set that resolution to Not Supported.”

5. Adjust the size and position of the box outline. Press <Enter> to accept.
6. Repeat steps 2 and 3 until you are satisfied with the box outline for all the resolutions. When finished, remember to exit and save the settings.



## VIII. Other Video Drivers

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### Advanced Setup (optional)

If you wish to fine tune its settings for your monitor and system type, select Advanced Setup from the Main Menu. On-screen context sensitive help is displayed as you highlight each Advanced Menu item.

**WARNING:** The Advanced Configuration option allows you to use certain features that may add additional performance to your card. However these options may not be compatible with your system. If problems appear after an advanced option is changed, returning the card to factory defaults will rectify the situation.

#### Factory Defaults

The card can be reset to factory defaults by pressing <Shift>+<F7>.

#### Saving Your Configuration

Once you have finished configuring the necessary parameters described above, save them by pressing <F10>.

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# A. Troubleshooting

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## Diagnostics

All installed graphics modes in the mach64 accelerator can be viewed and tested, by running the INSTALL program from the DOS prompt, or by running a diagnostics program called M64DIAG.EXE. Do not run it in a windowed or full-screen DOS box.

In the INSTALL program, select Test Graphics Adapter from the Diagnostics... option of the Main Menu. The Test Graphics Adapter menu has the following options:

- VGA Tests ...
- Accelerator Tests ...

Any time you suspect there is a problem, especially during installation, run the above tests. The information provided in this appendix will enable you to solve most problems.

## Troubleshooting

Because a typical computer system consists of many different parts, difficulties may arise from a combination of items, from software or hardware installation, to monitor compatibility. Listed below are several checks you can make to help determine what the problem is.

## System Lockup

- If you are using a memory manager such as QEMM or 386MAX you need to modify the command line in the CONFIG.SYS file so that the address of the graphics card video BIOS, C000 - C7FF, is excluded. For example, add "EXCLUDE = C000 - C7FF" to the command line.
- Remove all unnecessary boards.
- Disable shadow RAM.
- Ensure that the board is seated correctly and that the card has been installed using the proper utilities.
- Try the card in a different system and reset to factory defaults using the INSTALL program. If the card works in another system, the problem is likely due to incorrect configuration.

# A. Troubleshooting

---

## **Test Patterns OK; Applications Do Not Sync**

The wrong monitor type has been selected. Change the settings in the INSTALL program.

## **Windows Driver Not Installing Properly**

Windows must be running in 386 Enhanced Mode. Incompatible memory managers may prevent Windows from starting in enhanced mode. If this occurs, remove the offending driver or memory manager.

## **Windows NT 4.0 driver cannot pass "Test VGA."**

Please bypass "Test VGA" then load ATI drivers after completing installation.

## **AutoCAD Driver Not Installing Properly**

If using a 386, ensure that AutoCAD has been configured for the appropriate ADI driver. The protected mode driver requires extended memory.

## **Error Codes and Messages**

Problems and solutions for some common errors found by the test program are provided for your reference as follows:

### **Memory aperture test failure or Diagnostics program locks or Reboots during aperture test**

If you receive an error message indicating that the memory aperture location is conflicting with your system memory, restart the INSTALL program as follows: INSTALL APMAP <Enter>. Now when you enable Memory Aperture, you must select a location above but not overlapping System Memory (S), BIOS (B) or Reserved (R) locations. Not applicable for ISA cards.

### **Desired resolution is disabled and displayed in gray**

A mode displayed in gray means that the BIOS is told this mode is not available, based on the card configuration. Reinstall using custom monitor selection.

### **Menu item is disabled and displayed in gray**

The test program has determined that the mode or test is not available under the current configuration. Aperture tests are not available if the aperture is disabled, and CRT mode and pixel depth are determined by current installation, DAC type, memory size, and memory type.

### **Adapter not detected**

This message should only occur when a mach64 ASIC is not detected. If this message occurs and a mach64 board is present, it may indicate an I/O conflict, conflicts between the Extended Memory Manager (EMM) and the video ROM. Try removing all other boards from the system and booting from a plain DOS disk. Try excluding the video BIOS address (C0000-C7FFF) from the memory manager. Refer to the documentation furnished with the memory manager software for information.

# A. Troubleshooting

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## **Any FIFO test error**

The effects of a bad command FIFO should be visible. (e.g., the screen does not come up, or it displays garbage.)

## **Quick memory test error**

Run Detailed RAM Test to confirm the error and identify the address of the error.

## **Detailed memory test error.**

Run Detailed RAM Test several times to confirm the error and take notes of any messages and error codes.

## **DAC LUT test failure.**

An error has occurred while testing the DAC LookUp Table. The problem should be visible on the top color bar of any 8bpp mode.

## **ROM checksum error.**

An error has been detected in the ROM.

## **Draw sequence failure.**

An error has occurred in the draw engine. If the error is intermittent, it might indicate a marginal RAM failure. The effects of this failure may not be immediately apparent.

# A. Troubleshooting

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## **Windows 95 mach64 enhanced display driver**

The Windows 95 mach64 enhanced display driver is capable of using monitor timing data contained within Windows 95. This data is selected by configuring a monitor type at Windows 95 installation time or via the "Settings" page of the display properties sheet.

The Windows 95 mach64 enhanced display driver may incorrectly interpret Windows 95 monitor timing data for some older monitors which require interlaced modes. This may cause some options to be disabled. A solution to this problem is to select one of the "(Standard monitor types)" available via the settings page of the display properties sheet.

If you change the selected monitor type via the "Settings" page of the display properties sheet the new timing data may not take effect until after restarting Windows 95. A solution to this problem is to always restart Windows 95 after changing the monitor type.

