

# ***Righteous 3D II***



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## **Welcome!**

Welcome to the Righteous 3D II online help. We hope you find our online help very useful. Thank you for purchasing Righteous 3D II. Care has been taken to ensure that it will provide you with years of trouble-free operation.

# ***Righteous 3D II Online Manual***



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## Introduction

Thank you for entering the generational leap beyond in PC graphics — three-dimensional graphics with the Righteous 3D® II. It's a dedicated 3D accelerator that operates transparently with existing 2D graphics accelerators and delivers true arcade 3D graphics performance. Designed for the serious game player who demands the highest performance for games, Righteous 3D II delivers "Righteous Results."

Righteous 3D II is multimedia-ready for your Pentium PCI-based system. It installs into an available PCI slot and connects via a cable to your VGA graphics accelerator. Righteous 3D II is available in configurations of 8MB and 12MB of EDO DRAM with memory dedicated to texture memory.

Based on 3Dfx Interactive Voodoo2 Graphics™, Righteous 3D II's triple 64-bit memory architecture provides direct access to the frame buffer and texture memory. This advanced design uses dual texture-processing units, each of which can apply texture to an object in a single pass.

In addition, two Righteous 3D II's of the same memory configuration can be connected together to accelerate the next generation of games. When connected by an internal cable, the cards automatically enter Scanline Interleave (SLI) mode and work simultaneously on each frame of animation, which provides an impressive increase in performance.

## Direct3D

Direct3D is the next generation of real-time, interactive 3D technology for use on the desktop and the Internet. You can experience more compelling and powerful 3D graphics on the Internet and when using games, education and business applications. Direct3D improves Windows 95 game quality and performance to rival arcade machines.

Direct3D is a complete set of real-time 3D graphics services that deliver fast software-based rendering of the full 3D rendering pipeline (transformations, lighting, and rasterization), transparent access to hardware acceleration and a comprehensive, next-generation 3D solution for your PC. Direct3D provides access to advanced graphics capabilities of 3D hardware accelerators including z-buffering, anti-aliasing, alpha blending, mip mapping, atmospheric effects and perspective correct texture mapping.

Tight integration with DirectX and ActiveX technologies allows Direct3D to deliver next-generation 3D graphics capabilities including video mapping and hardware 3D rendering in 2D overlay planes. Direct3D also integrates with DirectDraw to provide 2D drawing and texture services for 3D rendering. Applications use Direct3D and DirectDraw for 3D rendering in a relatively straightforward manner.

## Support and Information Services

Orchid offers a variety of support and information services to help you get the most from your product. The following services are available:

- ◇ Technical Support
- ◇ Electronic Bulletin Board Service (BBS)
- ◇ Return Materials Authorization (RMA)
- ◇ Fax-On-Demand
- ◇ World Wide Web
- ◇ Customer Service

Refer to the table below for details on these services.

### Technical Support

If you need technical assistance, our Technical Support Engineers will be glad to help you. You can contact us via telephone, fax or BBS. Before calling Technical Support please have the following information ready:

- ◇ The model name and serial number of your Orchid product.
- ◇ Your computer information such as CPU type, operating system, amount of installed memory and other peripherals installed in your computer.
- ◇ The version number of the Orchid product driver.
- ◇ Try to call from the location of your computer.

NOTE: For Return Material Authorization purposes, please keep a copy of your product receipt.

Service	Hours	Country	Telephone Number
Technical Support - Live phone help from Technical Support Engineers	M-F: 7:00am to 5:00pm (PST)	USA UK	(510) 661-3000 (510) 661-6982 (Fax) +44 (1256) 844899 +44 (1256) 364222 (Fax)
Electronic Bulletin Board Service (EBS) - Information on software upgrades, new releases and other helpful information	24 hours a day 7 days a week	USA UK	(510) 661-6837 14400 baud rate, Parity=N, Data Bits=8, Stop Bits=1 YMODEM and ZMODEM (recommended file transfer protocols) +44 (1256) 363373
RMA (Return Materials Authorization) - Return products for repair	M-F: 8:00am to 4:45pm (PST)	USA	(510) 661-3030 (510) 683-0543 (Fax)
Fax-On-Demand - Automated system for product literature, technical bulletins and other helpful information	24 hours a day 7 days a week	USA	(510) 661-3199
World Wide Web - Product information, technical support, press releases and other helpful information	24 hours a day 7 days a week	USA Europe	<a href="http://www.orchid.com">http://www.orchid.com</a>
Customer Service - Order Orchid and Micronics products	M-F: 8:00am to 5:00pm	USA UK Taiwan	(800) 577-0977 (510) 661-3666 (Fax) +44 (1256) 479 898 +44 (1256) 364222 (Fax) +886 2 918 5005 +886 2 911 5472 (Fax)

