

# XCLAIM™ VR 128

## User's Guide



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# Getting Started

## Introduction

XCLAIM VR 128 is the ultimate 3D gaming and multimedia solution for your PCI Macintosh. Your new accelerator is five products in one:

- QuickDraw 3D accelerator providing arcade style 3D gaming action
- QuickDraw accelerator supporting resolutions up to 1600x1200
- QuickTime playback accelerator for full screen, full motion, TV quality video
- QuickTime capture engine for capturing stills or QuickTime movies up to 320x240 at 30 frames per second
- Mac2TV video out enabling big screen presentations, game play and movie output to tape
- OpenGL<sup>®</sup> support using Apple OpenGL software

The easy-to-access, easy-to-use ATI Config Menu, on the menu bar, provides access to ATI Guide, providing instant access to online help, and the ATI Displays control panel, which provides quick access to all of XCLAIM VR 128's easy-to-use features.



A glossary of the bold terms used throughout this manual is available in Appendix D of this user guide and also in the ATI Guide.

## What You'll Need

The XCLAIM VR 128 card runs with the following minimum system requirements:

- Power Macintosh or Mac OS compatible computer, with a PCI expansion slot
- Mac OS 8.0 or later software
- Apple monitor or VGA-style monitor (*see note below*)
- QuickDraw 3D 1.5.4 or later
- QuickTime 3.0 or later (including QuickTime 4.0)
- Minimum 16MB of system memory (QuickDraw 3D requires 16MB of system memory)



Apple monitors without a VGA connector must use the included adapter to connect to the XCLAIM VR 128 graphics card.

## Related Documentation

The README file summarizes the latest product revisions. Click the README icon on the installation disk to open this file.

The XCLAIM VR 128 card comes with ATI Guide, which provides online help for making the best use of your card's features. There are two methods of accessing the ATI Guide. From the Mac OS menu bar under the ATI icon  choose ATI Guide. From the ATI Displays control panel, you can also access the ATI Guide by clicking on the Apple Guide  icon.



## Installing Your Hardware

XCLAIM VR 128 fits into connectors called expansion slots, inside your computer.

Your Macintosh has one or more slots, each designed to accept Peripheral Component Interconnect (PCI) cards.



### WARNING

- The manufacturer assumes no liability for any damage, caused directly or indirectly, by improper installation of components by unauthorized service personnel. **If you do not feel comfortable performing the installation, consult a qualified technician.**
- Make sure power is off during installation; otherwise, damage to system components, the graphics accelerator card, and injury to yourself may result.



*The following procedure details the installation of a card in a typical Macintosh PCI tower. If your system does not match this configuration, please refer to your system documentation for expansion card installation instructions.*



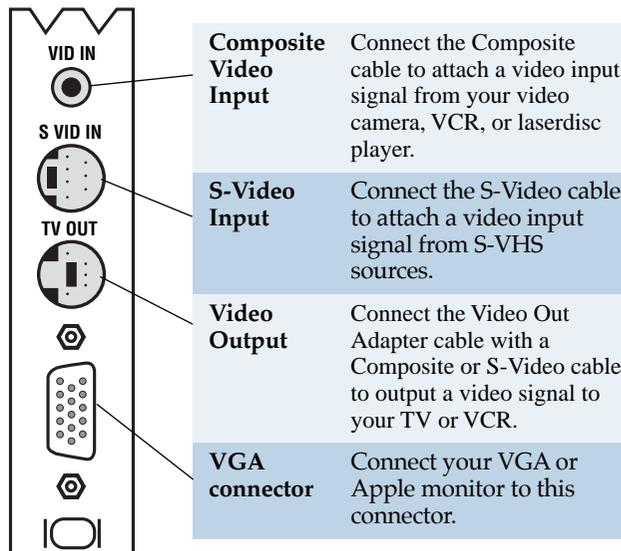
## WARNING

- If your system hangs after installing the XCLAIM VR 128 card, you may have an old graphics accelerator extension that is incompatible with XCLAIM VR 128.

Restart your Mac and hold down the Space bar during startup. This brings up the Extensions manager. Select Mac OS 8.x base software only. This disables all extensions, except those from Apple, from loading. Now you can update the graphics accelerator extension by installing the software included with your card. For more information about installing the software, see “Installing Software” on page 12.

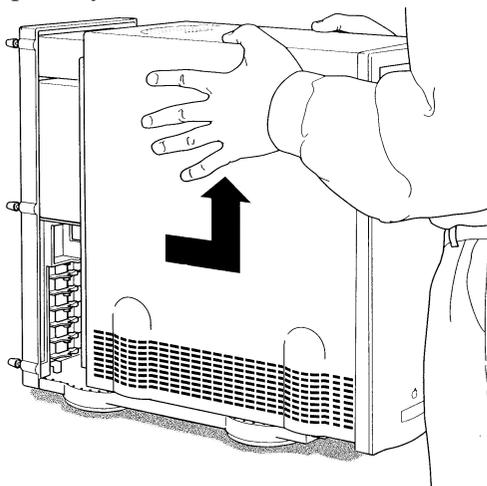
## Using XCLAIM VR 128's Connectors

XCLAIM VR 128 provides S-Video and Composite video input and output connectors:



## Installing your XCLAIM VR 128

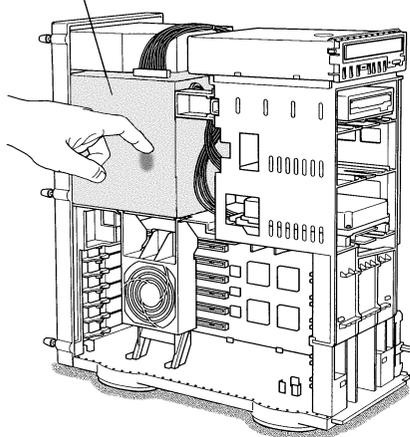
1. Turn off your computer, and disconnect the monitor cable.
2. Remove the computer cover. If necessary, consult your computer system manual for removal instructions.



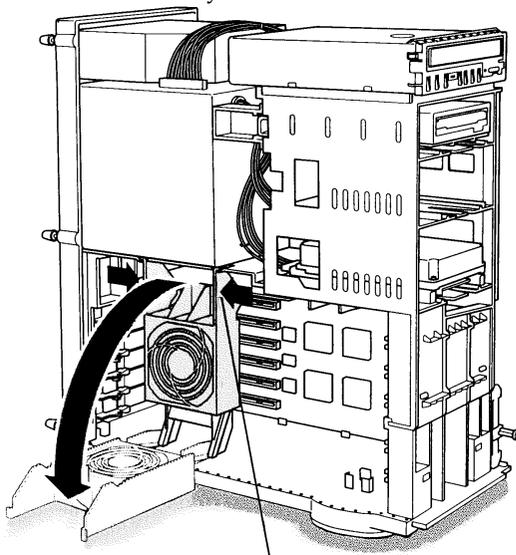
3. Choose the PCI expansion slot you wish to use.
4. Touch the metal part of the power supply case.

*Touching the grounded portion of the power supply case will discharge your body's static electricity.*

**Power Supply**



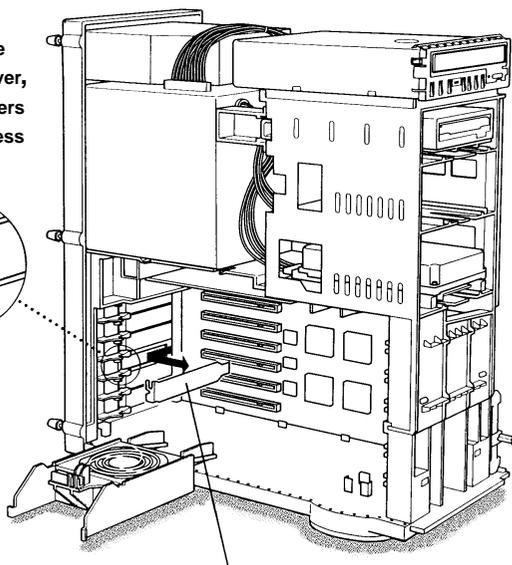
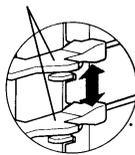
5. Lower the auxiliary fan.