In Windows 95, display drivers can be installed via the "Add New Hardware" wizard. This is not recommended because when the Windows 95 mach64 enhanced display driver is installed via the "Add New Hardware" wizard the "Settings" page does not get installed into the mach64 display adapter property sheet.

## **Windows 95 property page problems**

While adjusting monitor settings in the Adjustment page of the Display Properties sheet, your monitor could become unreadable. If this occurs, press the ESC key to return to your previous monitor settings.

## **ATI Video Player Notes**

**Q:** Why can my Video Player not execute in Windows 3.1 ?

**A:** The Video Player needs at least 600K DOS CONVENTIONAL MEMORY. You can try to close some programs to acquire more memory to use. If it still happens, return to DOS and run "MEMMAKER" in your DOS directory to modify your memory configuration. Quitting some DOS TSRs (Terminate and Stay Resident) programs also helps.

**Q:** After installing Xing MPEG Player, my ATI Video Player can not play Video CD even standard MPEG files.

**A:** Xing MPEG Player and ATI Video Player can not be installed together. They conflict with each other. The previously installed player will work abnormally. You can re-install ATI Video Player to recover it.

# IX. HARDWARE SPECIFICATIONS

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## ASUS PCI-V264CT & ASUS PCI-AV264CT-N

In the VGA subsystem, the PCI-V264CT and PCI-AV264CT-N is designed to provide high performance, low cost PCI graphics adapter, which uses ATI advanced 264CT 64-bit graphics engine with 135MHz 24-bit true color RAMDAC and a dual clock frequency synthesizer. The PCI-V264CT and PCI-AV264CT-N accelerates 256 colors at 1280 x 1024, 65,000 colors at 1024 x 768, 16.7 million colors at 800 x 600 and supports 75 Hz refresh rate at 1280 x 1024 resolution.

Active power management techniques are used to monitor activity levels within these graphics controllers and to perform real-time power reductions such as dynamic clock control and graphics engine shutdown. Because full-speed operation can be restored without delay, these techniques do not impact performance.

For Video playback features, PCI-V264CT and PCI-AV264CT-N supports software MPEG decoder for Windows 3.1x and Windows 95. The driver not only provides smooth video playback, but also provides user friendly utilities that allows customizing appearances.

## ASUS PCI-AV264CT-N

The sophisticated MediaBus Rev 2.0 design of PCI-AV264CT-N MediaBus VGA/Audio adapter provides high performance VGA and high quality audio in one card which reduces user's cost yet saves expansion slot space to provide flexibility and total solution to multimedia system.

The PCI-AV264CT-N includes the above Video features and adds Creative Labs ViBRA 16C audio chipset. This provides high quality 16-bit full duplex audio in/output and 100% Sound Blaster Pro & Sound Blaster 16 compatibility for all the PC audio and game applications.

# IX. HARDWARE SPECIFICATIONS

## Video Features (PCI-V264CT and PCI-AV264CT-N)

- 32-bit PCI Local Bus graphics adapter
- ATI-264CT Graphics Accelerator, 64-bit DRAM memory interface
- Integrated 24-bit RAMDAC (135MHz Output Pixel Clock Interface)
- Max resolution at 1280x1024x256 colors at 75Hz refresh rate with 2MB
- DDC1 /2B monitor supported
- DPMS (Display Power Management) for Green PC Power Saving

## 2D Accelerator

- Hardware acceleration-Rectangle Fill, Line Draw, BitBlit, Polygon Fill, Panning/Scrolling, Bit Masking, Monochrome Expansion, Scissoring, and full ROP support
- Hardware cursor up to 64x64x2
- Acceleration provided in 4/8/16/24/32bpp modes. Packed pixel support (24bpp) enables true color in 1MB configurations
- Game acceleration for Microsoft's Direct Draw - Double Buffering, Virtual Sprites, Transparent Blit, Masked Blit, and Context Chaining

## Video Accelerator

- Support for 26-pin VESA compatible VGA Feature Connector (VFC) that supports up to 1024x768 resolution.

## Resolution Table

When discussing color depth, 8 bits per pixel (8bpp) is the same as 256 colors and 16bpp = 65,000 colors and 24bpp = 16.7 million colors.

PCI-(A)V264CT	Resolution	Colors	Max Referesh Rates	
			1MB	2MB
	640 x 480 x 8	256	120Hz	120Hz
	640 x 480 x 16	65,000	120Hz	120Hz
	640 x 480 x 24	16.7 Million	85Hz	90Hz
	800 x 600 x 8	256	100Hz	100Hz
	800 x 600 x 16	65,000	75Hz	75Hz
	800 x 600 x 24	16.7 Million	-----	60Hz
	1024 x 768 x 8	256	100Hz	100Hz
	1024 x 768 x 16	65,000	-----	75Hz
	1024 x 768 x 24	16.7 Million	-----	-----
	1280 x 1024 x 8	256	-----	75Hz
	1280 x 1024 x 16	65,000	-----	-----
	1280 x 1024 x 24	16.7 Million	-----	-----



# IX. HARDWARE SPECIFICATIONS

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## Audio Features (PCI-AV264CT-N)

- Creative Labs ViBRA 16C PnP Audio Chip
- Full Duplex Support
- 16-bit or 8-bit PCM 5KHz to 44.1KHz
- Wave Table Upgradeable
- Software: Windows 95, Windows 3.1x, Wave Editor, Wave OLE, Quick CD, Mixer Control, Quick Player, Audio Rack: CD Player, Midi Player, Wave Player

## Software

- 2D driver support
  - Register compatible with IBM VGA standards
  - BIOS compatible with VESA Super VGA
  - Full support of Microsoft DCI and DirectDraw
- Easy-to-use Windows utilities
  - WinSwitch provides on-the-fly switching of resolution and color depth within Windows
  - DeskTop supports panning and scrolling across a virtual workspace of up to 1600x1200
  - Utility for selecting DPMS power-down time-outs
- Video playback application and codec
  - Video codec support for MPEG, Indeo, and Cinepak
  - ATI MPEG video player application with VCR-like controls
- Extensive software driver support for major applications and operating systems as follows:
  - Windows® 3.1, Windows® 95, Windows NT™, AutoCAD™, Microstation™, OS/2®, VESA BIOS Extension support

## Adding Additional Memory

The additional memory delivers a larger virtual desktop, makes deeper color depths at higher resolutions possible, and, in some display modes, can result in improved performance.

