EUT:VOODOO CARD

FCC ID:ILL152

BRITEK ELECTRONICS CO., LTD.

USER'S MANUAL

FEDERAL COMMUNICATIONS COMMISSION

This device complies with Part 15 of the FCC Rules. Operation 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.

NOTE

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. This equipment generates, uses and can radiated radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient o relocate the receiving antenna.
-Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.

Shielded interface cables must be used in order to comply with emission limits.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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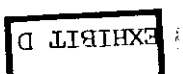


SOFTWARE LICENSE STATEMENT

International copyright laws protect the software described in this manual. You must not copy the software for any purpose other than making archival copies for the sole purpose of backing-up our software for protection against loss. The software must not be used on two or more machines at the same time.

LIMITED WARRANTY

SOFTWARE

We warrants the physical diskettes and documentation enclosed in this package to be free of any defects in material and workmanship for period of 60 days from the date of purchase. This warranty is limited to the original purchaser of the product and is not transferable. We will replace the defective products only when the original purchaser returns it to us. The remedy for this breach of warranty is limited to replacement only and shall not cover any damages, including but not limited to the loss of profit, special, incidental, consequential and other similar claims.

HARDWARE

We warrant to you that the hardware will be free from significant defects in materials and workmanship for a period of one year from the date of purchase. We sole and exclusive remedy with respect to defective hardware will be, at our option, to repair or replace such hardware.

DISCLAIMER

We can not warrant the performance or results you may obtain by using the software, hardware or documentation.
With respect to the use of this product, in no event shall we be liable for any loss of profit or any other commercial damage, including but not limited to special, incidental, consequential or other damages.

TRADEMARKS

Other trade names or trademarks belong to their respective owners.

CAUTION

Any changes or modifications to the equipment by the user not expressly approved by the guarantee or manufacturer could void the user's authority to operate such equipment.

WARNING

Only equipment certified to comply with Class B digital devices should be attached to this equipment, and must have shielded interface cables. Operation with a non-certified computer is likely to result in interference to radio and TV reception.

CONTENTS

1. INTRODUCTION

The ***Vulcan 2*** Game Accelerator has been implemented with **3Dfx's Interactive Voodoo 2** game accelerator. That provides the highest performance 3D solution with full PC compatibility for multimedia graphics acceleration.

1.1 General Feature Description

Feature	Product Model
	Vulcan 2
2D Graphic Engine	NO
Integrated DAC	135 MHz
3D Setup/Rendering Engine	3Dfx Voodoo 2 chipset
3D Frame Buffer Size	4 MB
3D Texture Buffer Size	8 MB
Total Memory Size	12 MB
PCI v2.1 Bus interface	YES
3D Glasses support	NO

1.2 3D Feature Description

- Perspective correct texture mapping
- Bi-linear and tri-linear texture filtering
- Level-of-detail (LOD) MIP mapping
- Sub-pixel and sub-texel correction
- Polygonal-based Gouraud shading and texture modulation
- Full 24-bit rendering, dithered to 16-bit RGB
- Multiple texture formats including 8-bit compressed and 8-bit paletted formats
- Full bi-linear blending of paletted and compressed textures
- Anti-aliasing
- Depth buffering (16-bit linear, 22-bit effective)
- Alpha blending
- Per-pixel special effects: fog, transparency, translucency
- Texture compositing, morphing, animation
- Linear frame buffer access
- Triangle Setup Unit (TSU)
- Strips and Fans

1.3 Features

Support for PCI 2.0 and 2.1 spec slots (newer 2.0 slots)
4 MB of Frame Buffer
Support for up to 2 Texture mapping units (TMU)
8 MB of Texture memory per TMU
Support for Scan Line Interleave (SLI) Allows for 2 Voodoo 2 boards to be connected and operate as one board, boubling fill rate and increasing supported resolutions.

1.4 Supported processors and architectures

PC Intel Pentium
PC Intel Pentium Pro
PC Intel Pentium II
Cyrix 6X86
Cyrix 5X86
AMD K5
AMD K6
Note: Some titles may require sufficient floating pit resources for optimum performance.Running these titles on a Cyrix or AMD CPU may yield poor performance.