To lower the fan, squeeze the sides to unlatch it.

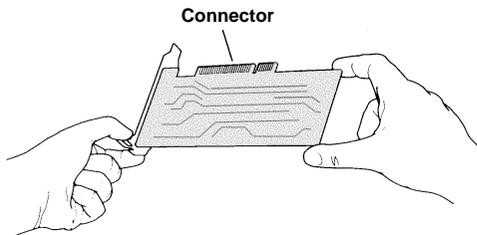
6. Remove the metal access cover from the expansion slot you want to use.

1. To release the access port cover, pull the two levers next to the access port apart.

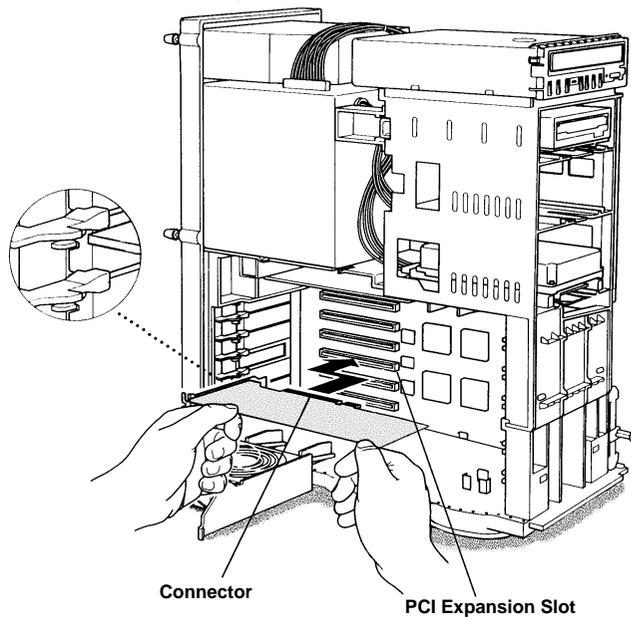


2. Slide the access port cover out and away from the access port.

- Align the connector on the card with the PCI expansion slot and press firmly until fully seated.



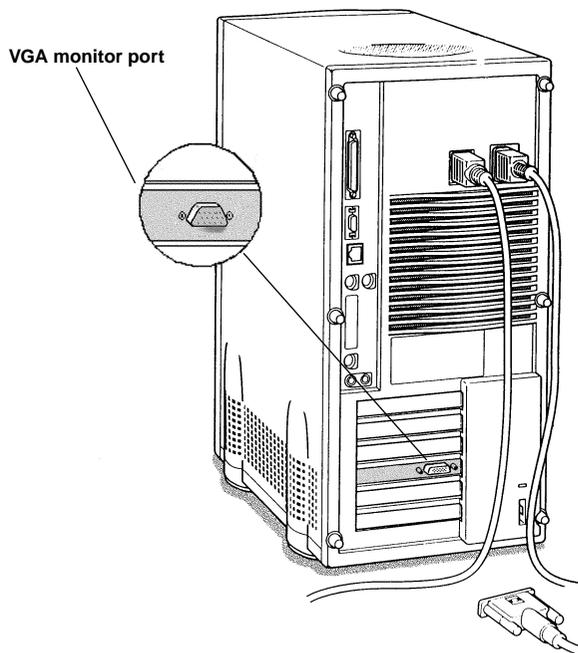
*Do not force the card. The card should fit snugly into the expansion slot.*



*If you plan to use multiple displays, you must install a card for each monitor. Repeat steps 6 and 7 for each display.*

- Replace the auxiliary fan.
- Replace the computer cover.

10. Connect the monitor cable to the card.



*If you have an Apple monitor, use the supplied Apple-to-VGA adapter to connect the Apple monitor to the VGA port. If you have a VGA monitor, connect it directly to the VGA monitor port.*

11. To connect a video input source to your card, see "Using XCLAIM VR 128's Video In Connectors" on page 36.

To output your computer's display to TV or VCR, see "Using XCLAIM VR 128's Video Out Connector" on page 33.

Otherwise, you are ready to install the software. See "Installing Your Software" on page 11.

## About Monitor Sensing

Apple's Monitor Sensing specification allows video display cards to identify the attached monitor. The XCLAIM VR 128 auto-configures itself according to the monitor sense code detected and enables all resolutions supported by the monitor. Since XCLAIM VR 128 relies on this sense code to correctly auto-configure during startup, the monitor must supply the appropriate sense code.

On VGA monitors, the XCLAIM VR 128 card uses the Display Data Channel (DDC) protocol, which is similar to Apple's Monitor Sensing specification, to determine the possible resolutions and frequencies. All possible resolutions are shown in the Monitors & Sound control panel and the Apple control strip.

When using older VGA monitors without DDC, you must choose the resolutions supported by your VGA monitor in the VGA Monitors section of the ATI Displays control panel. See "VGA Monitors" on page 18 for additional information.

If you are using a sense code display adapter (not the Apple-to-VGA adapter supplied by ATI) and the adapter supplies only the sense code information for one resolution, then only one resolution will be available, even if the monitor supports multiple resolutions. A resolution of 640 x 480 is usually the default resolution. Therefore, when using an adapter to supply the sense code, it must be designed to supply the proper code for the monitor you are using it with; otherwise, the XCLAIM VR 128 card cannot correctly auto-configure itself for the attached monitor.

Although the XCLAIM VR 128 card does not output Sync-on-Green (SOG) signals, adapters are available to overlay the Composite Synchronization Signal and send it through the Green video signal line so that you can use an SOG monitor. Monitors requiring an SOG signal usually have only three BNC connectors (RGB).

For more information about obtaining a sense code or synchronization signal adapter, contact ATI Customer Support or a computer retailer. For information about how to contact ATI Customer Support, select the ATI button on the ATI Displays control panel.



## Installing Your Software

### About ATI Software

XCLAIM VR 128 requires that several components be added to your Extensions and Control Panel folders. The XCLAIM VR 128 Installer does this for you and installs the following:



#### ATI Displays Control Panel

The ATI Displays control panel lets you configure your card and access software and hardware features. These features are described later in this chapter.



#### ATI Multimedia Extensions

ATI's Multimedia Extensions are placed in your system folder. They enable all of the multimedia features of your card, including 3D and 2D acceleration, QuickTime acceleration, video capture, and Mac2TV video out.



#### ATI Guide File

The ATI Guide file is the online help for the ATI Displays control panel. It is placed in the Extensions folder within the System folder. For more information about using the ATI Guide, see "ATI Guide" on page 32.

## Installing Software

- 1 Insert the ATI Installation CD.
- 2 Double-click on the ATI Universal  Installer icon.

*The ATI splash and legal notice screens appears.*

- 3 Follow the instructions that appear on the screen.

*Upon completion of the installation process, an installation log file containing a list of installed files and their location on your hard disk is created on your desktop allowing you to locate any file installed during the installation process.*



*The installer application checks your system to determine if you have the latest versions of the required software. If you do not have the appropriate Apple software, a dialog appears explaining what software needs to be installed.*

- 4 When you see a message that the installation was successful, click *Restart*.

