

XCLAIM™ VR

User's Guide

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Table of Contents

1. Getting Started.....	1
Introduction.....	1
What's in the Package	2
What You'll Need	2
Related Documentation	2
2. Installing Your Hardware.....	3
Using XCLAIM VR's Connectors.....	4
Installing your XCLAIM VR	5
About Monitor Sensing	9
3. Installing Your Software.....	11
About ATI Software	11
Installing Software	12
ATI Displays Control Panel	15
ATI Guide	18
Customer Support	18
4. Multimedia Features.....	19
Using QuickTime Playback.....	19
Using QuickTime Video Capture.....	21
Viewing 3D Graphics.....	24
Using Mac2TV Video Out	27
Adding XCLAIM TV	35
A. Troubleshooting Tips.....	37
Before Contacting Customer Support	37
Solutions to Common Problems.....	37
B. Specifications	41
Video Mode Table	41
3D Mode Table.....	42
Memory Upgrade	43
Specifications.....	44
C. Compliance Information	47



Getting Started

Introduction

XCLAIM VR 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 1152x870
- 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

The ATI Displays control panel provides quick access to all of XCLAIM VR's easy-to-use features, and you have instant access to help using Apple Guide.

What's in the Package

The XCLAIM VR package contains the following hardware, software, and documentation:

- XCLAIM VR card
- 3.5" installation disks and/or CD-ROM with the latest QuickTime and QuickDraw 3D software
- User's Guide
- Video Out Adapter
- Composite and S-Video cables

If any item is missing or damaged, immediately contact the dealer from whom the unit was purchased.


What You'll Need

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

- Power Macintosh with a PCI expansion slot
- Macintosh System software 7.5.2 or later
- Apple monitor or VGA style monitor with adapter
- QuickTime 2.5 or later (included)
- QuickDraw 3D 1.0.6 or later (included)
- Minimum 16MB memory (QuickDraw 3D requires 16MB of memory)

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 card comes with ATI Guide, which provides online help about using the features of your card. Access the ATI Guide by clicking on the Apple Guide  icon on the ATI Displays control panel.

2

Installing Your Hardware

XCLAIM VR 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.



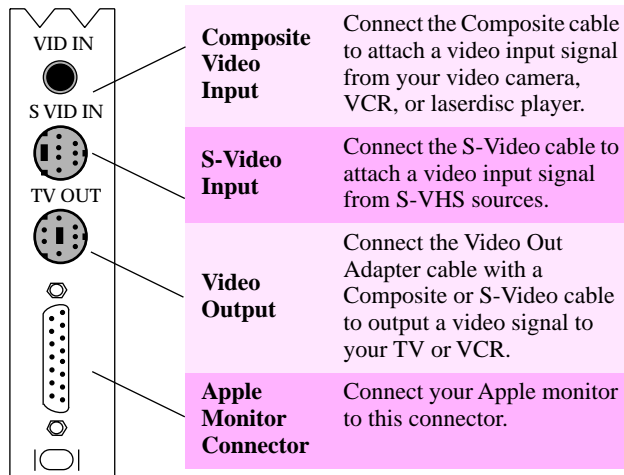
WARNING

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

Restart your Mac and hold down the SHIFT key during startup. This will disable all extensions 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.