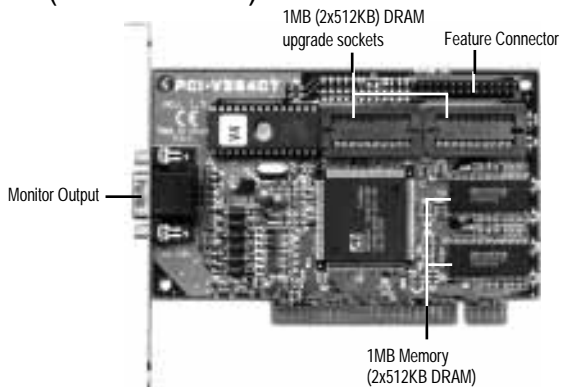
The PCI-V264CT and PCI-AV264CT-N are available with either 1MB or 2MB of EDO display memory. If your board shipped with just 1MB of display memory, you can easily upgrade the memory to 2MB.

The PCI-V264CT and PCI-AV264CT-N provides two sockets for users to upgrade the VGA display memory. You will need two DRAM memory chips that are 256K x 16, 60ns, DUAL CAS#, EDO memory. Ask your authorized dealer for detailed memory information before you upgrade this card.

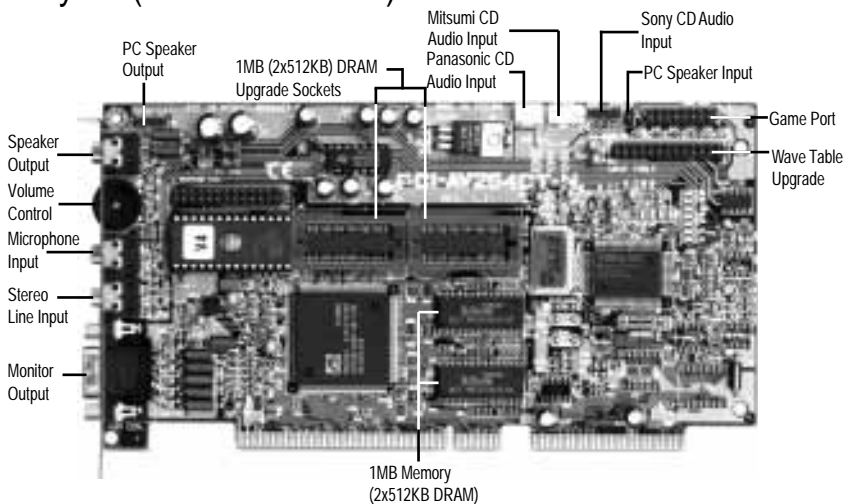
Install the DRAM into the sockets with the same orientation as the onboard chips.

# IX. HARDWARE SPECIFICATIONS

## Layout (PCI-V264CT)



## Layout (PCI-AV264CT-N)



IX. HARDWARE  
(Layout/Connectors)

## CD-Audio Connector Pin Definitions

<i>Panasonic</i>	<i>Sony</i>	<i>Mitsumi</i>	<i>PC Speaker In</i>	<i>PC Speaker Out</i>
<u>Pin</u> <u>Definition</u>	<u>Pin</u> <u>Definition</u>	<u>Pin</u> <u>Definition</u>	<u>Pin</u> <u>Definition</u>	<u>Pin</u> <u>Definition</u>
1 Left Signal	1 Right Signal	1 GND	1 Mono Signal	1 Right Signal
2 GND	2 GND	2 Left Signal	2 GND	2 GND
3 Right Signal	3 GND	3 GND	---	3 Left Signal
---	4 Left Signal	4 Right Signal	---	4 GND

# IX. HARDWARE SPECIFICATIONS

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## ASUS PCI-V264VT & ASUS PCI-AV264VT

In the VGA subsystem, the ASUS PCI-V264VT and PCI-AV264VT is designed to provide high performance, low cost PCI graphics adapter, which uses ATI advanced 264VT 64-bit graphics engine with 135MHz 24-bit true color RAMDAC and a dual clock frequency synthesizer. The ASUS PCI-V264VT and PCI-AV264VT accelerates 256 colors at 1280 x 1024, 65,000 colors at 1024 x 768, 16.7 million colors at 800 x 600 and supports 75 Hz refresh rate at 1280 x 1024 resolution.

Active power management techniques are used to monitor activity levels within these graphics controllers and to perform real-time power reductions such as dynamic clock control and graphics engine shutdown. Because full-speed operation can be restored without delay, these techniques do not impact performance.

For multimedia video and game function acceleration, the ASUS PCI-V264VT and PCI-AV264VT have color interpolation for full screen, full motion video, and provides fast 30 frame/second animation engine, double buffering, fast host to screen bitblts, virtual sprite, smooth page scrolling and object caching for game functions. PC users with this adapter could enjoy smooth motion video and SEGA/SNES-class games.

For Video playback features, ASUS PCI-V264VT and PCI-AV264VT supports software MPEG decoder for Windows 3.1x and Windows 95. The driver not only provides smooth video playback, but also provides user friendly utilities that allows customizing appearances.