*To complete the installation, you must restart your computer.*



*Your computer restarts.*

or

To perform further installations, click *Continue*.  
*The XCLAIM VR 128 Standard Install window appears.*

or

To return to Finder, click *Quit*.  
*You need to manually restart your computer to complete the installation of XCLAIM VR 128's software.*



## Multimedia Features

Your XCLAIM VR is five multimedia products in one. You can use your new graphics accelerator card to do the following:

- Appreciate true-color, high performance 2D and 3D graphics in resolutions up to 1600x1200.
- Watch full screen, full motion, TV-quality video using QuickTime playback acceleration
- Capture up to 320x240 at 30 frames per second using QuickTime capture
- Output movies to tape, or play games or present presentations on television with Mac2TV video out
- Experience the latest arcade style and virtual reality games the way they were meant to be played with state-of-the-art 3D graphics using QuickDraw 3D and OpenGL acceleration.

The following information describes these new multimedia features in more detail and suggests ways you can optimize your machine to get the most out of your new card.

## Viewing 3D Graphics

- XCLAIM VR 128's QuickDraw 3D Acceleration supports the following advanced 3D graphics capabilities:
- QuickDraw 3D RAVE Support
- OpenGL Support
- True color (32-bit rendering)
- Perspectively correct texture mapping functions
- Single pass Bilinear/Trilinear filtering
- 16-bit or 32-bit z-buffering (a process that removes hidden surfaces)
- 8-bit stencil buffer
- Flat and Gouraud shading
- Floating-point setup engine
- Mip-Mapping
- Alpha blending and fog effects
- Specular Highlights
- Shadows and Spotlights
- Texture lighting

These features make it possible to quickly render 3D graphics, produce atmospheric effects, calculate light and color shading, and determine which objects are in the foreground and which are in the background.

XCLAIM VR 128 only displays 3D graphics in thousands (16-bit) and millions of colors (32-bit). When you use 256 colors (8-bit), there are too few colors to display complex 3D textures, so 3D acceleration is not supported.

You can use the 3D Memory Monitor to see how memory on your XCLAIM VR 128 is allocated when displaying 3D graphics.

## ATI Displays Control Panel

The ATI Displays control panel provides access to the various multimedia features that XCLAIM VR 128 has to offer. To open the ATI Displays control panel, select Control Panel from the Apple menu, then select ATI Displays. You can also use the ATI Config Menu in the menu bar to open ATI Displays.

For detailed instructions on how to set up and use these features, please refer to the ATI Guide, which can be accessed through the ATI Displays control panel.



### Status Area

Look in the Status Area to determine your current monitor, screen resolution, and color depth. To change these settings, use the Monitors feature to open the Monitors & Sound control panel. You can also change the monitor depth and resolution at any time using the Apple control strip, if installed.



## Identify Displays

If you have more than one display connected to your system, you can identify and configure each display. The ATI Displays control panel will identify all the displays connected to your system, but will only configure displays that are connected to ATI cards.

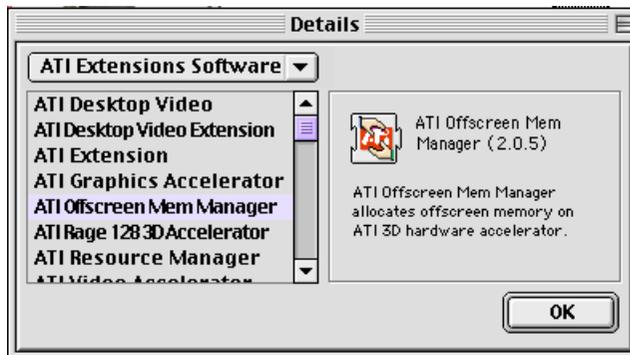


If you are using multiple monitors and using one display with the built-in video, or a non-ATI video card, a generic video card icon is displayed in the ATI Displays control panel. However, you cannot make any changes to the generic video card using ATI Displays.



## Display Details

The Details window gives you information about specific software components needed to enable each of XCLAIM VR 128's features. Check the Details window to determine the files and version numbers of the software components installed in your system folder during the installation process. Using the pull-down menu, the Details window also lists the Mac OS multimedia software required for XCLAIM VR 128, such as QuickTime and QuickDraw 3D.





## Monitors

The Monitors feature provides access to the standard Mac OS Monitors & Sound control panel. You can use this panel to select color depths and resolutions, and set up multiple monitors. For more information on the Monitors & Sound control panel refer to the Mac OS Guide that comes with your computer.



## Keyboard Shortcuts

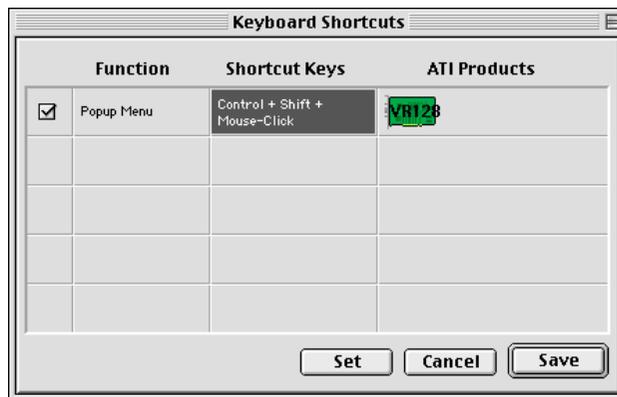
This feature allows you to use a pop-up menu to change your desktop settings without exiting your current application. You can configure, enable or disable shortcut features when you click the Shortcut icon in the control panel.

The ATI Popup Menu only displays the valid and safe modes available for the attached monitor(s). Additional modes may be accessed through the Monitors & Sound control panel or the Control Strip.



*Different ATI cards offer distinct keyboard shortcut options, so not all shortcuts appear on every ATI card.*

Popup Menu and Hot Keys remain inactive when dialogs appear on the screen. For example, while using the Monitors & Sound control panel, the Popup Menu and Hot Keys are disabled.





## VGA Monitors

If you have a non-DDC compliant VGA monitor connected to your XCLAIM VR 128 card, the VGA icon may be active. Some VGA monitors use a Display Data Channel (DDC) allowing XCLAIM VR 128 to automatically determine the resolutions the monitor supports. The DDC technology works like the Apple Sense Code protocol, which means you do not have to do anything extra to select the supported resolutions. Your XCLAIM VR 128 card uses the DDC information to automatically provide the supported resolutions in the Monitors & Sound control panel and the Control Strip. If your VGA monitor doesn't use DDC, the VGA Monitors icon is active and you must use it to select your monitor from a list of standard monitors.



*If the VGA icon is dimmed, your computer has detected an Apple-type monitor, or a DDC compliant VGA monitor connected to your XCLAIM VR 128 card. You do not have to make a selection.*

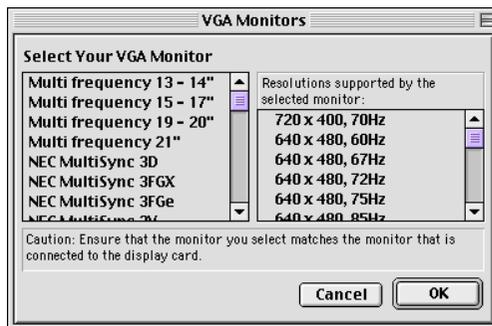
### To Select a VGA Monitor

- 1 Select VGA Monitors from the ATI Displays control panel.
- 2 Select your VGA model from the list of monitors in the left panel of the VGA Monitors dialog box.

A list of resolutions supported by your VGA monitor appears in the right panel of the VGA Monitors dialog box.



*You cannot select the monitor resolution using the VGA Monitors dialog box. You must use the standard Mac OS Monitors & Sounds control panel.*





### 3D Memory Monitor

XCLAIM VR 128 supports advanced 3D features including **mip-mapping**, **Gouraud shading**, **fog effects**, and **texture mapping**. The 3D Memory Monitor shows how available memory in the accelerator card is allocated when displaying 3D graphics.