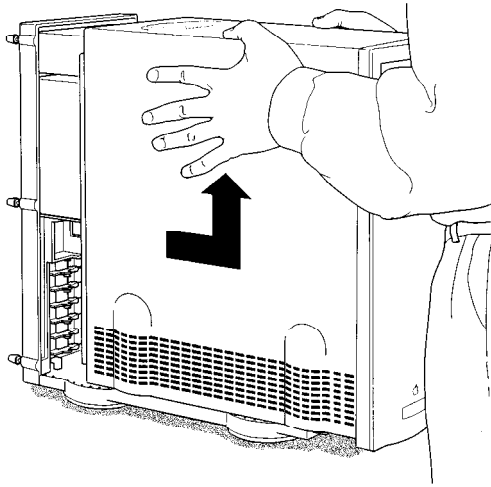
Using XCLAIM VR's Connectors

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



Installing your XCLAIM VR

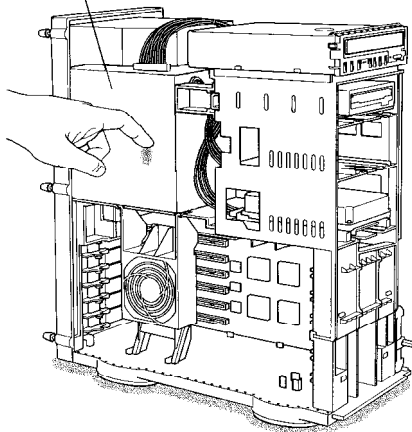
1. Turn off your computer, and disconnect the monitor cable.
2. Remove the computer cover. If necessary, consult your computer system manual for removal instructions.



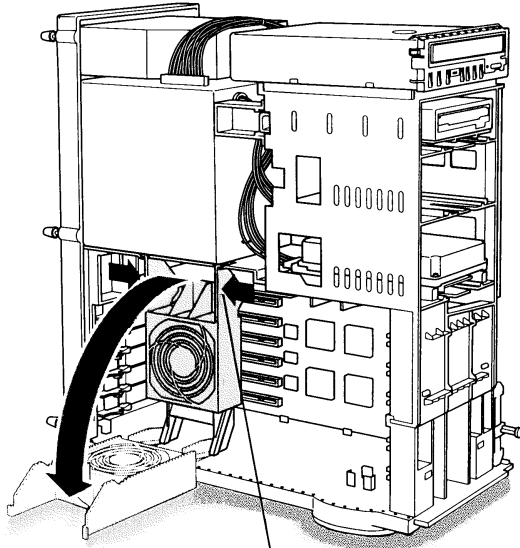
3. Choose the PCI expansion slot you wish to use.
4. Touch the metal part of the power supply case.

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

Power Supply



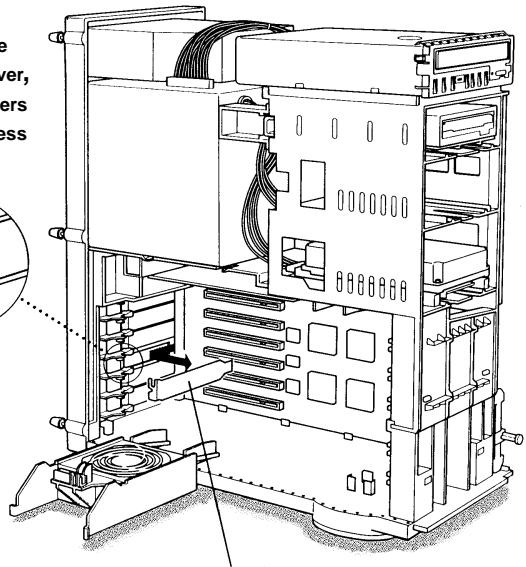
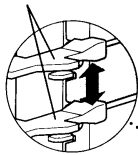
5. Lower the auxiliary fan.



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

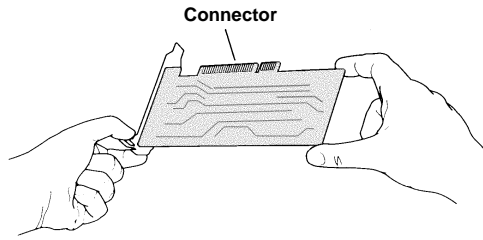
6. Remove the metal access cover from the expansion slot you want to use.