1.5 Software Drivers List

- Windows95 or latest version
- Windows NT 3.5/4.0
- DOS 6.22 or latest version

1.6 System Requirements

- 120MHz (or faster) Intel Pentium™ CPU
- Vacant PCI slot
- Minimum 16MB RAM, 32MB Recommended
- For Glide: MS-DOS® revision 6.22 or higher, Windows® 95 or Windows® NT 4.0
- For Direct3D/DirectDraw (Windows ®95 or Windows ®98)

1.7 Direct3D Support

Direct3D support is provided for Windows95 Direct 3D is actually supported via DirectDraw, however Voodoo2 only supports Direct3D, full DirectDraw support is

not provided. Direct3D is a Microsoft supported API, please see www.microsoft.com/mediadev for more information.
Direct3D on Vulcan 2 supports the fulling resolutions under Windows95

Display mode		Frame Buffer Required	Refresh Rates	Color Depth
512X384 16bpp	No z-buffer	2MB	60(72*),75,85,120	24
	With z-buffer	2MB		
640X400 16bpp	No z-buffer	2MB	70,75,85,120	24
	With z-buffer	2MB		
640X480 16bpp	No z-buffer	2MB	60,75,85,120	24
	With z-buffer	2MB		
800X600 16bpp	No z-buffer	2MB	60,75,85,120	24(16 at 120hz)
	With z-buffer	4MB		
1024X768 16bpp	No z-buffer	4MB+SLI	60,75,85	16
	With z-buffer	4MB+SLI		

*=72 hz is used are place of 60hz when run in an SLI config
NOTE:The Direct3D driver for Voodoo2 supports Trilinear filtering when running with 2 TMU.

1.8 Glide Support

Glide is 3DFX native API which is supported by 3DFX interactive, Inc.Voodoo2 supports Glide 2.2 or higher based applications will run, however applications may not function with certain DAC configurations. (These earlier versions of Glide do not support other 3DFX hardware) Please see www.3dfx.com for more information.

Glide on Voodoo2 supports the following full screen resolutions under Windows95,Windows NT and DOS:

Display mode		Frame Buffer Required	Refresh Rates	Color Depth
512X384 16bpp	No z-buffer	2MB	60(72*),75,85,120	24
	With z-buffer	2MB		
640X400 16bpp	No z-buffer	2MB	70,75,85,120	24
	With z-buffer	2MB		
640X480 16bpp	No z-buffer	2MB	60,75,85,120	24
	With z-buffer	2MB		
800X600 16bpp	No z-buffer	2MB	60,75,85,120	24(16 at 120hz)
	With z-buffer	4MB		
1024X768 16bpp	No z-buffer	4MB+SLI	60,75,85	16

*=72hz is used is place of 60hz when run in an SLI config.

NOTE:Resolutions used by Glide can only be set by the application.Not all games support all resolutions or allows the use of a resolution other the 640X480.

Other API are supported by using Glide as a layer,these API include;Renderware,Brender and 3DfxGL (3Dfx GLQuake Driver)

1.9 Hardware Board Installation

Single Board Installation

1) Shutdown the system and turn off the PC
2) Open the computer and locate a free PCI slot.
3) Remove the cover for that slot from the computer chassis
4) Place the Vulcan2 board into that slot and screw the board in.
5) Replace the computer cover.
6) Place the VGA monitor cable into the Vulcan2 Card.
7) Plug the pass-thru cable from the Vulcan2 card into the 2D card

NOTE:Please see the troubleshooting section to resolve any hardware installation problems.

Dual Board Installation for Scan Line Interleave (SLI)

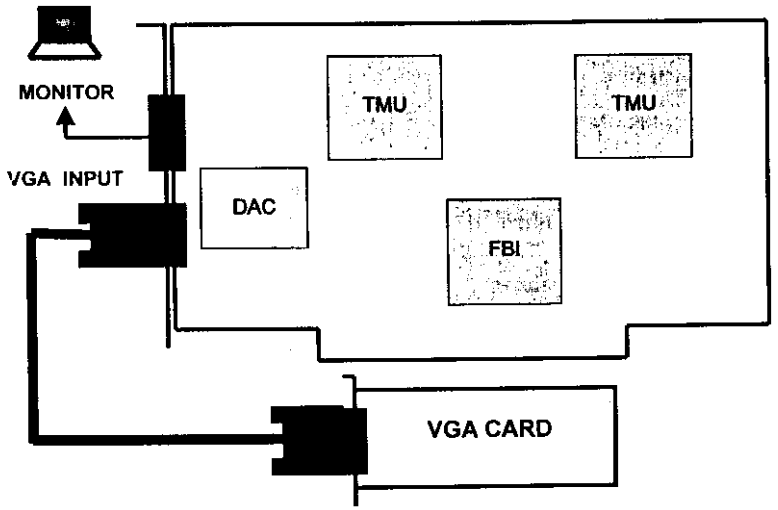
1) Shutdown the system and turn off the PC
2) Open the computer and locate two free PCI slots next to each other
3) Remove the cover for both slots from the computer chassis.
4) Connect the SLI connector to both boards.
5) Carefully position both boards into the slots then screw the boards in. Ensure the SLI connector is installed correctly.
6) Replace the computer cover.
7) Place the VGA monitor cable into either of the two Vulcan2 cards.
8) Plug the pass-thru cable from the Vulcan2(the card the monitor is plugged into)into the 2D card.