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## Before You Begin

This manual will familiarize you with the features, installation and use of your Righteous 3D II. Please refer to the list below for common names used throughout the manual.

### Common Names

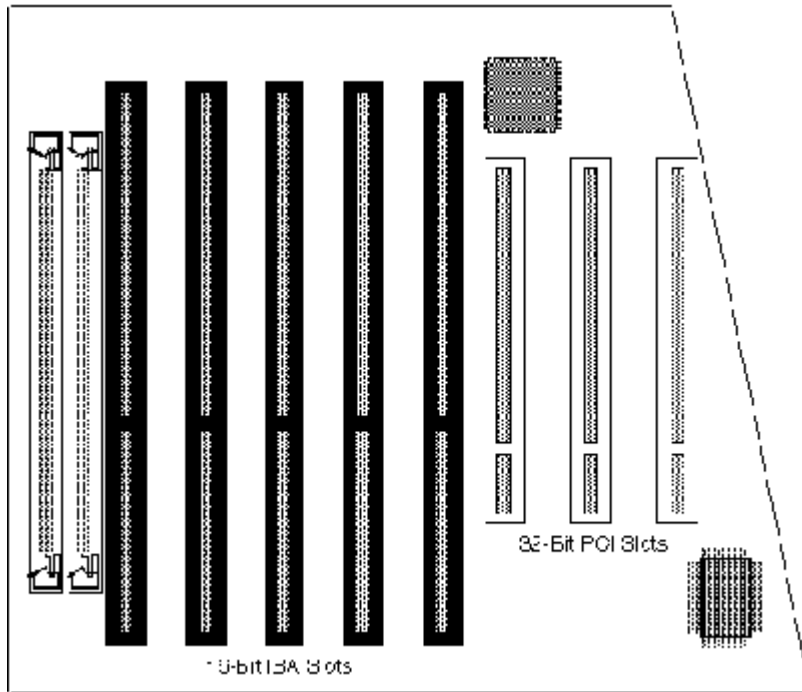
<b>2D</b>	Two Dimensional
<b>3D</b>	Three Dimensional
<b>DDC</b>	Display Data Channel
<b>DRAM</b>	Dynamic Random Access Memory
<b>EDO</b>	Extended Data Out
<b>FBI</b>	Frame Buffer Unit
<b>PCI</b>	Peripheral Component Interconnect
<b>SLI</b>	Scanline Interleaving
<b>TMU</b>	Texture Mapping Unit
<b>VGA</b>	Video Graphics Array

# Section 1: Hardware Installation

Whether you are a beginner or experienced user, Righteous 3D II's simplified design allows you to get up and running quickly. Installation is simple and all configuration settings are under software control. This section gives you help on how to properly install the Righteous 3D II and how to connect two Righteous 3D II's to utilize the Scanline Interleave feature.