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

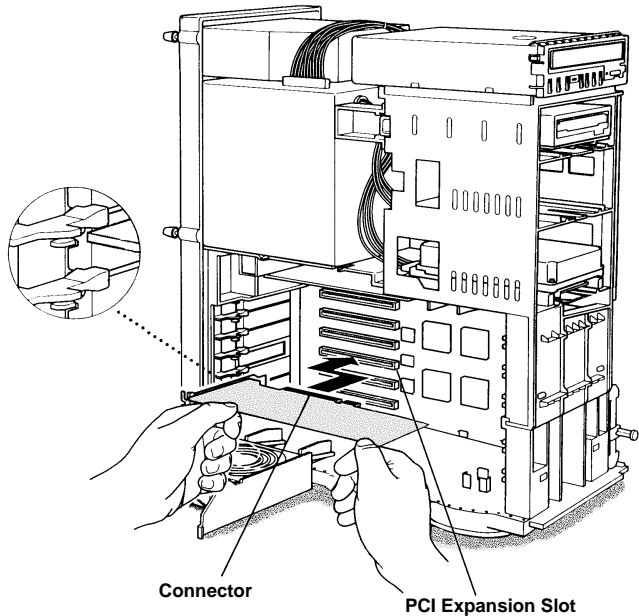


2. Slide the access port cover out and away from the access port.

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



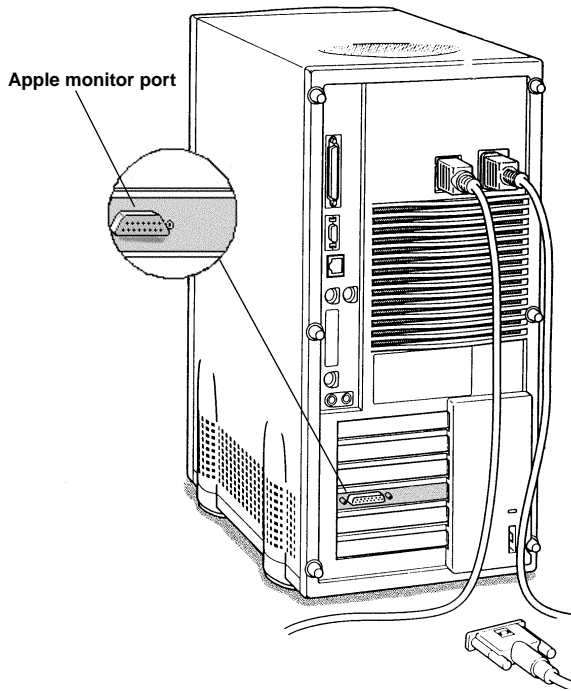
Do not force the card. The card should fit snugly into the expansion slot.



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

8. Replace the auxiliary fan.
9. Replace the computer cover.

10. Connect the monitor cable to the card.



Your monitor must support Apple's Monitor Sense protocol, either directly or through an appropriate adapter. For more information, see "About Monitor Sensing" on page 9.

11. To connect a video input source to your card, see "Using XCLAIM VR's Video In Connectors" on page 21.

To output your computer's display to TV or VCR, see "Using XCLAIM VR's Video Out Connector" on page 28.

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

About Monitor Sensing

Apple's Monitor Sensing specification allows graphics cards to identify the attached monitor. During startup, the XCLAIM VR checks the status of three of the fifteen pins on the Apple monitor port. It then auto-configures itself according to the monitor sense code detected and enables all resolutions supported by the monitor. Since the XCLAIM VR relies on this sense code to correctly auto-configure during startup, the monitor must supply the appropriate sense code.

In a case where your monitor does not directly supply the sense code information, an adapter can be used to set the appropriate sense code for your monitor. Typically, an adapter is used to connect a VGA monitor to the Apple monitor port, or to simply supply the correct monitor sense code information.

If the adapter supplies the sense code information for only one resolution, then that resolution will be the only one available, even if the monitor supports multiple resolutions. 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 cannot correctly auto-configure itself for the attached monitor.