## ASUS PCI-AV264VT

The sophisticated MediaBus Rev 2.0 design of ASUS PCI-AV264VT MediaBus VGA/Audio adapter provides high performance VGA and high quality audio in one card which reduces user's cost yet saves expansion slot space to provide flexibility and total solution to multimedia system.

The ASUS PCI-AV264VT includes the above Video features and adds Creative Labs ViBRA 16C audio chipset and supported synthesizer. This provides high quality 16-bit full duplex audio in/output and 100% Sound Blaster Pro & Sound Blaster 16 compatibility for all the PC audio and game applications.

# IX. HARDWARE SPECIFICATIONS

## Video Features (PCI-V264VT and PCI-AV264VT)

- 32-bit PCI Local Bus graphics adapter
- ATI-264VT Graphics Accelerator, 64-bit DRAM memory interface
- Integrated 24-bit RAMDAC (135MHz Output Pixel Clock Interface)
- Max resolution at 1280x1024x256 colors at 75Hz refresh rate with 2MB
- DDC1 /2B monitor supported
- DPMS (Display Power Management) for Green PC Power Saving

## 2D Accelerator

- Hardware acceleration-Rectangle Fill, Line Draw, BitBlit, Polygon Fill, Panning/Scrolling, Bit Masking, Monochrome Expansion, Scissoring, and full ROP support
- Hardware cursor up to 64x64x2
- Acceleration provided in 4/8/16/24/32bpp modes. Packed pixel support (24bpp) enables true color in 1MB configurations
- Game acceleration for Microsoft's Direct Draw - Double Buffering, Virtual Sprites, Transparent Blit, Masked Blit, and Context Chaining

## Video Accelerator

- Filtered horizontal & vertical scalers for TV-quality, full-screen & full-motion video playback
- Integrated video line buffers support filtered video scaling
- Color interpolation during scaling for improved high resolution video quality
- Supports AMC for additional video expansion capabilities as follows:
- Optional TV Tuner card available for video capture, video phone, TV overlay, or TV tuner applications.
- Optional MPEG-1 decoder for hardware video
- Support for 26-pin VESA compatible VGA Feature Connector (VFC) that supports up to 1024x768 resolution.

## Resolution Table

When discussing color depth, 8 bits per pixel (8bpp) is the same as 256 colors and 16bpp = 65,000 colors and 24bpp = 16.7 million colors.

PCI-(A)V264VT	Colors	Max Refresh Rates	
		1MB	2MB
640 x 480 x 8	256	120Hz	120Hz
640 x 480 x 16	65,000	120Hz	120Hz
640 x 480 x 24	16.7 Million	85Hz	90Hz
800 x 600 x 8	256	100Hz	100Hz
800 x 600 x 16	65,000	75Hz	75Hz
800 x 600 x 24	16.7 Million	-----	60Hz
1024 x 768 x 8	256	100Hz	100Hz
1024 x 768 x 16	65,000	-----	75Hz
1024 x 768 x 24	16.7 Million	-----	-----
1280 x 1024 x 8	256	-----	75Hz
1280 x 1024 x 16	65,000	-----	-----
1280 x 1024 x 24	16.7 Million	-----	-----

# IX. HARDWARE SPECIFICATIONS

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## Audio Features (PCI-AV264VT)

- Creative Labs ViBRA 16C PnP Audio Chip
- Full Duplex Support
- 16-bit or 8-bit PCM 5KHz to 44.1KHz
- Wave Table Upgradeable
- Software: Windows 95, Windows 3.1x, Wave Editor, Wave OLE, Quick CD, Mixer Control, Quick Player, Audio Rack: CD Player, Midi Player, Wave Player

## Software

- 2D driver support
  - Register compatible with IBM VGA standards
  - BIOS compatible with VESA Super VGA
  - Full support of Microsoft DCI and DirectDraw
- Easy-to-use Windows utilities
  - WinSwitch provides on-the-fly switching of resolution and color depth within Windows
  - DeskTop supports panning and scrolling across a virtual workspace of up to 1600x1200
  - Utility for selecting DPMS power-down time-outs
- Video playback application and codec
  - Video codec support for MPEG, Indeo, and Cinepak
  - ATI MPEG video player application with VCR-like controls
- Extensive software driver support for major applications and operating systems as follows:
  - Windows® 3.1, Windows® 95, Windows NT™, AutoCAD™, Microstation™, OS/2®, VESA BIOS Extension support

## Adding Additional Memory

The additional memory delivers a larger virtual desktop, makes deeper color depths at higher resolutions possible, and, in some display modes, can result in improved performance.

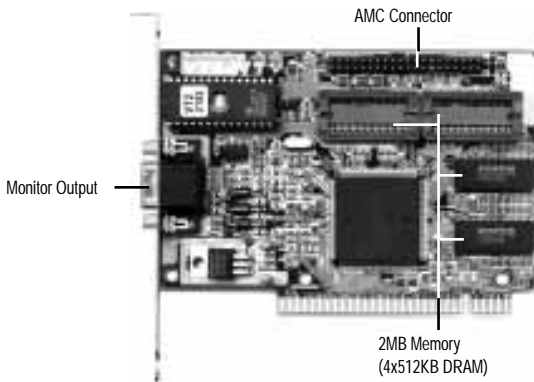
The PCI-V264VT and PCI-AV264VT are available with either 1MB or 2MB of EDO display memory. If your board shipped with just 1MB of display memory, you can easily upgrade the memory to 2MB.

The PCI-V264VT and PCI-AV264VT provides two sockets for users to upgrade the VGA display memory. You will need two DRAM memory chips that are 256K x 16, 60ns, DUAL CAS#, EDO memory. Ask your authorized dealer for detailed memory information before you upgrade this card.