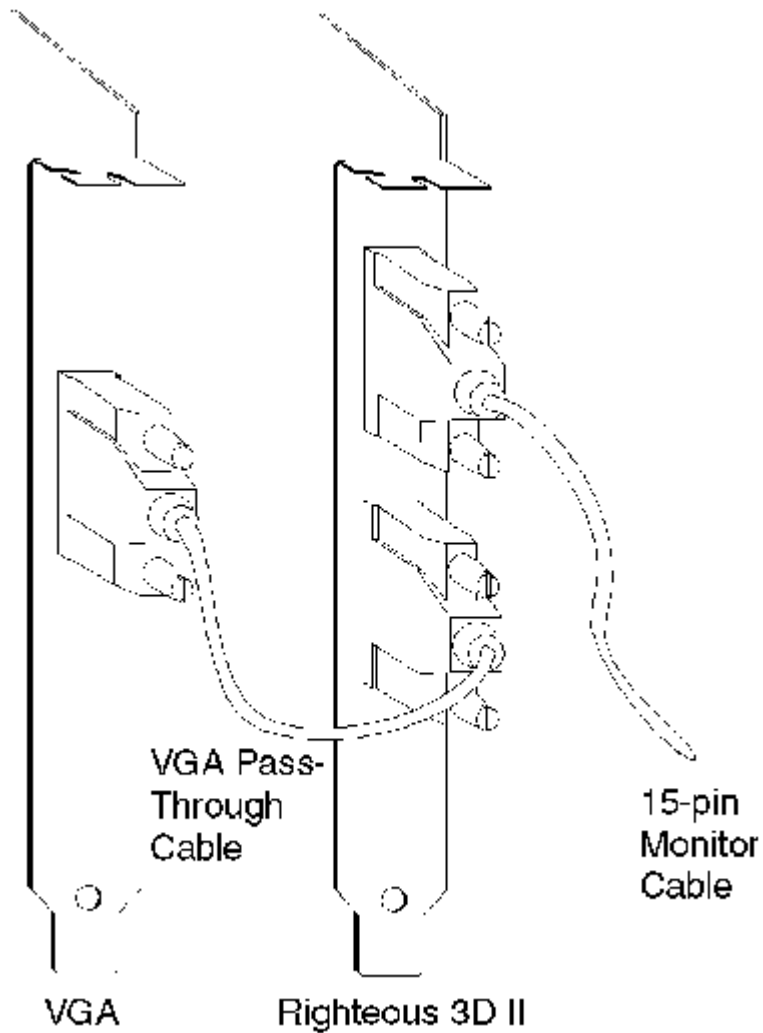
## Installing Righteous 3D II

1. Turn off the power to your computer and remove the computer cover.
2. Select a PCI slot close to your VGA graphics accelerator. Most computers accommodate both PCI and ISA slots. The PCI slots are usually the smaller slots (see the example below).



Please refer to your computer's reference manual for more information.

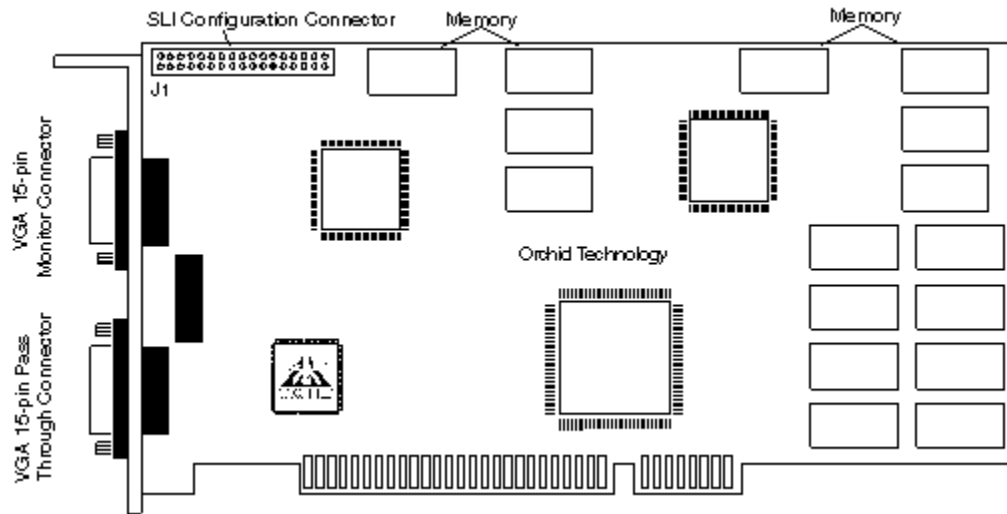
3. Remove the rear slot cover bracket if it is present and save the screw.
4. Now remove the Righteous 3D II from its antistatic packaging.
5. Carefully hold Righteous 3D II by the top edges and lower it into the PCI expansion slot. Ensure that Righteous 3D II seats firmly into the slot.
6. Secure Righteous 3D II in place by fastening its metal bracket with the screw you saved.
7. Connect your monitor cable to the top 15-pin connector (blue) on the Righteous 3D II.