Although the XCLAIM VR card does not output Sync-on-Green (SOG) signals directly, adapters are available that can 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 ask your dealer. For information about how to contact ATI Customer Support, select the Support button on the ATI Displays Control panel.

3

Installing Your Software

About ATI Software

XCLAIM VR requires that several components be added to your System folder and to your Preferences folder. The XCLAIM VR 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 18.

Installing Software

1. Insert the XCLAIM VR installation disk into your disk drive.

or

Insert the ATI Installation CD-ROM into your CD-ROM drive.

2. Double-click on the XCLAIM VR  Installer icon.

The ATI splash screen appears.



3. Click the Continue button.

An ATI information and disclaimer screen appears.



4. Click the Continue button.

The XCLAIM VR Standard Install window appears. Click Custom to install only certain components.



- Click the Install button.
- If you are installing Xclaim Video Player, you will be prompted to specify a folder location.

Select a folder where you want the files installed.



- Click Install.

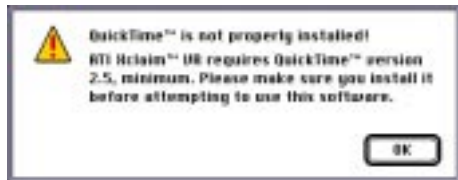
Upon completion, a list of installed files appears. Click the Show Me button to locate where a file has been installed.



- Click OK.

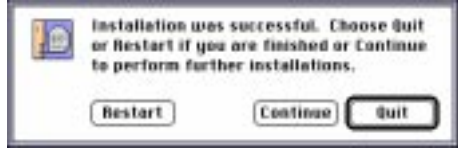
The installer then checks your system to determine if you have the latest versions of the required software. If you do not have the appropriate Apple software, you are notified about what needs to be installed. The XCLAIM VR Extras CD includes the latest Versions of QuickTime and QuickDraw 3D.

If this message appears, you need to install the latest version of QuickTime.



9. Click OK.

To complete the installation, you must restart your computer.



10. If you are finished, click Restart.

Your system restarts.

or

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

or

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

ATI Displays Control Panel

The ATI Displays control panel provides access to the various multimedia features that XCLAIM VR has to offer. To open the ATI Displays control panel, select Control Panel from the Apple menu, then select 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.

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.



Display Details

The Details window gives you information about specific software components needed to enable each of XCLAIM VR'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. The Details window also lists the Apple system software required for XCLAIM VR (QuickTime, QuickDraw 3D).



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.





Monitors

The Monitors feature provides access to the standard Apple Monitors control panel (or the Sound and Displays control panel on some Macs). You can use this panel to select color depths and resolutions, and set up multiple monitors. For more information on this panel refer to the Macintosh Guide that comes with your system.



3D Texture Compression

You can adjust the 3D texture compression using the 3D features included with XCLAIM VR. Some 3D textures demand a significant amount of memory. To free up some memory you can use 3D texture compression. For more information about 3D texture compression, see “Viewing 3D Graphics” on page 24.



3D Memory Monitor

XCLAIM VR supports advanced 3D features including mip maps, gouraud shading, fog effects, and texture mapping. The 3D Memory Monitor shows how available memory in the video card is allocated when displaying 3D graphics. For more information about 3D graphics and the 3D Memory Monitor, see “Viewing 3D Graphics” on page 24.




Mac2TV Video Out

XCLAIM VR 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. For more information about Mac2TV Video Out, see “Using Mac2TV Video Out” on page 27.



ATI Guide

The ATI Guide is an additional source of information when you are working with the ATI Displays control panel. It behaves similarly to the Macintosh Guide that comes with your system.

Access the ATI Guide by clicking on the Apple Guide  icon on the ATI Displays control panel. 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 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 system is automatically included when you generate the report.