### Using the 3D Memory Monitor

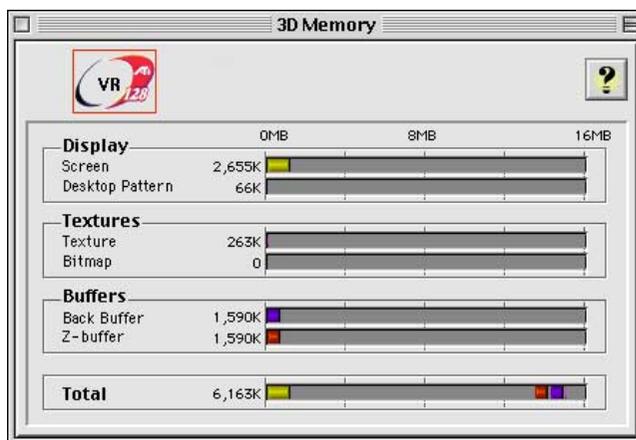
When you open 3D graphics on your Mac OS computer, run the 3D Memory Monitor to see how your XCLAIM VR 128 has allocated 3D memory.

#### To open the 3D Memory Monitor

- 1 Choose Control Panels from the Apple Menu, or ATI Config Menu and skip to step 3.
- 2 Select ATI Displays.
- 3 Click on the 3D Memory icon.

*When you open a 3D application window, you can see how the additional memory required for 3D graphics is allocated.*

The 3D Memory Monitor shows you how the memory on your XCLAIM VR 128 has been allocated between display, textures, and buffers. If you use all the available memory on the XCLAIM VR 128 card, your Mac OS computer drops 3D textures and substitutes Gouraud shading.



## Display

- ❑ Screen indicates the amount of graphics memory allocated to the display's resolution and color depth.
- ❑ Desktop Pattern indicates the amount of memory used by your desktop pattern.

To reduce the memory allocated to Display memory:

- change the color depth from millions to thousands
- decrease your screen resolution

## Textures

- ❑ **Texture** indicates the number and size of texture maps loaded by 3D applications to add realism to 3D models and environments.
- ❑ **Bitmap** indicates the memory allocated to non-3D elements like 2D graphics. To reduce the memory allocated to Texture memory, reduce the amount of textures in your 3D graphic.

## Buffers

- ❑ **Back Buffer** and **z-buffer** are directly related to the size of the 3D window.

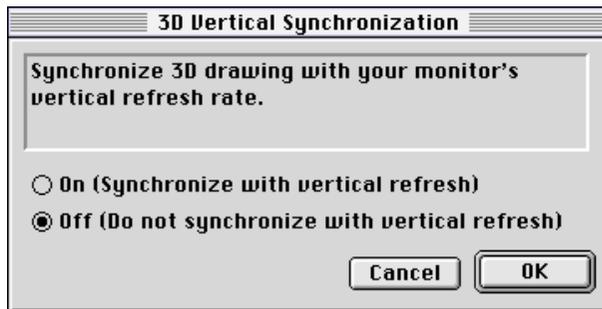
To reduce the memory allocated to Buffer memory:

- reduce the size of the display window containing 3D graphics
- reduce the number of the display windows containing 3D graphics



### 3D Sync

Your XCLAIM VR 128 graphics accelerator provides superior 3D performance by performing many tasks in **offscreen memory** including graphic rendering. Depending on the 3D scene, the refresh rate of your computer monitor, and the game or application, you may notice some slight horizontal flickering or “tearing”. This flicker is caused by the different rates at which the display performs a complete screen redraw, and when the XCLAIM VR 128 moves images located in offscreen memory to display buffer. Synchronizing the redraw and the write to the display buffer provides a flicker-free 3D window.



- **On (Synchronize with vertical refresh)** - Provides a flicker-free 3D window. The display is synchronized with the vertical refresh, so there isn't any flickering or “tearing” in the 3D window.
- **Off (Do not synchronize with vertical refresh)** - Provides a boost in performance, but in some games and applications it can introduce flickering or “tearing” in the 3D window.

You should experiment with these settings to find the proper setting for your application.



## Mac2TV Video Out

XCLAIM VR 128 can be attached to a television or VCR. You can export QuickTime movies to video tape or view your computer's display on a television. Mac2TV is ideal for playing games, giving presentations, watching movies, and browsing the Internet.

- View computer output directly on your television in either NTSC or PAL formats with advanced flicker reduction and artifact suppression
- Connect using Composite or S-Video output capabilities
- Mac2TV provides a big-screen experience for playing games, giving presentations, and browsing the Internet.

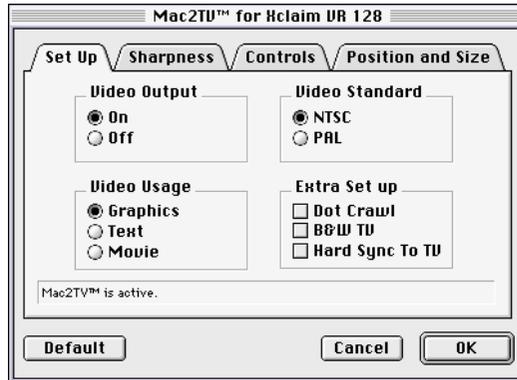
## Enabling Mac2TV



### WARNING

- When you initially turn on Mac2TV Video Out, your monitor display will be dimmed. Monitors which do not support the 60 Hz vertical refresh rate required by video equipment may be damaged when Mac2TV is enabled. Dimming your monitor is a safety feature, protecting your monitor from any potential damage.
1. Open the ATI Displays control panel.
  2. Click on the Mac2TV icon.

- In the Set Up Tab, click Video Output On.  
*The other items in this tab are explained in "Optimizing Mac2TV" on page 25*



*A message appears to warn you that your monitor will be dimmed.*



- Click OK.  
*A message appears on your TV stating that your display has been successfully switched to TV.*



- Click OK.  
*If you do not click OK to the message on the TV, your display will return to your monitor after a few seconds.*

## Changing Display Configurations

### Starting your computer with Mac2TV enabled

If you have Mac2TV display enabled, a message appears when you startup your computer warning you that Mac2TV is about to be enabled and your monitor will be dimmed.



Click OK to enable Mac2TV display and dim your monitor. Otherwise, click Cancel to continue using your monitor as your display.

### Using a TV as your only display

If you are using television display only, disconnect your monitor from your XCLAIM VR 128 card. At startup, XCLAIM VR 128 detects that you have a TV attached and automatically starts with Mac2TV display enabled.

## Optimizing Mac2TV

You can optimize your TV display using the Mac2TV window. There are four tabs in the Mac2TV window. Each tab is explained in detail in later sections of this chapter.

The *Set Up* tab contains the settings for turning on the video output, the video format for the output signal, optimized preset settings for the video output, and settings for lesser used video output options. See “Changing the Set Up tab” on page 26 for details on this tab.

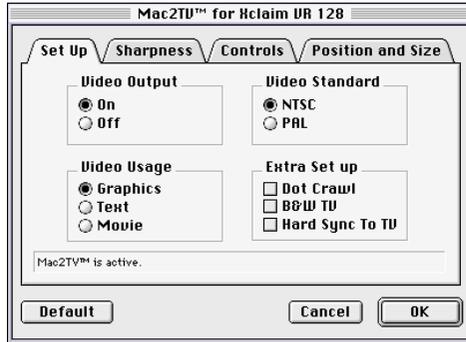
The *Sharpness* tab contains two sections. Only one section of the tab is active at a time. If you are using S-video as the output source, then the S-Video section is active. If you are using composite video, the composite video section is active. See “Changing the Sharpness Preferences” on page 28 for details on this tab.