8. Connect one end of the VGA pass through cable to the bottom 15-pin connector on the Righteous 3D II. For additional help, refer to the diagram below.
9. Connect the other end of the VGA pass through cable to the 15-pin connector on your VGA graphics accelerator.
10. Replace the cover of the computer.

You are now ready to install the Righteous 3D II software drivers. Refer to Section 2: Software Installation.

### Righteous 3D II Diagram



**NOTES:**

- o 15-pin VGA DDC connector ([see Appendix A](#)).
- o 15-pin VGA pass through connector ([see Appendix A](#)).
- o Memory - 8MB EDO DRAM. (Righteous 3D II is also available with 12MB of EDO DRAM. The additional memory is added to the back of the card.)
  - 8 MB : 4MB for FBI + (2 by 2) TMUs
  - 12MB : 4MB for FBI + (4 by 2) TMUs
- o J1 - SLI Configuration Connector (see Appendix A). The SLI configuration cable is included.

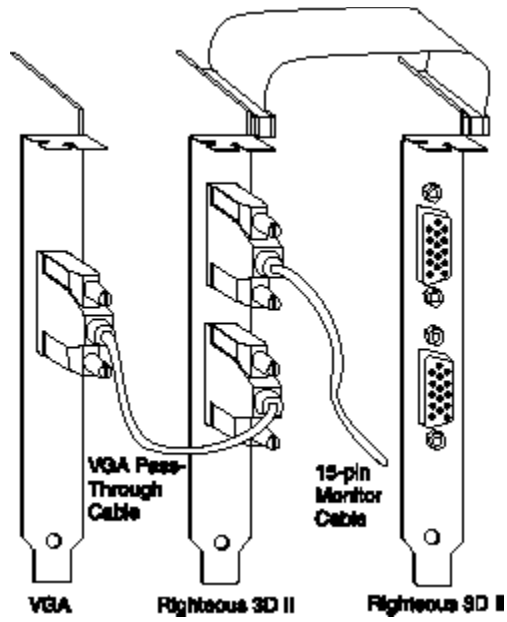
**Scanline Interleave (SLI) Feature**

Two Righteous 3D II's of the *same memory configuration* can be connected together to double the texture fill-rate and enable resolutions up to 1024x768. This is known as Scanline Interleave (SLI). When connected by the supplied SLI configuration cable, the cards automatically enter SLI mode and work simultaneously on each frame of animation.

**Connecting two Righteous 3D II's**

The following instructions assume that you have already installed one Righteous 3D II card.

1. Select a PCI slot next to the Righteous 3D II installed.
2. Carefully hold the second Righteous 3D II by the top edges and lower it into the PCI expansion slot. Ensure that it seats firmly into the slot.
3. Connect each end of the SLI configuration cable to the 34-pin SLI configuration connector on each card.
4. Connect the VGA pass-through cable and monitor cable to one of the Righteous 3D II cards.



NOTE: The Righteous 3D II drivers will auto-detect which card your monitor is plugged into and drive it properly.

## Section 2: Software Installation

Once you complete the hardware installation, you can begin the Righteous 3D II drivers and software installation. Righteous 3D II comes with awesome 3D titles for your enjoyment. This section gives you the installation procedures for Windows 95 and DOS.

### Windows 95

#### Driver Installation

1. Start Microsoft Windows 95. The New Hardware Found screen appears.
2. Insert the Righteous 3D II CD into your CD-ROM drive.
3. From the New Hardware Found screen, select the Driver From Disk Provided by Hardware Manufacturer option. Click on OK.
4. Type in the driver location: D:\WIN95 (where D is the CD-ROM drive letter). Click on OK.
5. Windows 95 copies the Righteous 3D II drivers to your hard drive.

#### Software Installation

The Righteous 3D II CD-ROM is configured to automatically launch the software installation program.

1. Start Microsoft Windows 95.
2. Insert the Righteous 3D II CD into your CD-ROM drive. The following screen appears:



NOTE: A pre-existing hardware installation may prevent the software installation program from launching automatically. If this occurs, run D:\SETUP.EXE (where D is the CD-ROM drive letter). Click on OK.

3. Before selecting any Direct3D game application or demo, you *must* install the DirectX software first. NOTE: It is highly recommended that you install the version of DirectX provided with Righteous 3D II.
4. Click on DirectX and follow the instructions on the screen.