Multimedia Features

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

- Watch full screen, full motion, TV-quality video using QuickTime playback acceleration
- Capture up to 320x240 at 30 frames per second using QuickTime capture
- Play arcade style 3D games and experience virtual reality at home or in cyberspace using QuickDraw 3D acceleration
- Output movies to tape or play games on television with Mac2TV video out
- Experience high-performance, high-resolution, true-color graphics with QuickDraw 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.

Using QuickTime Playback

XCLAIM VR'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's hardware scaler maintains the original quality of your QuickTime movie when scaling to a larger size—even full screen.

XCLAIM VR's QuickTime playback acceleration displays in millions of colors, even if the current color depth

setting is 256 colors or grayscale. When scaling video, XCLAIM VR uses special hardware techniques (alpha blending and chroma interpolation) to enhance the video quality instead of just repeating pixels.



To use XCLAIM VR's playback acceleration, you must have QuickTime version 2.5 or greater installed on your machine. The latest version of QuickTime is included with the Installation CD-ROM.

Optimizing Video Playback

When you scale a movie, your system switches from QuickTime's software scaler to XCLAIM VR'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 Cinepak or Indeo compressed format

QuickTime clips must be in Cinepak (the most common QuickTime movie format) or Indeo format to be scaled by XCLAIM VR. To determine if a video will be accelerated using XCLAIM VR's hardware scaler, check the video format.

To check the format of a video

1. Open the movie using Apple Movie Player.
2. Select Get Info.
3. From the 1st pull down menu, select Video Track.
4. From the 2nd pull down menu, select Format.
5. Read the format type. Remember, only Cinepak and Indeo formats use XCLAIM VR's QuickTime acceleration and hardware scaler.



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's QuickTime capture, you can capture up to 320x240 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's Video In Connectors

You can connect a VCR or camcorder to one of your XCLAIM VR'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. You can use this procedure to connect other video sources, such as a camcorder, to the video in of your XCLAIM VR.



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

Using XCLAIM VR's Video Capture with Third Party Applications

XCLAIM VR'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. (For more information, see "Using XCLAIM VR's Video In Connectors" on page 21).
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.



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)
- 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'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.

For more information about optimizing QuickTime capture, see the QuickTime FAQ (Frequently Asked Questions) located on the XCLAIM VR Extras CD-ROM.

Viewing 3D Graphics

XCLAIM VR's QuickDraw 3D Acceleration supports the following advanced 3D graphics capabilities:

- QuickDraw 3D RAVE Support
- Six perspective correct texture mapping functions
- 16-bit Z-buffering (a process that removes hidden surfaces)
- Flat and Gouraud shading
- Alpha blending and fog effects
- Video texture and 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 only displays 3D graphics in thousands and millions of colors. 3D acceleration is not supported when your color depth is 256 colors because there are too few colors to display complex 3D textures. To change your color depth, use the Monitors feature in the ATI Displays control panel.

You can use the 3D Memory Monitor to see how memory on your XCLAIM VR is allocated when displaying 3D graphics. This will allow you to optimize 3D performance. You can also adjust the compression of textures using the 3D Texture Compression feature.

Using the 3D Memory Monitor

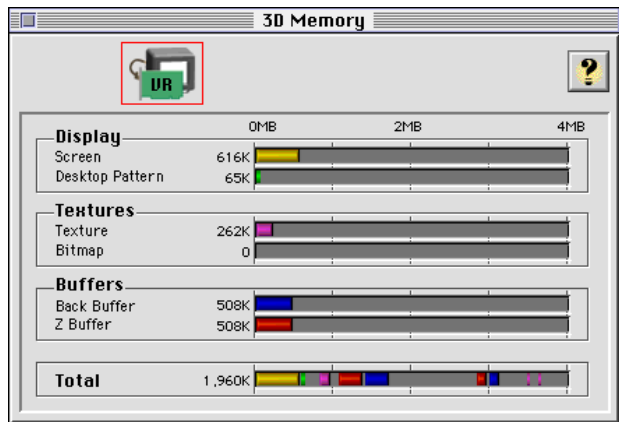
When you open 3D graphics on your Mac, run the 3D Memory Monitor to see how your XCLAIM VR has allocated 3D memory.