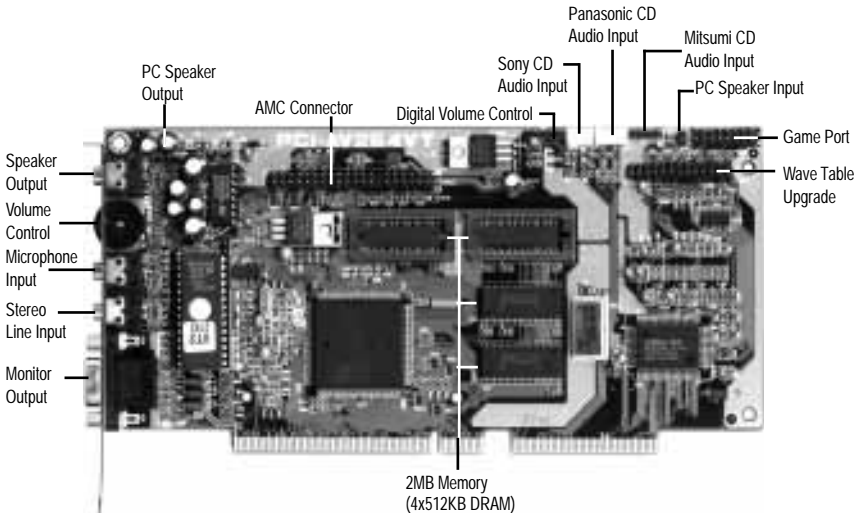
Install the DRAM into the sockets with the same orientation as the on-board chips.

# IX. HARDWARE SPECIFICATIONS

## Layout (ASUS PCI-V264VT)



## Layout (ASUS PCI-AV264VT)



**IX. HARDWARE**  
(Layout/Connectors)

# IX. HARDWARE SPECIFICATIONS

## CD-Audio Connector Pin Definitions

<i>Panasonic</i>	<i>Sony</i>	<i>Mitsumi</i>	<i>PC Speaker In</i>	<i>PC Speaker Out</i>
<u>Pin Definition</u>	<u>Pin Definition</u>	<u>Pin Definition</u>	<u>Pin Definition</u>	<u>Pin Definition</u>
1 Left Signal	1 Right Signal	1 GND	1 Mono Signal	1 Right Signal
2 GND	2 GND	2 Left Signal	2 GND	2 GND
3 Right Signal	3 GND	3 GND	----	3 Left Signal
----	4 Left Signal	4 Right Signal	----	4 GND

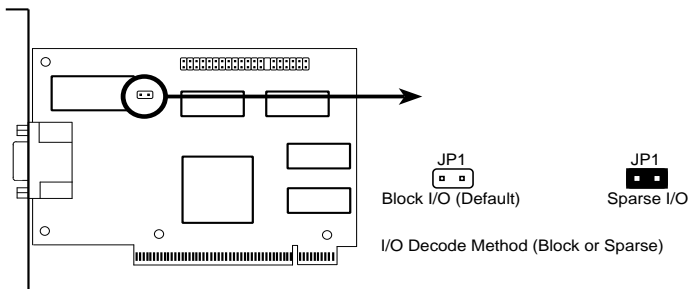
### *Digital Volume Control*

<u>Pin</u>	<u>Definition</u>
1,3,5	Ground
2	Volume Up
4	Volume Down

## PCI-V264VT Jumper

**NOTE:** For some older motherboards, using this card will not allow the system to boot without setting the card to SPARSE I/O mode. If your system does not boot-up, follow the diagram below for jumper location and setting.

<u>I/O Decode Method</u>	<u>JP1</u>
Block I/O	Open
Sparse I/O	Short



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# IX. HARDWARE SPECIFICATIONS

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## ASUS PCI-V264GT and ASUS PCI-AV264GT

The PCI-V264GT and PCI-AV264GT adapter takes advantage of 32-bit PCI bus to provide high performance graphics. The PCI-V264GT and PCI-AV264GT features the 3D RAGE™ and is the first graphics controller to integrate 3D, 2D, and video accelerators, palette DAC, and dual clock synthesizer into a single chip. The PCI-V264GT and PCI-AV264GT is a multi-function chip that delivers superior texture mapping performance for 3D games, 3D Web browsing, TV quality video scaling for MPEG playback, industry-leading mach64 2D performance, video expansion capability for video conferencing, TV-Tuner, and other applications.

Active power management techniques are used to monitor activity levels within these graphics controllers and to perform real-time power reductions such as dynamic clock control and graphics engine shutdown. Because full-speed operation can be restored without delay, these techniques do not impact performance.

For multimedia video and game function acceleration, the PCI-V264GT and PCI-AV264GT has color interpolation for full screen, full motion video, and provides fast 30 frame/second animation engine, double buffering, fast host to screen bitblts, virtual sprite, smooth page scrolling and object caching for game functions. PC users with this adapter could enjoy smooth motion video and SEGA/SNES-class games.

For Video playback features, PCI-V264GT and PCI-AV264GT supports software MPEG decoder. The driver not only provides smooth video playback, but also provides user friendly utilities that allows customizing appearances.

## ASUS PCI-AV264GT

The ASUS PCI-AV264GT uses Creative Labs ViBRA 16C audio chipset. This provides high quality 16-bit full duplex audio in/output and 100% Sound Blaster compatibility for all the PC audio and game applications.