The *Controls* tab contains the controls for changing the contrast, brightness, saturation, hue, flicker, and color blending. See “Changing the Controls Preferences” on page 28 for details on this tab.

The *Position and Size* tab contains lets you change the position and size of the image on the output device.

## Changing the Set Up tab

The Set Up tab contains four sections; Video Output, Video Standard, Video Usage, and Extra Setup.



- ❑ Video Output  
Enables the output video signal.
- ❑ Video Standard  
Sets the video standard for the output video signal.
  - NTSC - the standard used in most of North America. If you are unsure of the video format, chances are this is the standard you want to use. This is the default setting for the video output.
  - PAL - the standard used in most of Europe and the rest of the world outside of North America.



*There is no control for the video input signal, it must be NTSC.*

- ❑ Video Usage  
These three options are optimized settings for the video output.
  - Graphics - If your video output is primarily graphics, such as a video game, use this setting.
  - Movie - If your primary output is a video of any type including a QuickTime video, use this setting.
  - Text - If your output source is primarily text, use this setting.

#### ❑ Extra Set Up

There are three very different settings in this area of the Set Up tab. Typically, these settings are not used, however, certain equipment may require the use of these settings.

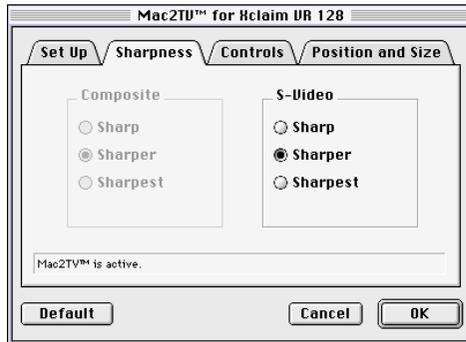
- **Dot Crawl** - **Dot Crawl** is an undesirable characteristic of many Composite televisions that is seen as thin, jagged edges moving around objects on the screen. Selecting Dot Crawl eliminates the dot crawl and is especially useful for viewing pictures or stills. S-video equipment does not exhibit this effect.
- **B&W TV** - If you are using a black and white television, or monitor, this setting can be used to enhance the image on these types of output devices.
- **Hard Sync To TV** - Under most circumstances, this setting should not be enabled. When using professional studio-grade video equipment as your output device, enabling this option provides compensation between TV and CRT synchronization.



*There is no visual difference between a video signal with Hard Sync to TV enabled and a video signal without this option enabled.*

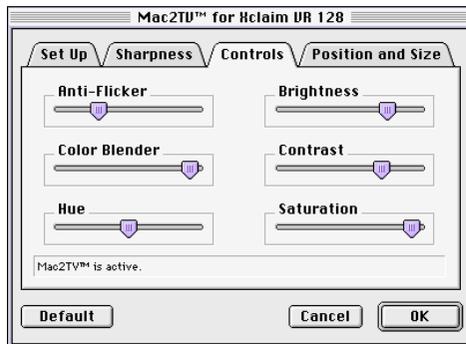
## Changing the Sharpness Preferences

The Sharpness tab contains three sharpness options. Depending on the output connection, the Composite or the S-Video section of this tab is active. Both sections are active if you have both a composite and S-Video connection.



## Changing the Controls Preferences

There are six different adjustments that can be made using the sliders in the Controls tab. All of these adjustments are related to the color or quality of the output video signal.



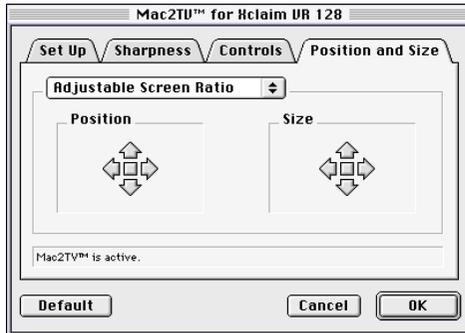
Saturation, hue, and brightness are the three qualities which constitute what we normally refer to as "color".

- ❑ *Saturation* - Saturation is the amount of color present that distinguishes pale or washed-out colors from vivid ones.

- ❑ *Hue* - Hue, often used as a synonym for “color”, is the quality that distinguishes among red, green, yellow, and so on. Hue is generally not adjusted. However, depending on the TV, it may be necessary or desirable to adjust the hue to approximate the monitor’s display.
- ❑ *Brightness* - Brightness is related to the amount of light emitted by your display or reflected from an object. This quality enables you to describe an object as “bright” or “dim”.
- ❑ *Anti-Flicker* - Anti-Flicker reduces the amount of display flicker. Display flicker is both a distraction and tiring to your eyes, and is most pronounced when text is being displayed.
- ❑ *Contrast* - Contrast is a ratio of how far the whitest whites are from the blackest blacks. If the contrast is too high, the image may look stark, like pure white squares on a jet-black background. If the contrast is too low, the image may look gray or washed out.
- ❑ *Color Blender* - Color Blender adjusts the color vertical sharpness vs. the chroma/color flicker. When the color blender has a smaller value (the slider control is more towards the left), there is an increase in both the color sharpness and color flicker. As you slide the color blender to the right increasing the color blender value, the vertical color is “blended” more to reduce the amount of color flicker. It may be hard to see a difference in picture quality using this adjustment since the human eye is more sensitive to the change in brightness than the change in color.

## Changing the Position and Size

The Position and Size tab contains the controls for resizing and changing the position of the output video signal.



Clicking the arrows in the position area changes the output video signal accordingly. Clicking the arrows in the size area increases or decreases the size of the output video signal.

There are four selections in the pull-down menu; Adjustable Screen Ratio, Monitor Resolution Ratio, 4:3 Screen Ratio, and 16:9 Screen Ratio.

- Adjustable Screen Ratio is the default setting and allows you to adjust the output video signal freely.
- Monitor Resolution Ratio mirrors the ratio of your current monitor. For example, if a portrait display is your main display, the output video signal will be a very narrow, but tall signal.
- 4:3 Screen Ratio is the standard TV ratio. Selecting this option allows you to quickly fill the TV screen without spending a lot of time resizing.
- 16:9 Screen Ratio is the standard wide screen TV ratio. Like the 4:3 Screen Ratio, it allows you to quickly fill a wide screen TV without spending a lot of time resizing.

### **Reducing Edge Distortion**

When using a television for your display, you may see some edge distortion on the left and right side of your television screen. This effect depends on your television and the application you are running.

To reduce edge distortion, you can:

- increase the horizontal size by clicking the right Size arrow, or
- reduce the brightness by adjusting the brightness slider.

### **Viewing Text on Television**

Due to the different technology used in the manufacturing of televisions and monitors, standard text may look too small on your television. You can compensate for this by using larger fonts.

#### **To change your font size**

1. Click the Apple menu.
2. Choose Control Panels.
3. Select Views (on Mac OS 8.1 and 8.0), *or* Select Appearance (on Mac OS 8.5 and greater).
4. Views control panel - Choose a larger font size.

Appearance control panel -

A) Click the Fonts tab

B) Choose the Font and Size desired



## ATI Guide

The ATI Guide is an additional source of information when you are using the ATI Displays control panel. It behaves similarly to the Mac OS Guide that comes with your computer.

Access the ATI Guide by clicking on the Apple Guide  icon on the ATI Displays control panel, or the ATI Config Menu. The ATI Guide stays in front of other windows on the screen so the instructions are always visible. To move the ATI Guide window to another location, drag it by the title bar.

Select a topic from the main ATI Guide window to get detailed instructions for a specific task. To return to the main ATI Guide window, click the Topics icon in the lower-left corner of the Guide window. When you're finished using ATI Guide, click the close box.



## Customer Support

You can obtain Customer Support information by clicking the ATI icon in the ATI Displays control panel. You can also generate a problem report.