To open the 3D Memory Monitor

1. Select Control Panels from the Apple Menu.

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 has been allocated between display, textures, and buffers. If you use up all XCLAIM VR's available memory, your Mac will drop 3D textures and substitute 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 and video.

To reduce the memory allocated to Texture memory:

- reduce the amount of textures in your 3D graphic
- adjust 3D texture compression (See “Adjusting Texture Compression” on page 26.)

Buffers

Back Buffer and **Z Buffer** are directly related to the size of the 3D window.

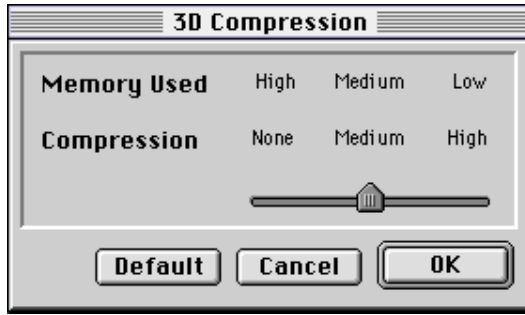
To reduce the memory allocated to Buffer memory:

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

Adjusting Texture Compression

When running 3D graphics, 3D textures are loaded into the memory on your XCLAIM VR card. You can adjust the texture compression to compress the 3D textures in memory. Compressed textures take up less space so that more textures can be loaded.

If you set your texture compression to None, you will get the best image quality but your 3D textures may take up a lot of memory.



Medium texture compression will compress your 32 bit textures to 16 bit, thus reducing the memory required by a texture in half.

High compression will compress your 32 and 16 bit textures to 8 bit. High texture compression will save the most memory but the loss in data may affect the image quality.



When using QuickDraw 3D version 1.0.6, a window containing 3D graphics must be redrawn for changes to take effect. To redraw a window, resize it or move the window to a new position.

Using Mac2TV Video Out

XCLAIM VR's Mac2TV Video Out feature allows you to output your computer's display to your TV or VCR. Anything you can display on your monitor can be output to TV.

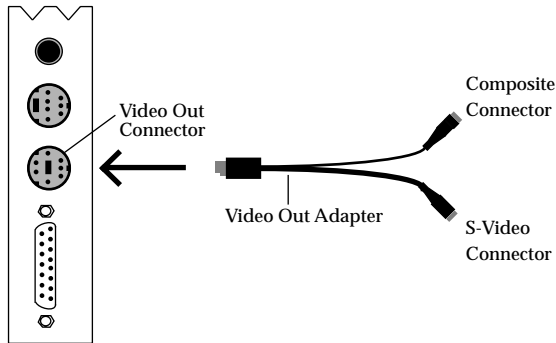
- View computer output directly on your television in either NTSC or PAL formats with advanced flicker reduction and artifact suppression
- Connect using Composite or S-Video output capabilities
- Mac2TV provides a big-screen experience for playing games, giving presentations, and browsing the Internet.

Using XCLAIM VR's Video Out Connector

Your XCLAIM VR includes Mac2TV Video Out. You can use this feature to connect your XCLAIM VR 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 card is installed correctly.
3. Looking at the back of your Mac, locate your XCLAIM VR card.
4. Connect the video out adapter to the Video Out of your XCLAIM VR 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 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.

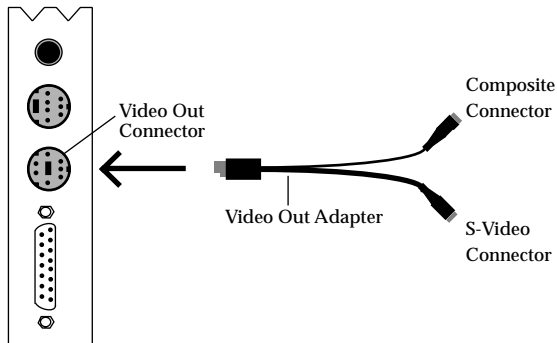
7. Turn on your Mac and your TV.