# IX. HARDWARE SPECIFICATIONS

## Video Features (PCI-V264GT and PCI-AV264GT)

- 32-bit PCI Local Bus graphics adapter
- ATI RAGE Graphics Accelerator, 64-bit 2MB EDO DRAM memory onboard.
- Integrated 24-bit RAMDAC (170MHz Output Pixel Clock Interface)
- Max resolution at 1600x1200x256 colors at 66Hz refresh rate with 2MB
- DDC1 /2B monitor supported
- DPMS (Display Power Management) for Green PC Power Saving

## 3D Accelerator

- Complete 3D primitives - Points, Lines, Triangles, Trapezoids, & Rectangles
- Full screen or windows double buffering for smoother animation
- Dithering down to 6 or 16 bits per pixels (bpp) from 24bpp 3D engine for smaller memory foot print
- 3D Features: Perspectively Correct Texture Mapping, Gouraud Shading, Z-Buffer, Mip Maps, Lit and Video Textures, Alpha Blending & Interpolation, and Fog Effects.

## 2D Accelerator

- Hardware acceleration-Rectangle Fill, Line Draw, BitBlit, Polygon Fill, Panning/Scrolling, Bit Masking, Monochrome Expansion, Scissoring, and full ROP.
- Hardware cursor up to 64x64x2
- Acceleration provided in 4/8/16/24/32bpp modes. Packed pixel support (24bpp) enables true color in 1MB configurations
- Game acceleration for Microsoft's Direct Draw - Double Buffering, Virtual Sprites, Transparent Blit, Masked Blit, and Context Chaining

## Resolution Table

When discussing color depth, 8 bits per pixel (8bpp) is the same as 256 colors and 16bpp = 65,000 colors and 24bpp = 16.7 million colors.

PCI-(A)V264GT		Max Referesh Rates
Resolution	Colors	2MB
640 x 480 x 8	256	120Hz
640 x 480 x 16	65,000	120Hz
640 x 480 x 24	16.7 Million	120Hz
800 x 600 x 8	256	120Hz
800 x 600 x 16	65,000	120Hz
800 x 600 x 24	16.7 Million	120Hz
1024 x 768 x 8	256	120Hz
1024 x 768 x 16	65,000	120Hz
1024 x 768 x 24	16.7 Million	-----
1280 x 1024 x 8	256	85Hz
1280 x 1024 x 16	65,000	-----
1280 x 1024 x 24	16.7 Million	-----
1600 x 1200 x 8	256	66Hz

# IX. HARDWARE SPECIFICATIONS

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## Video Accelerator

- Filtered horizontal & vertical scalers for TV-quality, full-screen & full-motion video playback
- Integrated video line buffers support filtered video scaling
- Color interpolation during scaling for improved high resolution video quality
- Supports AMC for additional video expansion capabilities as follows:
- Optional TV Tuner card available for video capture, video phone, TV overlay, or TV tuner applications.
- Optional MPEG-1 decoder for hardware video
- Support for 26-pin VESA compatible VGA Feature Connector (VFC) that supports up to 1024x768 resolution.

## Audio Features (PCI-AV264GT)

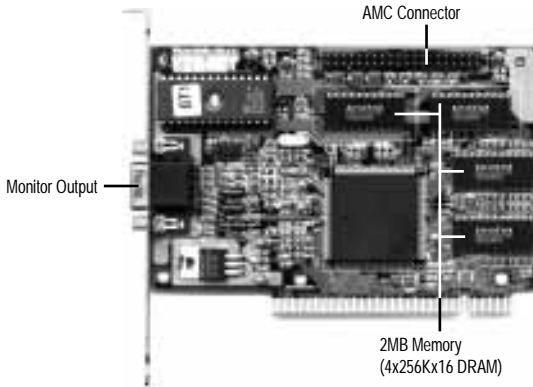
- Creative Labs ViBRA 16C PnP Audio Chip
- Full Duplex Support
- 16-bit or 8-bit PCM 5KHz to 44.1KHz
- Wave Table Upgradeable
- Software: Windows 95, Windows 3.1x, Wave Editor, Wave OLE, Quick CD, Mixer Control, Quick Player, Audio Rack: CD Player, Midi Player, Wave Player

## Software

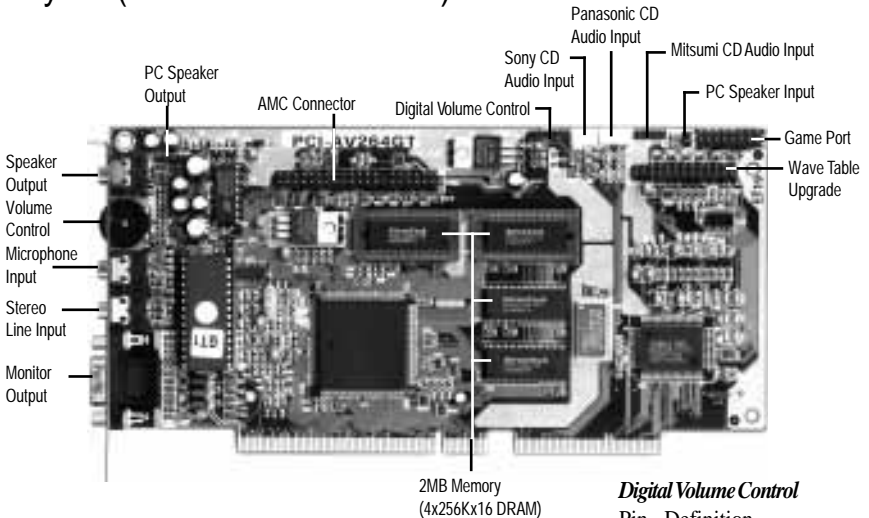
- 2D driver support
  - Register compatible with IBM VGA standards
  - BIOS compatible with VESA Super VGA
  - Full support of Microsoft DCI and DirectDraw
- 3D driver support
  - Microsoft Direct 3D including support for Reality Lab and OpenGL
  - ATI 3D RAGE DOS and Windows API
  - Intel 3DR
- Easy-to-use Windows utilities
  - WinSwitch provides on-the-fly switching of resolution and color depth within Windows
  - DeskTop supports panning and scrolling across a virtual workspace of up to 1600x1200
  - Utility for selecting DPMS power-down time-outs
- Video playback application and codec
  - Video codec support for MPEG, Indeo, and Cinepak
  - ATI MPEG video player application with VCR-like controls
- Extensive software driver support for major applications and operating systems as follows:
  - Windows® 3.1, Windows® 95, Windows NT™, AutoCAD™, Microstation™, OS/2®, VESA BIOS Extension support