5. After the DirectX software is installed, you will be prompted to restart the system for the changes to take effect.
6. After your system restarts, the Righteous 3D II software installation program is automatically launched.
7. You can make another selection or click on Exit to close the Righteous 3D II Software Installation program and return to the Windows 95 desktop.

### **User's Manual**

Click on the User's Manual button and the program will install the Adobe Acrobat Reader, if not already installed, or it will launch the user's manual. After installing the Adobe Acrobat Reader, click on the User's Manual button again to launch the manual.

### **Final Reality**

A benchmark utility that will test the effectiveness of your system in processing and rendering 3D images. Click on the Final Reality button to enable a series of tests.

### **Games Demo**

Click on this button to play demos that truly take advantage of Righteous 3D II's arcade 3D graphics performance.

## Section 3: Technical Information

Orchid Technology is known for its responsiveness to its customers. This section gives you a list of helpful tips for troubleshooting your Righteous 3D II. You're also given information on how to contact Technical Support and how to receive advice and support via our online services.

### Troubleshooting Righteous 3D II

To help you diagnose problems you may have with the Righteous 3D II, we've presented the following helpful hints in a symptom and solution format. This format serves a twofold purpose:

You may be able to fix your problem . . . or if these steps don't help you solve your problem, they will most certainly give you a better handle on what to tell Technical Support once you contact them.

#### Operation

Symptom	Solution
Computer doesn't power-up or respond when turned on.	(1) Verify that your computer and monitor are plugged in. Check the power cables. (2) Make sure the Righteous 3D II is properly installed in the slot. The edge connector must be inserted all the way into the expansion slot.
The Righteous 3D II Setup tab doesn't appear in the Display Properties Sheet.	The driver may not have been installed correctly. Check the Windows 95 Device Manager list for the Righteous 3D II. Follow the steps below: 1) From the Windows 95 desktop, click on Settings, then click on Control Panel. 2) From the Control Panel, click on the System icon. 3) From the System Properties, click on the Device Manager tab. 4) Check for "Righteous 3D II" listed under the Sound, Video, & Game Controller category. 5) If "Righteous 3D II" is not listed, check for "PCI Multimedia Video Device" listed under the Other Devices category. If it is listed, go to Step 8. 6) If "PCI Multimedia Video Device" is listed, remove it and restart your system. 7) Refer to the Windows 95 Driver installation instructions in Section 2. 8) If "Righteous 3D II" is listed, click on it, then click on Properties. 9) Click on Change Driver, then click on the Have Disk option. Type in the driver location: D:\WIN95. Click on OK. 10) Follow the instructions on the screen to complete the driver installation.

#### Display



Symptom	Solution
Computer seems to boot up properly but there's no display.	<ol style="list-style-type: none"><li>(1) Check the power cable to your monitor.</li><li>(2) Your monitor cable may not be fastened securely and properly. Check both the connection at the monitor and at the Righteous 3D II card.</li><li>(3) Verify that the VGA pass through cable is connected properly between your VGA accelerator card and the Righteous 3D II.</li><li>(4) It's possible that your monitor cable is not the correct type for the Righteous 3D II. See Appendix A for the proper pin-out information to determine if your cable is correct.</li><li>(5) Hook up your monitor directly to your VGA accelerator card to determine if the problem is possibly with Righteous 3D II or the overlay cable.</li></ol>

# Appendix A: Technical Specifications

This appendix provides the technical specifications and features for Righteous 3D II.

## Configuration

Righteous 3D II - 8MB EDO DRAM or 12MB EDO DRAM  
Triple 64-bit memory architecture

## Video Chipset:

3Dfx Interactive Voodoo2 Graphics

## Bus Interface:

PCI 2.1 Compliant

## Minimum System Requirements\*:

Pentium PCI based system  
Available PCI expansion slot  
VGA Display Adapter  
VGA Compatible Monitor  
16MB of System Memory  
CD-ROM Drive  
MS-DOS 6.0 or later  
(Windows 95 required for Direct3D support)