Please refer to the ATI Guide for additional instructions on generating a problem report.

Before calling about a suspected problem, please complete the problem report, and have the report file either on-screen or printed out for reference during your call. Important information about your computer is automatically included when you generate the report.

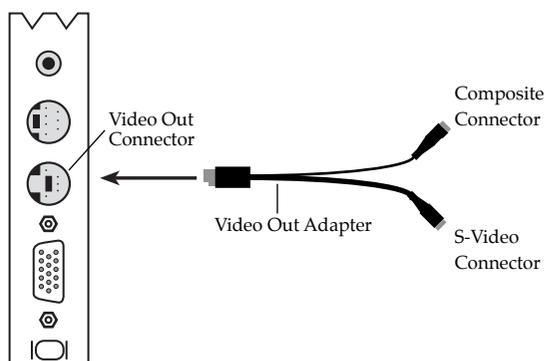
## Video Connections

### Using XCLAIM VR 128's Video Out Connector

Your XCLAIM VR 128 includes Mac2TV Video Out. You can use this feature to connect your XCLAIM VR 128 to a TV or VCR.

#### To output your computer's display to a TV

1. Turn off your computer and TV.
2. Ensure your XCLAIM VR 128 card is installed correctly.
3. Looking at the back of your Mac, locate your XCLAIM VR 128 card.
4. Connect the video out adapter to the Video Out of your XCLAIM VR 128 card. (See diagram below.)



5. Determine if your TV has an S-Video or Composite video input connection.

6. Attach one end of an S-Video or Composite cable to the video out adapter and the other to the video in connector of your TV.



*Although the video out adapter has two connectors for S-Video and Composite cables, you only need to connect one to your TV, either Composite **or** S-Video. If your TV has both input connections, S-Video will produce best results.*

*You can connect two TVs to your XCLAIM VR 128 card using both output connectors on the video out adapter. One TV must support the Composite format and the other must support the S-Video format. Both TV's will display the same image simultaneously.*

7. Turn on your Mac and your TV.

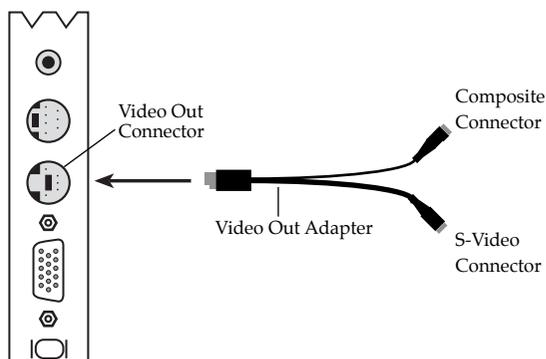


*Now that you have connected your XCLAIM VR 128 card to a TV, you need to enable Mac2TV. For more information, see "Enabling Mac2TV" on page 22.*

### **To connect your computer's display to a VCR to record to video tape**

1. Turn off your computer and VCR.
2. Ensure your XCLAIM VR 128 card is installed correctly.
3. Looking at the back of your Mac, locate your XCLAIM VR 128 card.

4. Connect the video out adapter to the Video Out of your XCLAIM VR 128 card. (See diagram below.)



5. Determine if your VCR has an S-Video or Composite video input connection.
6. Attach one end of an S-Video or Composite cable to the video out adapter and the other to the video in connector of your VCR.



*Although the video out adapter has two connectors for S-Video and Composite cables, you only need to connect one to your VCR, either Composite **or** S-Video. If your VCR has both input connections, S-Video will produce best results.*

*You can connect a TV and a VCR to your XCLAIM VR 128 card using both output connectors on the video out adapter. One must support the Composite format and the other must support the S-Video format.*

7. Turn on your Mac, VCR, and TV.



*If you are connecting your XCLAIM VR 128 card to a VCR, make sure that your VCR is connected to a television that you can use as your computer's display. For information about connecting a television to your VCR, see the documentation supplied with your VCR.*

*Now that you have connected your XCLAIM VR 128 card to a VCR, you need to enable Mac2TV. For more information, see "Enabling Mac2TV" on page 22.*

## Using XCLAIM VR 128's Video In Connectors

You can connect a VCR or camcorder to one of your XCLAIM VR 128's video in connectors. Use this feature to capture video to your Mac from an outside video source.

### To input a video signal from a VCR to your computer



*This procedure describes how to connect a VCR to your XCLAIM VR 128. You can use this procedure to connect other video sources, such as a camcorder, to the video in of your XCLAIM VR 128.*

1. Turn off your computer and VCR.
2. Ensure that XCLAIM VR 128 is installed correctly.
3. Determine if your VCR has an S-Video or Composite video output connection.
4. Looking at the back of your computer, locate your XCLAIM VR 128 card.
5. Using an S-Video or Composite cable, attach one end of the cable to the video in of your XCLAIM VR 128 card and the other to the video out of your VCR.
6. Turn on your computer and your VCR.

## Using QuickTime Playback

XCLAIM VR 128's QuickTime playback acceleration allows you to stretch even the smallest movies to full screen size without compromising frame rate or image quality. XCLAIM VR 128's hardware scaler maintains the original quality of your QuickTime movie when scaling to a larger size—even full screen.

When scaling video, XCLAIM VR 128 uses special hardware techniques (alpha blending and chroma interpolation) to enhance the video quality instead of just repeating pixels.



*To use XCLAIM VR 128's playback acceleration, you must have QuickTime version 3.0 or greater installed on your machine.*

### Optimizing Video Playback

When you scale a movie, your system switches from QuickTime's software scaler to XCLAIM VR 128's hardware scaler to produce better results. However, QuickTime will not switch to hardware scaling in the following situations:

- playing video in double size  
*Try manually scaling the video slightly off exactly double the size.*
- pausing the video
- using single frame advance
- watching the video in reverse
- playing a video that has not been saved in a compressed format not supported by hardware acceleration.



*Some multimedia titles on CD-ROM incorporate QuickTime clips that do not allow movies to be stretched during playback. These QuickTime clips cannot be accelerated while viewing the multimedia title.*

## Using QuickTime Video Capture

Using XCLAIM VR 128's QuickTime capture, you can capture up to 320 x 240 at up to 30 frames per second! You can capture still images or QuickTime movies from video tape, camcorder, TV or laserdisc. To capture video, you can use the Xclaim Video Player or any application that supports QuickTime capture.

### Using XCLAIM VR 128's Video Capture with Third Party Applications

XCLAIM VR 128's video input can be used with any third party application that supports QuickTime capture through video digitizer components. To determine if the application supports QuickTime capture, see the application's documentation.

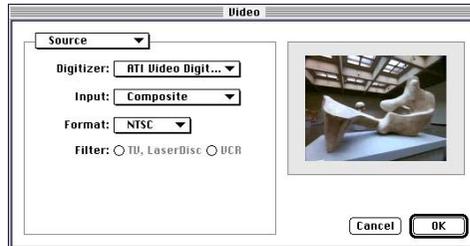
#### To capture video using third party applications



*Not all applications work exactly as described in this procedure. See your application documentation for specific instructions.*

1. Ensure that the video source (VCR or camcorder) is properly connected to XCLAIM VR 128. (For more information, see "Using XCLAIM VR 128's Video In Connectors" on page 36).
2. Launch the application and select the video capture feature.
3. Select the **Video Settings**.
4. Select **Source** from the main popup menu which normally is set to **Compression**.
5. Ensure that the **Digitizer** is set to **ATI Video Digitizer**.

6. Ensure that the **Input** matches the type of video source (Composite or S-Video) you have connected to XCLAIM VR 128.