Now that you have connected your XCLAIM VR card to a TV, you need to enable Mac2TV. For more information, see “Enabling Mac2TV” on page 30.

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 card is installed correctly.
3. Looking at the back of your Mac, locate your XCLAIM VR card.
4. Connect the video out adapter to the Video Out of your XCLAIM VR 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 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 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 card to a VCR, you need to enable Mac2TV. For more information, see "Enabling Mac2TV" on page 30.

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.
- Many newer Apple and VGA multi-frequency monitors are capable of supporting the 60 Hz vertical refresh rate at several resolutions. If you are certain that your monitor supports this refresh rate (check your monitor User's Guide), restore the monitor display by pressing **z -Option-m-o** together.

1. Open the ATI Displays control panel.

- Click on the Mac2TV icon.
- In the Video Output box, click Video Output On.



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 Mac with Mac2TV enabled

If you have Mac2TV display enabled, a message appears when you startup your system 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 card. XCLAIM VR detects that you have a TV attached and automatically starts with Mac2TV display enabled.

Optimizing Mac2TV

You can optimize your TV display using the video out preferences. Viewing images on your TV can be improved by changing the contrast, brightness, or size of your display.

To set the video out preferences, click the Mac2TV icon on the ATI Displays Control Panel.



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

- **Saturation** is the amount of color present that distinguishes pale or washed-out colors from vivid ones.
- **Hue**, often used as a synonym for “color”, is the quality that distinguishes among red, green, yellow, and so on.
- **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”.

Hue is generally not adjusted. Depending on the TV, however, it may be necessary or desirable to adjust the hue to approximate the monitor’s display.

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.

Dot Crawl is an undesirable characteristic of many Composite televisions that is seen as thin, jagged edges moving around objects on the screen. The “Frozen”

setting freezes, or eliminates, the dot crawl, and is especially useful for viewing pictures or stills. S-video equipment does not exhibit this effect.

For a display image, 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.

The ATI Displays control panel has two controls for adjusting the image contrast -- **Contrast Shadow** and **Contrast Hilight**. Contrast Shadow adjusts the overall contrast. Contrast Hilight mainly emphasizes, or de-emphasizes, the blacker (dark) areas of an image.

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. Select Control Panels.
3. Select Views.
4. Choose a larger font size.

Adding XCLAIM TV

Maximize the power of your Macintosh and revolutionize your TV viewing experience by adding ATI XCLAIM TV to XCLAIM VR. With XCLAIM TV, your Mac can receive a television signal and display it on your monitor while you work. Or, let your Mac watch television for you.

XCLAIM TV features intelligent television functionality, including the ability to zoom in on the action, monitor your favorite channels simultaneously and record transcripts. Plus XCLAIM TV offers true stereo sound, taking computer TV technology to new heights.

Once you try XCLAIM TV, you'll wonder how you ever watched TV without it.



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?

- The problem likely relates to Monitor Sensing. Any monitor connected to an Apple-type monitor port must supply “sense code information” so that the graphics card can configure itself for the attached monitor. If the detected sense code does not represent the capabilities of your monitor, then the card cannot configure itself properly. You need to attach a monitor adapter that supplies the proper sense code for your monitor. Monitor adapters can be obtained from the monitor manufacturer, or from your local Apple Authorized Dealer.

I am using a monitor adapter to supply the sense code, but I only get one resolution, even though I have a multiscan monitor. Why?

- If the adapter is configurable, you need to adjust it to one of the multiscan options that best matches your monitor. If the adapter is not configurable, you need a new adapter with the proper sense code for a multiscan monitor.