## Connectors:

DB-15 analog VGA w/ DDC support  
DB-15 VGA pass-through connector

## Temperature:

Operating: from 0 to 50 degrees C  
Storage: from -30 to 60 degrees C

## Humidity:

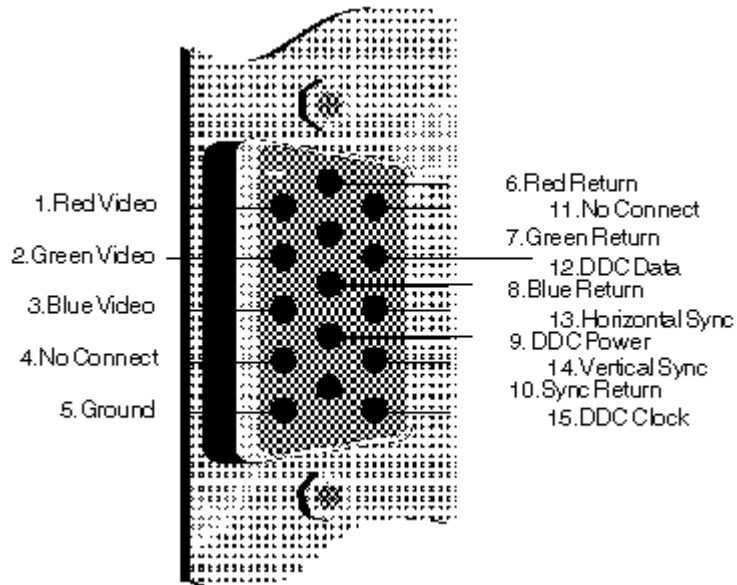
Operating: from 15% to 90%  
Storage: from 10% to 95%

\*Some software games may require additional resources.

## Connector Pin-Out Specifications

The connector pin-outs on the Righteous 3D II are the same as the standard 15-pin D-shell connector pin-outs. NOTE: The Royal Blue color indicates that power is available on pin 9 in accordance with the DDC standard.

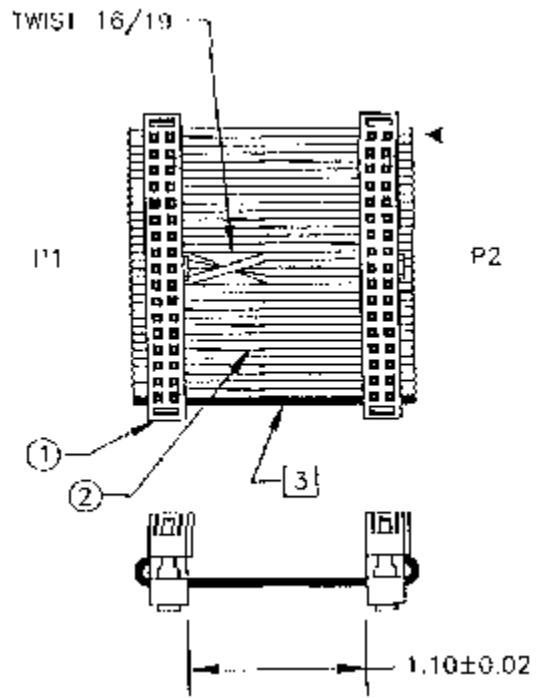
The 15-pin VGA pass connector on the Righteous 3D II is used for output from your VGA graphics accelerator. The pin-outs are as follows:



## SLI Connector Pin-Out Specifications

The SLI support for Righteous 3D II is accomplished by connecting two cards together with an internal cable to 34-pin SLI connector. This connector is located at the upper left corner of the Righteous 3D II.

Pin Assignments	
P1	P2
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
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## Appendix B: Direct3D

Direct3D is the next generation of real-time, interactive 3D technology for use on the desktop and the Internet. You can experience more compelling and powerful 3D graphics on the Internet and when using games, education and business applications. Direct3D improves Windows 95 game quality and performance to rival arcade machines.

Direct3D is a complete set of real-time 3D graphics services that deliver fast software-based rendering of the full 3D rendering pipeline (transformations, lighting, and rasterization), transparent access to hardware acceleration and a comprehensive, next-generation 3D solution for your PC. Direct3D provides access to advanced graphics capabilities of 3D hardware accelerators including z-buffering, anti-aliasing, alpha blending, mip mapping, atmospheric effects and perspective correct texture mapping.