1.10 Advanced Information

For more information, please refers to 3Dfx web site at:
http://www.3dfx.com/

2 Hardware Information

2.1 Configuring the *Vulcan 2*



2.2 Understand your *Vulcan 2*

1. **Monitor Connector:** This connector accepts the video cable from the monitor, where the *Vulcan 2* accelerator is attached.
2. **VGA input Connector:** This connector accepts the pas-thru cable from the VGA card (The cable is bundled in BOX.).

3. SOFTWARE UTILITIES

To facilitate the smooth installation of the optimized display drivers and utility software provided with your multimedia accelerator, you should read the instructions in this section carefully prior to attempting installation. The optimized display drivers for your multimedia accelerator may have been provided on diskette or compact disk (CD). If you received diskettes with your accelerator and have not already done so, first make a backup copy of the driver installation diskette(s) and store the original in a safe place.

Refer to your operating system manual for details on how to duplicate a diskette. You should use the backup copy you have made for all subsequent steps. If you received driver CD with your accelerator, see **CONTENTS.TXT** for more detail.

3.1 Windows 95 Installation

1. Install Windows 95 in the usual way. When installation has completed, Windows 95 should be booted on the VGA.
2. During the booting of Windows 95, a message of "**New Hardware Found PCI Multimedia Video Device**" must appear on the screen.
3. Insert the Windows 95 driver diskette into floppy disk A, or put **VIEWTOP** Driver CD into CD-ROM drive.
4. Select the "**Driver from Disk Provided by Hardware Manufacture**" and then select the "**OK**" button. A sub-window with a title named "**Install From Disk**" will be pop on your screen.
5. Specify the path **A:** or **X:\ Voodoo\ Vulcan2\ Win95** and select the "**OK**" button in the "**Install From Disk**" window (X:CD Driver).
6. After all new drivers are installed; a sub-window will be displayed asking you to restart Windows 95 now.
7. Remove the diskette from floppy drive **A** and than press "**Yes**" button to restart the Windows 95 now. Otherwise, use the normal procedure to restart Windows 95 (from the Start menu, click on the "**Shut Down**" icon and select the "**Restart the Computer**" option).

3.1.1 DirectDraw

The driver contains support for hardware optimized DirectDraw functionality, which is used by DirectDraw games as well as by the Direct3D

The driver is compatible with DirectX. Please obtain a release of this software if you require DirectDraw/Direct3D acceleration.

3.1.2 Direct3D

The driver contains a Direct3D HAL driver. This enables hardware acceleration of Direct3D applications. Some features are currently still under development and there are limitations which should be understood before attempting to run Direct3D or Retained Mode Direct3D programs. Most of these features do not affect current Direct3D/DirectDraw applications.

3.1.3 Other API

Other API are supported by using Glide as a lear, these API include: Renderware, Brender, GLQuake Driver (3Dfx GLQuake Driver)

3.2 Windows NT 3.5x/4.0

1. Insert the Windows NT driver diskette into floppy disk A, or put **VIEWTOP** Driver CD into CD-ROM drive.
2. Select **\ Voodoo\ Vulcan2\ Winnt** directory
3. Run **V2nt.exe**
4. It will lead you to setup Glide driver in Windows NT.

- Before installing the video driver, make sure Windows NT is installed in VGA mode and work fine.
- Please install the Windows NT service pack 3 package first (you can download these drivers from Microsoft web site), or the driver may not work smoothly.

3.3 Glide 3D driver

Glide supports Windows 95, Windows NT 3.51, 4.0, MS-DOS, and MAC O/S. There is no native support in the development release for OS/2™ or Linux.