I have a monitor with three BNC connectors. Why won't it work with my XCLAIM VR 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 Macintosh to convert the separate sync signal from the ATI card to an SOG signal for the monitor. Check with your local Apple Authorized Dealer for availability of SOG adapters.

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

- For a cable with five BNC connectors, ensure that they are all connected to the monitor. If only three of the cables are connected (i.e., R, G, and B), 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 Macintosh 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.

Can the XCLAIM VR work in all Power Macintosh computers?

- No, the XCLAIM VR only works with PCI-based Power Macintosh computers. The minimum system requirements for the XCLAIM VR are:
 - a) Power Macintosh with PCI expansion slots,
 - b) Macintosh System Software version 7.5.2 or later,
 - c) Apple monitor or VGA style monitor with adapter
 - d) QuickTime 2.5 or later (included)
 - e) QuickDraw 3D 1.0.6 or later (included)
 - f) Minimum 16MB memory (QuickDraw 3D requires 16MB of memory)

Where can I get a memory module upgrade for my XCLAIM VR card?

- Memory upgrade modules are available either from your dealer, or they can be purchased directly from ATI. For information about contacting ATI, click the ATI icon in the Displays control panel.

Specifications

Video Mode Table

This video mode table lists the color depth capabilities for the supported resolutions on the 2MB and 4MB XCLAIM VR cards.

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

Color depth is measured in bits per pixel (bpp):

- 8 bpp = 256 colors
- 16 bpp = thousands (32,768 colors)
- 32 bpp = millions (16.7 million colors)

Display Resolution	Vertical Refresh Hz	Maximum Colors at 2MB	Maximum Colors at 4MB
512 x 384	70	millions	millions
640 x 480	60, 67, 72, 75, 85, 90, 100, 120	millions	millions
640 x 870	75	thousands	millions
800 x 600	56, 60, 72, 75, 85, 90, 100, 120	millions	millions
832 x 624	75	millions	millions
1024 x 768	60, 70, 75, 85, 90	thousands	millions
1024 x 768	100, 120	thousands	thousands
1152 x 870	75	thousands	millions

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 and no texture compression. You could increase the number of full screen 3D windows possible by using texture compression.



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	
		2MB	4MB
512 x 384	Thousands	2.00	4.50
512 x 384	Millions	1.00	2.75
640 x 480	Thousands	1.00	2.75
640 x 480	Millions	0.40	1.50
800 x 600	Thousands	0.50	1.50
800 x 600	Millions	—	0.75
832 x 624	Thousands	0.45	1.50
832 x 624	Millions	—	0.60
1024 x 768	Thousands	—	0.75
1152 x 870	Thousands	—	0.50

Memory Upgrade

If you currently have a 2MB XCLAIM VR card, you can upgrade to 4MB by adding a 2MB upgrade module. A 4MB XCLAIM VR card gives you more color depths in high resolution modes and more 3D modes. See the “Video Mode Table” on page 41 to determine which resolutions and color depths are available for your monitor with 2MB or 4MB of memory. See the “3D Mode Table” on page 42 to determine additional 3D modes for your monitor at 2MB or 4 MB.

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

To obtain a memory module upgrade, please contact ATI or your dealer. For information about contacting ATI, click the ATI icon in the ATI Displays control panel.

Specifications

System Requirements

- Power Macintosh with PCI.

Operating System

- Macintosh System software (version 7.5.2 or higher).
- QuickTime (version 2.5 or higher).
- QuickDraw 3D (version 1.0.6 or higher).

Graphics Controller

- ATI 3D RAGE II — 64-bit graphics and multimedia accelerator chip.

Video Display Buffer

- 2MB memory upgradeable to 4MB.
- 64-bit memory interface.

Bus

- 32-bit PCI local bus compliant with PCI version 2.0 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

- Apple Connector - Apple DB-15

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 +/- 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.



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)