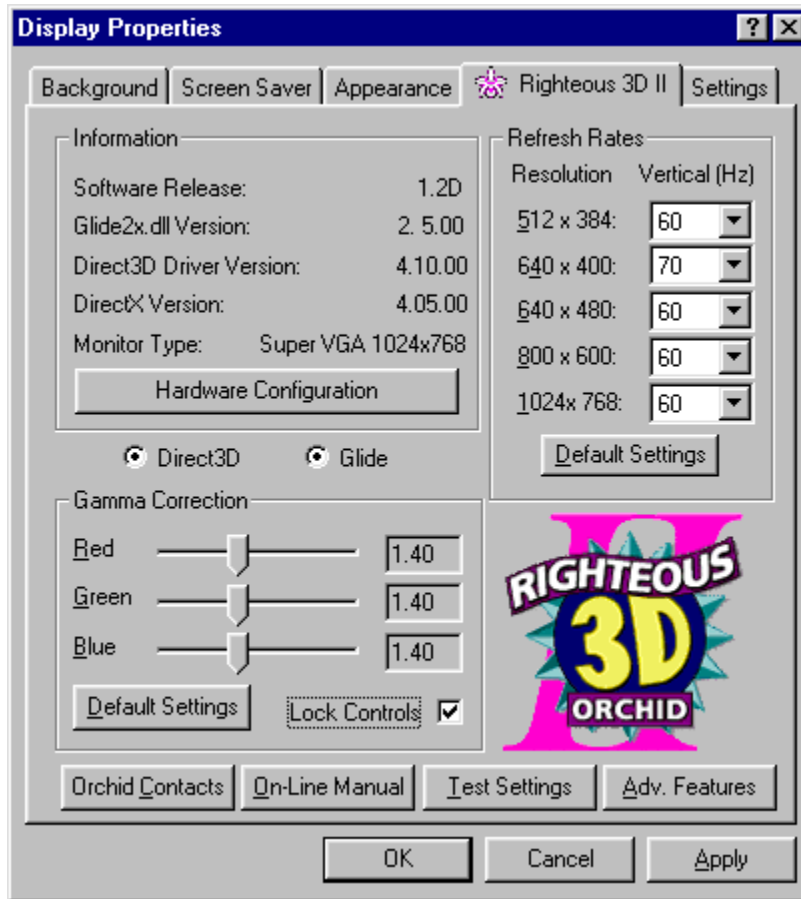
Tight integration with DirectX and ActiveX technologies allows Direct3D to deliver next-generation 3D graphics capabilities including video mapping and hardware 3D rendering in 2D overlay planes. Direct3D also integrates with DirectDraw to provide 2D drawing and texture services for 3D rendering.

# Configuring the Righteous 3D II

## Configuring Righteous 3D II for Windows 95

The Righteous 3D II Display Properties screen allows you to configure the refresh rate, gamma correction, displays driver information and the hardware configuration.

1. From the Windows 95 desktop, click on the Start button, select Settings, then select Control Panel.
2. From the Control Panel group, double-click on Display. The Display Properties screen appears.
3. From the Display Properties screen, click on the Righteous 3D II Setup tab. The following screen will appear.



4. Make your selections from the available options. When you are finished, click on OK or Apply to save your settings.

### Information

This selection displays information on the Righteous 3D II driver, the 3D API drivers and your monitor type.

### Refresh Rates

This selection allows you to select the refresh rates for the supported Direct3D resolutions. Resolutions available are: 512x386, 640x400, 640x480, 800x600, 960x720 (12MB only), and 1024x768. Before selecting the refresh rate, verify that your monitor is capable of supporting the setting.

**NOTES:**

- ◇ Righteous 3D II supports 3D game resolutions up to 800x600 with Z-buffering and up to 1024x768 without Z-buffering.
- ◇ SLI mode (two cards) supports up to 1024x768 with Z-buffering.
- ◇ The resolution supported is determined by the game. Z-Buffering is not selectable. It is a function that can only be used by game developers.
- ◇ For optimal performance, set the refresh rate as high as your monitor will support.

**Gamma Correction**

The Gamma Correction selection allows you to adjust the brightness of your display. You can change the value of the Gamma for an individual channel (Red, Green or Blue). For example, to set the Gamma for Red, move the scroll bar up or down to adjust the Gamma value.