### Optimizing Video Capture

The quality of your capture depends on the quality of the video source and the type of system you are using to capture. Follow these suggestions to ensure that you are getting the best capture possible:

- turn off virtual memory
- disable your network and file sharing capabilities (i.e. AppleTalk)
- add additional RAM (32MB recommended) to your computer
- capture at 16 bit color depth (this gives better capture rates than 8 or 32 bit color depth)
- defragment your hard drive
- turn off the menu bar clock
- reduce the size of the capture window (You will be able to scale it to full screen later with XCLAIM VR 128's playback acceleration.)

You need a high-speed hard drive with lots of available hard disk space. An ideal drive would be an AV drive (6MB per second) or a Fast drive (4MB per second) using a SCSI-2 controller. Your drive needs to write at least 5MB per second to capture video at 320x240 at 30 frames per second. Check the specifications of your hard drive in your system manual.

Make sure that you have the available hard disk space you need to capture your video. If you capture 15 seconds of video at 30 frames per second with a window size of 320 x 240, you need about 60 MB of hard disk space. After you have captured your video, you can use post-compression to decrease its size. A typical 60 MB video capture will compress to about 10 MB using the Cinepak post-compression format.



# Troubleshooting Tips

## Before Contacting Customer Support

If you have a general question, or encounter problems with your card, please review this information completely before contacting Customer Support.

You can create a problem report from the ATI Displays control panel. Please refer to the ATI Guide for instructions on generating this problem report, and for general troubleshooting tips not covered in this section.

Before calling about a suspected problem, please complete the problem report, and have the report file either on-screen or printed out for reference during your call. Important information about your system is automatically included when you generate the report.

## Solutions to Common Problems

### Why can't I get a resolution higher than 640x480?



If the monitor is connected to the VGA monitor port on your XCLAIM VR 128 card...

- go to the ATI Displays control panel, click “VGA Monitors”, and select a monitor type which matches the specifications of your monitor. This allows more resolutions to be available for selection in the standard Mac OS Monitors & Sounds control panel.

**I have a monitor with three BNC connectors. Why won't it work with my XCLAIM VR 128 card?**

- Monitors that only have three BNC connectors require a synchronization (“sync”) signal to be sent down the green line. This is called Sync-on-Green (SOG). ATI accelerator cards do not output an SOG signal. Adapters are available for your Mac OS computer to convert the separate sync signal from the ATI card to an SOG signal for the monitor. Check with an Apple retailer for availability of SOG adapters.

**I have a monitor with five BNC connectors. Why won't it work with my XCLAIM VR 128 card?**

- For a cable with five BNC connectors, ensure that all the cables are all connected to the monitor. If only the red, green, and blue cables are connected, the monitor is expecting a Sync-on-Green (SOG) signal.
- Some monitors may have a switch to set the monitor to either SOG or separate sync. If the switch is set to SOG, the monitor will show a scrambled display. Setting the switch to separate/composite sync may resolve the problem.
- A number of BNC cables, even though they are designed for Mac OS computers, do not supply the sense code needed by the graphics card. Using an adapter which sets the appropriate sense code should solve the problem.

**After selecting a VGA monitor type in the VGA Monitors dialog, I couldn't change the resolution in the Resolutions Supported scroll list.**

- This scroll list in the ATI Displays control panel only shows the available resolutions for the monitor type selected, and will not allow you to select and change resolutions. Changing resolutions can only be done through the standard Monitors & Sound control panel, or by using the Popup Menu supplied with the XCLAIM VR 128 card.

**Does the XCLAIM VR 128 work in all Power Macintosh computers?**

- No, the XCLAIM VR 128 only works with PCI-based Power Macintosh computers. The minimum requirements are listed in “What You'll Need” on page 2.

**After installing XCLAIM VR 128, I noticed some sound distortion. Why?**

- Disabling Virtual Memory in the Memory Control Panel may resolve this problem. Certain Mac OS computers may experience sound corruption while using QuickDraw™ 3D accelerated applications even with Virtual Memory turned off.
- Installing the ATI Sound Catalyst extension corrects sound corruption in certain Macintosh computers. Additional information on the Sound Catalyst extension is available in the Read Me document in the Sound Catalyst folder.
- If you still have sound related problems, check with the manufacturer of your Mac OS computer for any sound related software updates they may have available.

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# B Specifications

## Video Mode Tables

The video mode tables on the next couple of pages the supported resolutions for both 2D and 3D modes on your XCLAIM VR 128 card.

Please consult your monitor's specifications to determine which resolutions are available with your display.

### Mac OS 2D Resolutions

Display Resolution	Vertical Refresh Hz	Horizontal Refresh kHz	Fixed Mac OS Monitor Size
512 x 384	60	24.48	12-in.
640 x 480	67	35.00	13-in. / 14-in.
832 x 624	75	49.72	16-in. / 17-in.
1024 x 768	75	60.24	19-in. / 20-in.
1152 x 870	75	68.68	21-in.

## Supported VESA/VGA 2D Modes

Display Resolution	Vertical Refresh Hz	Horizontal Refresh kHz
512 x 384	70	31.48
640 x 480	60	31.47
	72	37.50
	75	37.50
	85	43.27
	90	47.97
	100	52.95
	120	63.66
640 x 870	75	68.85
800 x 600	56	35.16
	60	37.88
	72	48.08
	75	46.87
	85	53.67
	90	56.64
	100	63.92
	120	76.13
1024 x 768	60	48.36
	70	56.48
	85	68.68
	90	72.67
	100	80.41
	120	96.73
1280 x 960	75	75.00
1280 x 1024	60	63.98
	75	79.98
	85	91.15
1600 x 1024	76	81.32
1600 x 1200	60	75.00
	65	81.25
	70	87.50
	75	93.75
	85	106.25

### 3D Mode Table

The 3D mode table measures the number of full screen 3D windows that are possible to display at a given resolution. For example, a value of 2.75 means that there is enough memory left over in the current mode to run 2 full screen 3D windows and another at 3/4 the size of full screen. A value of 0.40 means that largest 3D window will be just less than 1/2 the size of full screen.

In the following table, 3D windows are considered to use a back buffer and z-buffer.



*3D acceleration is not supported when your color depth is 256 colors. In this color depth, there are too few colors to display complex 3D textures.*

Resolution	Colors	Full screen 3D windows possible	
		16 MB 16-bit z-buffer	16 MB 32-bit z-buffer
512 x 384	Thousands	20.50	13.75
	Millions	13.25	10.00
640 x 480	Thousands	13.00	8.50
	Millions	8.25	6.25
800 x 600	Thousands	8.00	5.25
	Millions	5.00	3.75
832 x 624	Thousands	7.50	5.00
	Millions	4.50	3.50
1024 x 768	Thousands	4.75	3.00
	Millions	2.75	2.00
1152 x 870	Thousands	3.50	2.25
	Millions	2.00	1.50
1280 x 1024	Thousands	2.50	1.75
	Millions	1.25	1.00
1600 x 1200	Thousands	1.50	1.00
	Millions	0.75	0.50

# Specifications

## System Requirements

- Power Macintosh or Mac OS compatible computer with a PCI slot.

## Operating System

- Macintosh System software (version 8.0 or higher)
- QuickTime 3.0 or later (including QuickTime 4.0)
- QuickDraw 3D (version 1.5.4 or higher)



ATI Multimedia components are Mac OS 8 and Mac OS 8.6 compatible.

## Graphics Controller

- ATI 3D RAGE 128 — 128-bit graphics and multimedia accelerator chip.

## Video Display Buffer

- 16MB memory.
- 128-bit memory interface.

## Bus

- 32-bit PCI local bus compliant with PCI version 2.1 specification.

## Sync Signals

- Separate horizontal and vertical sync at TTL levels.
- Composite sync at TTL levels.

## Video Memory Address

- Supports PCI Multimedia Standard.
- Supports 16MB relocatable memory aperture.