- Titles that use Glide Version 2.11 and earlier will not work with your 3Dfx *Vulcan G*. A Glide 2.3 or newer version title must be obtained.
- Resolution used by Glide can only be set by the application. Not all games support all resolutions or allows the use of a resolution other than 640x480

4 CONTROL PANEL APPLET USAGE

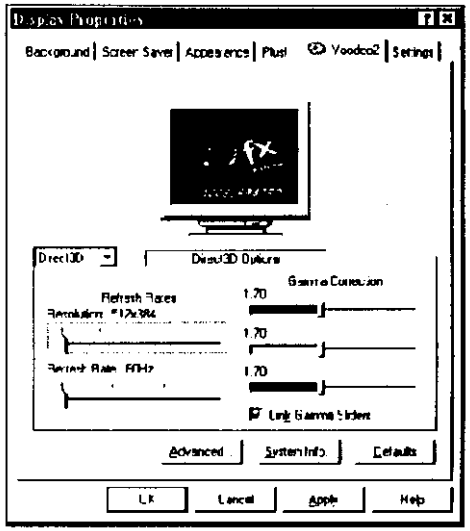
Nearly all settings pertaining to Voodoo2 can be adjusted with the Display Properties Control Panel and
the Gamma taskbar applets. The Windows 95 Retail Drivers install the Voodoo2 Control Panel
and by the Windows NT driver kit. Any options that cannot be adjusted via the control panel or options
that can be manually adjusted are listed in the next section entitled, adjusting Settings Manually

Voodoo2 Control Panel

To open the Control Panel applet, click Start, Settings, and Control Panel Display.

Voodoo2 Page

The Voodoo2 page is as follows:



Options available on this page:

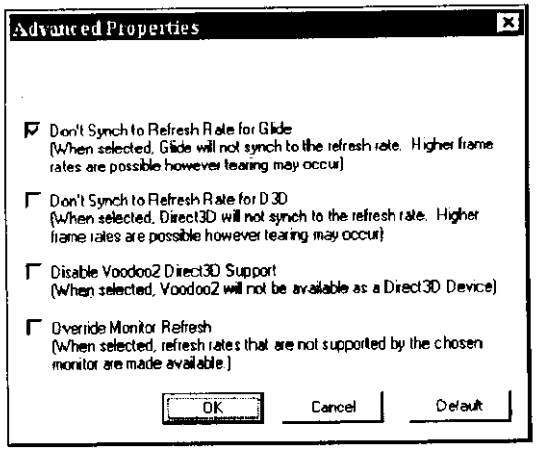
The drop-down box chooses which API to set Refresh Rate and Gamma settings

for. The initial setting is Direct3D. To adjust Glide Refresh Rate and Gamma Settings, switch the drop down from □irect3D to Glide? The selected API is displayed to the right of the drop-down.

Refresh Rates	**Description**
Resolution (Value on Slider)	Displays which resolution the refresh rate is to be changed for.
Refresh Rate (Value on Slider)	Displays the refresh rate to use with the selected resolution.
Gamma Correction	**Description**
Red Slider (Value on Slider)	Adjusts Red Gamma setting.
Green Slider (Value on Slider)	adjusts Green Gamma setting.
Blue Slider (Value on Slider)	adjusts Blue Gamma setting.
Link Gamma Sliders	Links the Red, Green and Blue Gamma sliders together.
Advanced...	Opens the Advanced Properties
System Info....	Opens a Dialog Box displaying the Voodoo2 Configuration.
Defaults	Reverts all selections to Default Settings.

Advanced Properties Dialog Box

The Advanced Properties dialog box is as follows



Advanced Properties	**Description**
Don Synch to Refresh Rate for Glide	Turns off Vsync for Glide
Don□ Synch to Refresh Rate for D3D	Turns off Vsync for Direct3D
Disable Voodoo2 Direct3D Support T	urns off Voodoo2 Direct3D Support
Override Monitor Refresh	Overrides Monitor Refresh Rates
OK	Use selected options and return to the Voodoo2 Page
Cancel	Cancel any selections and return to the Voodoo2 Page
Default	Reverts all selections to Default Settings

Internet Support

If you need more information about VIEWTOP series products.
Please check our Internet web site.

http://viewtop.com/

You can download the latest version of driver or update the bios from our web site.

Customer Feedback

If you have any idea or suggestion about our products, please kindly tell us. We will appreciate your kindly suggestions and ideas.

You can contact britek02@ms6.hinet.net for internet technical support.

Thanks again for buying our product.

We wish you can enjoy it and love it.