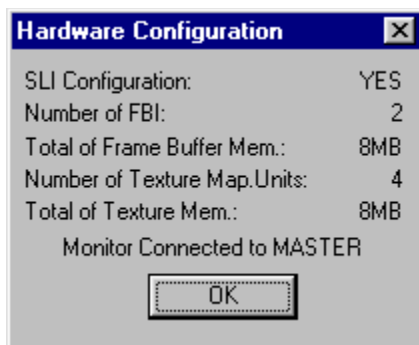
To test the Gamma value, click on the Test Settings button to view the new Gamma value applied in 3D mode. To return to the Righteous 3D II Display Properties screen, press the ESC key.

**Test Settings**

Click on the Test Settings button to view the Gamma Correction settings configured.

**Hardware Configuration**

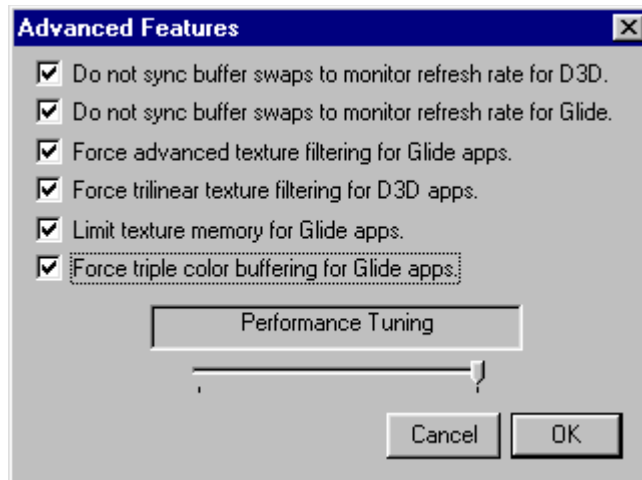
Select Hardware Configuration to display the number of FBI's (Frame Buffer Interface), total frame buffer memory, SLI configuration, number of texture map units and amount of texture memory. Click on the Hardware Configuration button to display the following screen.



**Advanced Features**

Click on the Advanced Features button to access features that will enhance the Righteous 3D II's performance.





*Do Not sync buffer swaps to monitor refresh rate* - when this box is checked, Direct3D and Glide applications will not synchronize buffer swaps with the vertical retrace signal of your monitor. The rendering performance may increase, however visual tearing may occur.

*Force advanced texture filtering for Glide apps* - when this box is checked, Glide will turn on Advanced Filtering mode. This will improve the quality of the MIPMapped graphics with a slight hit to performance.

*Force trilinear texture filtering for D3D apps* - when this box is checked, Direct3D will turn on Trilinear mode. This will improve the quality of MIPMapped graphics with no hit to performance.

*Limit texture memory for Glide apps* - when this box is checked, TMU memory will be 2MB for Glide games. Some Glide games may not work correctly with 4MB of texture memory.

*Force triple color buffering for Glide apps* - when this box is checked, Glide will turn on Triple Color Buffering. This will improve the color quality of the MIPMapped graphics with a slight hit to performance.

### **Direct3D**

Click on the Direct3D button to turn on Direct3D support for your monitor refresh rates.

### **Glide**

Click on the Glide button to turn on Glide support for your monitor refresh rates.

### **Default Settings**

Click on the Default Settings button to restore the default settings.

### **Online Manual**

This selection will give you access to the Righteous 3D II's online user's manual.

### **Orchid Contacts**

Click on this button to display information on how to contact us.



Displays information on the Righteous 3D II driver, the 3D API drivers and your monitor type.

Select the refresh rates for the supported Direct3D and Glide resolutions.

Adjust the brightness of your display by changing the value of the Gamma for an individual channel (Red, Green or Blue).

View the Gamma Correction settings configured.

Displays the hardware configuration setup of your Righteous 3D II card.

Click on this button to restore the default settings.



Click on this button to access the Righteous 3D II online user's manual.

Display information on how to contact us.

Accepts the changes.....

Exits without saving.....

Apply your changes before exiting.....

Configure advanced features that will enhance the Righteous 3D II's performance.

[Click here to turn on Direct3D support for your monitor refresh rates.](#)

[Click here to turn on Glide support for your monitor refresh rates.](#)