## Display Connector

- VGA Connector - Standard VGA  
*Monitors with Apple connectors are supported using the Apple-to-VGA video adapter (included).*

## Other Connectors

- S-Video In connector
- Composite In connector
- Video out adapter for S-Video and composite video out

## Video Interrupt

- PCI interrupt request enabled; interrupt is auto configured by system.

## Power

- +5V  $\pm 5\%$ , @ 1.3A typical

## Environment

- Ambient Temperature: 50° to 122° F (10° to 50° C) operation. 32° to 162° F (0° to 70° C) storage.
- Relative Humidity: 5% to 90% non-condensing operation. 0% to 95% storage.

## MTBF

- 120,000 hours.

## EMC Certification

- FCC Class B

## Safety

- PCB made from UL-listed flame retardant material.

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# Compliance Information

## FCC Compliance Information

This device is in conformity with part 15 of the FCC Rules. Operation of this product is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) 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 technician for help.

- The use of shielded cables for connection of the monitor to the graphics card is required to ensure 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.

### Industry Canada Compliance Statement

ICES-003 This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe B Respecte toutes les exigences du Règlement sur le matériel brouiller du Canada.

### CE Compliance Information

EMC Directive 89/336/EEC and Amendment 92/31/EEC, Class B Digital Device

EN 50081-1, Generic Emissions Standard for Residential, Commercial and Light Industrial Products

(EN 55022/CISPR 22, Limits and Methods of Measurement of Radio Interference Characteristics Information Technology Equipment) *Warning: This is a Class B product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.*

EN 50082-1, Generic Immunity Standard for Residential, Commercial and Light Industrial Products

(IEC 801-2, IEC 801-3, IEC 801-4)

Directive EMC 89/336/CEE et amendement 92/31/CEE,  
dispositif numérique de Classe B

EN 50081-1, Norme sur les émissions génériques pour les  
produits domestiques, commerciaux et industriels légers

(EN 55022/CISPR 22, Limites et méthodes de mesure des  
caractéristiques d'interférences radiophoniques, Matériel  
des technologies de l'information) *Mise en garde: ceci est un  
produit de Classe B. Il risque produire des interférences  
radiophoniques dans un environnement domestique auquel cas  
l'utilisateur peut se voir demandé de prendre des mesures  
adéquates.*

EN 50082-1, Norme sur l'immunité générique pour  
produits domestiques, commerciaux et industriels légers.

(CEI 801-2, CEI 801-3, CEI 801-4)

EMC Richtlinie 89/336/EEC und Änderung 92/31/EEC,  
Digitales Gerät der Klasse B

EN 50081-1, Allgemeiner Emissions-Standard für  
Haushalt- und kommerzielle Produkte sowie Erzeugnisse  
der Leichtindustrie

(EN 55022/CISPR 22, Beschränkungen und Verfahren der  
Messung von informationstechnischen Ausrüstungen mit  
Funkstörmerkmalen)

Warnung: Dies ist ein Erzeugnis der Klasse B. Dieses  
Erzeugnis kann Funkstörungen im Wohnbereich  
verursachen; in diesem Fall können entsprechende  
Maßnahmen seitens des Benutzers erforderlich sein.

EN 50082-1. Allgemeiner Unempfindlichkeits-Standard  
für Haushalt- und kommerzielle Produkte sowie  
Erzeugnisse der Leichtindustrie

(IEC 801-2, IEC 801-3, IEC 801-4)

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## Glossary

**Alpha blending** When an image has an alpha value for each pixel, this tells how much to blend the colors from the image with the background colors. The lower the alpha values the more transparent the image looks.

**Anti-aliasing** Method used to remove the jaggedness of an image. When anti-aliasing is used, the edges of an image appear smooth and usually somewhat blurry.

**Back buffer** A type of **offscreen memory** used to provide smooth video and 2D graphics acceleration. This technique uses two frame buffers, often referred to as "double-buffering". While one buffer is being displayed, a second buffer of the same size, the "back" buffer, holds the frame being worked on.

Once a new frame is ready in the back buffer it is copied to the front buffer - the display screen. In this way, you will only see complete, smooth frames, and not the operations performed on them.

In order to increase performance, all memory used for back buffers are on your ATI graphic accelerator card.

**Bilinear Filtering** When texture mapping is performed an image can become very "blocky" or "pixelated" when the texture is viewed close up. Bilinear filtering samples four texture pixels, takes the weighted average of these pixels and applies the average of these "texels". This blended color is used to provide a smoother looking texture.

**Bitmap** A bitmap is a graphics or character representation composed of individual pixels, arranged horizontally in rows. A monochrome bitmap uses one bit per pixel (bpp). Color bitmaps may use up to 32-bpp, depending on the number of colors desired.

<b>Buffers</b>	Your ATI accelerator card includes on-board memory which is used in a number of ways. Buffers are portions of this memory used as temporary storage on your card. One large buffer is always used to display the screen you see; this is the “display buffer”. The rest of <b>offscreen</b> memory is used by applications as <b>back buffers</b> , <b>z-buffers</b> , and texture buffers.
<b>Color Depth</b>	Color depth is the number of color shades available on your display. The color depth of your monitor usually includes; 256 colors (8-bpp), Thousands of colors (16-bpp), and Millions of colors (32-bpp), and is also measured in bits per pixel (bpp). You can switch your color depth using the ATI Popup Menu, Apple’s Control Strip, or the Monitors & Sound control panel. Higher bit-depths require more display buffer memory.  <b>Note:</b> The ATI 3D Accelerator only functions in Thousands and Millions of colors modes.
<b>Fog</b>	The blending of an object with a fixed color as objects or pixels increase distance away from the viewer.
<b>Frame Buffer</b>	Memory buffer used to store the image being displayed.
<b>Gouraud Shading</b>	One of the more sophisticated shading methods used to produce a smooth lighting effect across a 3D object. A specific color is used at each vertice of a triangle or polygon, and interpolated across the entire face.
<b>MIP Map</b>	Multum In Parvum (Latin) means “many in one.” It is a method of increasing quality of a texture map by storing multiple resolutions of the same image and dynamically switching between them depending on the size and depth of the object being textured.
<b>Off-screen Memory</b>	An area of memory used to preload and place images so that they can be quickly drawn on the screen. Offscreen memory refers to all the memory on your ATI accelerator card that is not taken up by the front buffer, which holds the display screen that you see.
<b>Pixel, Pel</b>	Picture element. Smallest addressable area of the computer screen. Pixels on computer displays are square; pixels on NTSC televisions have a 4:3 aspect ratio.

<b>Refresh Rate</b>	Also referred to as “vertical refresh rate”. The rate at which a monitor or television can redraw the screen from top to bottom. NTSC television systems have a refresh rate of approximately 60 Hz (but only draw one-half of the video frame in one pass); computer displays typically have refresh rates of 75 Hz or more. At a refresh rate of 70 Hz and lower, screen flicker is often noticeable.
<b>Specular Highlight</b>	The bright, usually small, intense light reflected from a 3-D surface with a high refraction value.
<b>Texture Mapping</b>	Mapping, or placing, an image onto an object. Images of realistic surfaces are placed on 3D models to create a richer and more complex visual effect.
<b>Trilinear Filtering</b>	Sampling method used to produce the most realistic looking 3D objects. Trilinear filtering averages one of the bilinear filter MIP Map levels along with the standard MIP Map samples.
<b>z-buffer</b>	<p>A z-buffer is an area of off-screen memory used to hold “depth” information. For each dot, or pixel, in the display buffer, there is a corresponding dot in the z-buffer which holds the depth (z) value for the display pixel. The depth data helps the ATI accelerator card decide what 3D objects are in front off other 3D objects.</p> <p>The larger the 3D window, the larger the z-buffer is in memory.</p>

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