# IX. HARDWARE SPECIFICATIONS

## Layout (ASUS PCI-V264GT)



## Layout (ASUS PCI-AV264GT)



IX. HARDWARE  
(Layout/Connectors)

### Digital Volume Control

#### Pin Definition

- 1,3,5 Ground
- 2 Volume Up
- 4 Volume Down

## CD-Audio Connector Pin Definitions

<i>Panasonic</i>	<i>Sony</i>	<i>Mitsumi</i>	<i>PC Speaker In</i>	<i>PC Speaker Out</i>
<u>Pin Definition</u>	<u>Pin Definition</u>	<u>Pin Definition</u>	<u>Pin Definition</u>	<u>Pin Definition</u>
1 Left Signal	1 Right Signal	1 GND	1 Mono Signal	1 Right Signal
2 GND	2 GND	2 Left Signal	2 GND	2 GND
3 Right Signal	3 GND	3 GND	----	3 Left Signal
----	4 Left Signal	4 Right Signal	----	4 GND

# IX. HARDWARE SPECIFICATIONS

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## ASUS PCI-(A)V264GT/Plus

The PCI-V264GT/Plus and PCI-AV264GT/Plus adapter takes advantage of 32-bit PCI bus to provide high performance graphics. The PCI-V264GT/Plus and PCI-AV264GT/Plus features the 3D RAGE™ and is the first graphics controller to integrate 3D, 2D, and video accelerators, palette DAC, and dual clock synthesizer into a single chip. The PCI-V264GT/Plus and PCI-AV264GT/Plus is a multi-function chip that delivers superior texture mapping performance for 3D games, 3D Web browsing, TV quality video scaling for MPEG playback, industry-leading mach64 2D performance, video expansion capability for video conferencing, and other applications.

Active power management techniques are used to monitor activity levels within these graphics controllers and to perform real-time power reductions such as dynamic clock control and graphics engine shutdown. Because full-speed operation can be restored without delay, these techniques do not impact performance.

For multimedia video and game function acceleration, the PCI-V264GT/Plus and PCI-AV264GT/Plus has color interpolation for full screen, full motion video, and provides fast 30 frame/second animation engine, double buffering, fast host to screen bitblts, virtual sprite, smooth page scrolling and object caching for game functions. PC users with this adapter could enjoy smooth motion video and SEGA/SNES-class games.

For Video playback features, PCI-V264GT/Plus and PCI-AV264GT/Plus supports software MPEG decoder. The driver not only provides smooth video playback, but also provides user friendly utilities that allows customizing appearances.

## ASUS PCI-AV264GT/Plus

The ASUS PCI-AV264GT/Plus uses Creative Labs ViBRA 16C audio chipset. This provides high quality 16-bit full duplex audio in/output and 100% Sound Blaster Pro & Sound Blaster 16 compatibility for all the PC audio and game applications.

# IX. HARDWARE SPECIFICATIONS

## Video Features (PCI-(A)V264GT/Plus)

- 32-bit PCI Local Bus graphics adapter
- ATI RAGE Graphics Accelerator, 64-bit SGRAM memory interface
- Comes with 2MB SGRAM standard and upgradeable to 4MB SGRAM
- Integrated 24-bit RAMDAC (170MHz Output Pixel Clock Interface)
- Max resolution at 1600x1200 high color at 66Hz refresh rate with 4MB
- DDC1 /2B monitor supported
- DPMS (Display Power Management) for Green PC Power Saving

## 3D Accelerator

- Complete 3D primitives - Points, Lines, Triangles, Trapezoids, & Rectangles
- Full screen or windows double buffering for smoother animation
- Dithering down to 6 or 16 bits per pixels (bpp) from 24bpp 3D engine for smaller memory foot print
- 3D Features: Respectively Correct Texture Mapping, Gouraud Shading, Z-Buffer, Mip Maps, Lit and Video Textures, Alpha Blending & Interpolation, and Fog Effects.

## 2D Accelerator

- Hardware acceleration-Rectangle Fill, Line Draw, BitBlt, Polygon Fill, Panning/Scrolling, Bit Masking, Monochrome Expansion, Scissoring, and full ROP .
- Hardware cursor up to 64x64x2
- Acceleration provided in 4/8/16/24/32bpp modes. Packed pixel support (24bpp) enables true color in 1MB configurations
- Game acceleration for Microsoft's Direct Draw - Double Buffering, Virtual Sprites, Transparent Blit, Masked Blit, and Context Chaining

## Resolution Table

When discussing color depth, 8 bits per pixel (8bpp) is the same as 256 colors and 16bpp = 65,000 colors and 24bpp = 16.7 million colors.

PCI-(A)V264GT/Plus		Max Referesh Rates	
Resolution	Colors	2MB	4MB
640 x 480 x 8	256	120Hz	120Hz
640 x 480 x 16	65,000	120Hz	120Hz
640 x 480 x 24	16.7 Million	120Hz	120Hz
800 x 600 x 8	256	120Hz	120Hz
800 x 600 x 16	65,000	120Hz	120Hz
800 x 600 x 24	16.7 Million	120Hz	120Hz
1024 x 768 x 8	256	120Hz	120Hz
1024 x 768 x 16	65,000	120Hz	120Hz
1024 x 768 x 24	16.7 Million	-----	120Hz
1280 x 1024 x 8	256	85Hz	85Hz
1280 x 1024 x 16	65,000	-----	85Hz
1280 x 1024 x 24	16.7 Million	-----	75Hz
1600 x 1200 x 8	256	66Hz	66Hz
1600 x 1200 x 16	High Color	-----	66Hz

# IX. HARDWARE SPECIFICATIONS

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## Video Accelerator

- Filtered horizontal & vertical scalers for TV-quality, full-screen & full-motion video playback
- Integrated video line buffers support filtered video scaling
- Color interpolation during scaling for improved high resolution video quality
- Supports AMC for additional video expansion capabilities as follows:
- Optional TV Tuner card available for video capture, video phone, TV overlay, or TV tuner applications.
- Optional MPEG-1 decoder for hardware video
- Support for 26-pin VESA compatible VGA Feature Connector (VFC) that supports up to 1024x768 resolution.

## Audio Features (PCI-AV264GT/Plus)

- Creative Labs ViBRA 16C PnP Audio Chip
- Full Duplex Support
- 16-bit or 8-bit PCM 5KHz to 44.1KHz
- Wave Table Upgradeable
- Software: Windows 95, Windows 3.1x, Wave Editor, Wave OLE, Quick CD, Mixer Control, Quick Player, Audio Rack: CD Player, Midi Player, Wave Player

## Software

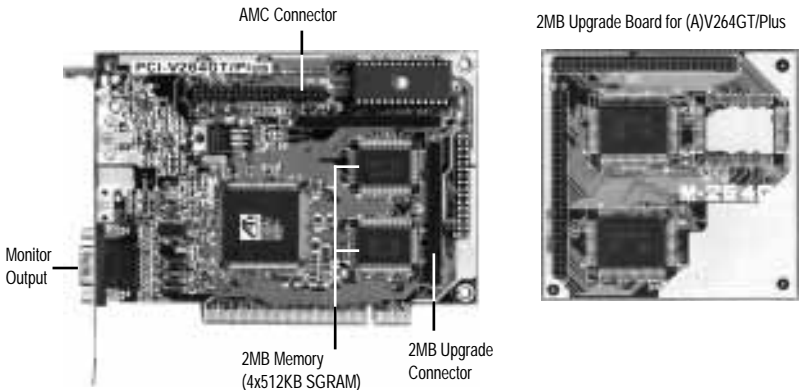
- 2D driver support
  - Register compatible with IBM VGA standards
  - BIOS compatible with VESA Super VGA
  - Full support of Microsoft DCI and DirectDraw
- 3D driver support
  - Microsoft Direct 3D including support for Reality Lab and OpenGL
  - ATI 3D RAGE DOS and Windows API
  - Intel 3DR
- Easy-to-use Windows utilities
  - WinSwitch provides on-the-fly switching of resolution and color depth within Windows
  - DeskTop supports panning and scrolling across a virtual workspace of up to 1600x1200
  - Utility for selecting DPMS power-down time-outs
- Video playback application and codec
  - Video codec support for MPEG, Indeo, and Cinepak
  - ATI MPEG video player application with VCR-like controls
- Extensive software driver support for major applications and operating systems as follows:
  - Windows® 3.1, Windows® 95, Windows NT™, AutoCAD™, Microstation™, OS/2®, VESA BIOS Extension support

## Adding Additional Memory

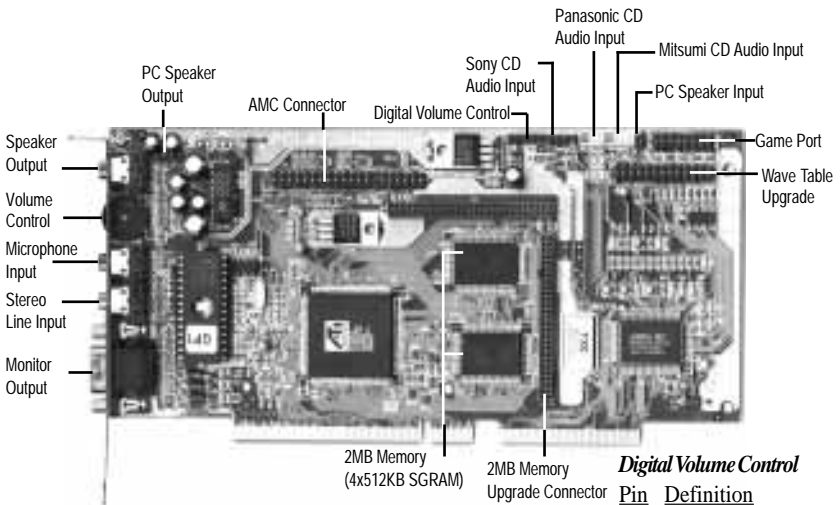
The 264GT/Plus series of Audio and/or Video cards have 2MB SGRAM onboard which can be upgraded by adding a 2MB memory board (see next page).

# IX. HARDWARE SPECIFICATIONS

## Layout (ASUS PCI-V264GT/Plus)



## Layout (ASUS PCI-AV264GT/Plus)



IX. HARDWARE  
(Layout/Connectors)

**Digital Volume Control**

Pin	Definition
1,3,5	Ground
2	Volume Up
4	Volume Down

### CD-Audio Connector Pin Definitions

<b>Panasonic</b>	<b>Sony</b>	<b>Mitsumi</b>	<b>PC Speaker In</b>	<b>PC Speaker Out</b>	
<u>Pin</u>	<u>Definition</u>	<u>Pin</u>	<u>Definition</u>	<u>Pin</u>	<u>Definition</u>
1	Left Signal	1	Right Signal	1	GND
2	GND	2	GND	2	Left Signal
3	Right Signal	3	GND	3	GND
----		4	Left Signal	4	Right Signal
				----	