



## **Release Notes**

### **3Dfx Interactive Glide™ 2.43 Driver**

Document Revision 2.43

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## **The 3Dfx Interactive Software Developer Kit**

This document is part of the 3Dfx Interactive Software Developer Kit (SDK). The 3Dfx Interactive SDK documentation consists of:

- **DOCS\GLRELNO.DOC - Release Notes: Glide 2.43**
- DOCS\D3DRELNO.DOC - Release Notes: 3Dfx Direct 3D™ 2.13
- DOCS\GPGUIDE.DOC - Glide Porting Guide: Voodoo Rush™ 2.43
- DOCS\INSTALL.DOC - Installation Guide: 3Dfx Interactive Reference Boards and Related Software 2.6



## **General Information**

Welcome to the world of 3Dfx Interactive! We are releasing our latest product for your pleasure, and we hope you enjoy it!

This distribution contains Version 2.43 of 3Dfx Interactive Glide™. This version contains many significant changes that include support for Voodoo Graphics™, Voodoo Rush™, performance optimization and bug fixes. This document will describe the installation procedure for the drivers and the current status of the driver.

### **Important Tips**

The following information highlights some known issues and alternative solutions. We will provide fixes for these issues in future releases.

### **Using Glide 2.43 on Pentium® Pro and Pentium® II Systems**

This version of Glide is fully compatible with Pentium® Pro and Pentium® II processors.

### **Direct3D Mutual Exclusion**

- Glide and Direct3D applications are mutually exclusive. When a Glide application is running, Direct 3D applications will not be allowed to start, and vice versa. An application using both DirectDraw and Glide on Voodoo Rush cards must select the DirectDraw HEL, not HAL.

### **Multiple Glide Windowed Applications**

- Only one windowed Glide application can be running at any given time.



## Hardware Support

3Dfx Interactive Glide 2.43 support is available for the following products. Those that have been tested with this release are shown in **bold** type.

<b>OEM</b>	<b>Product Name</b>	<b>Technical Support</b>
Alliance	<b>AT3D Reference Design</b>	www.alsc.com
Alliance	<b>AT25 Single Planar</b>	www.alsc.com
Ask	Innovision Cyber 3DX5000	
A-Trend	Helios Voodoo	www.atrend.com
Biostar	Venus 3D Graphics	www.biostar.net
Biostar	Venus 3D Rush	www.biostar.net
Britek	Viewtop 3D Voodoo-1	www.britek.com.tw
Canopus	Pure 3D	www.canopuscorp.com
Deltron	Flash 3D™	www.deltrontech.com
Deltron	Flash AT3D Rush	www.deltrontech.com
Diamond	<b>Monster™ 3D</b>	www.diamondmm.com
Express	3D Acceleration	
Macronix	<b>MX86251</b>	www.macronix.com
Miro	Highscore-3D	www.miro.de
Intergraph	<b>Intense 3D™ Voodoo</b>	www.intergraph.com
Guillemot	MAXi Gamer 3D	www.guillemot.com/france/
Hercules	<b>Stingray™ 128/3D</b>	www.hercules.com
High Tech	HIS-Arcade3D-G	
Jazz	Adrenaline Rush 3D	www.jazzmm.com
Orchid	<b>Righteous 3D™</b>	www.orchid.com
Quantum 3D	<b>Obsidian &amp; Obsidian Pro</b>	www.quantum3d.com
Quantum 3D	<b>Ventana</b>	www.quantum3d.com
Skywell	Magic 3D	www.skywell.com.tw
Techworks	Power 3D	www.techworks.com

## Operating Systems

Glide 2.43 supports Windows® 95, Windows® NT 4.0, MS-DOS®, and Mac OS™. There is no native support in the development release for OS/2®. There is an unsupported Linux Glide library.

### DOS Notes

If you are running within DOS (*not* a DOS Prompt or DOS Shell under Windows for Workgroups, Windows 95, or OS/2) and you have less than 24MB of RAM you must set the environment variable *DOS4GVM* to the value 1.

```
C:\>SET DOS4GVM=1
```



#### Windows 95 Notes

If you are running under Windows 95 and you have less than 24MB RAM you must change your DOS properties settings. The value for DPMI memory must be changed from *AUTO* to *16384*. The initial environment setting must also be changed from *AUTO* to a minimum of *4096* for some applications.

#### Windows NT Notes

Glide programs built for *DOS4GW* cannot be run under Windows NT.

### Changes in Glide Version 2.43

#### API Changes

There have been no changes to the Glide API since the last release.

#### Driver Changes

1. *glide2x.dll* has been replaced with an updated version. You can determine the version number, target graphics chip set (Voodoo Graphics or Voodoo Rush), and target OS (Windows 95 or NT) by examining the properties of the file.
2. *glide2x.lib* has been replaced by an updated version corresponding to *glide2x.dll*.
3. Changes were made to the Voodoo Rush FIFO code to fix a problem where a small number of boards overheated unless they were underclocked.
4. Changes were made to the PCI library to fix a problem where on a small number of systems the installer failed to detect Voodoo (Graphics or Rush) boards.

#### Bug Fixes

- 824: SLI cards now support 800x600 resolution
- 825, 826: fixed a PCI library problem that was causing problems with Outlaws and Formula 1.
- 812: fixed a problem causing grSstQueryBoards to fail under Windows NT

#### Known Problems

- Erratic behavior, including hangs and forced rebooting have been observed on systems incorporating the Opti Viper-M chipset, e.g. certain models in the IBM Aptiva series. The best solution is to update the BIOS, however disabling power management has been found to work around the problem.

### Changes in Glide Version 2.42

#### API Changes

There have been no changes to the Glide API since the last release.



### Driver Changes

1. *glide2x.dll* has been replaced with an updated version. You can determine the version number, target graphics chip set (Voodoo Graphics or Voodoo Rush), and target OS (Windows 95 or NT) by examining the properties of the file.
2. *glide2x.lib* has been replaced by an updated version corresponding to *glide2x.dll*.
3. Anti-aliased points, lines, and triangles have been optimized on Voodoo Graphics.
4. Triple buffering is now supported on Voodoo Rush, provided sufficient memory is available.
5. On Voodoo Rush systems, the refresh rate is forced to 60Hz. The refresh rate parameter in *grSstWinOpen* will be ignored.
6. The installation procedure now supports heterogeneous multi-head configurations. If more than one Voodoo card is found on the system, you will be prompted for the one on which the drivers are to be installed.

### Bug Fixes

Although the primary focus of Glide 2.42 is improved Voodoo Rush performance, several bugs were also fixed, as noted below:

- 635: header files have been changed to work with C++
- 638, 654, 666, 760: numerous application-level problems with the Glide test suite have been corrected
- 697: *grSstPerfStats* now works correctly on Voodoo Rush. It previously returned random data.
- 710: *grSstQueryBoards* now reports the number of boards found compatible with this version of glide. I.e., an Voodoo Graphics version of *glide2x.dll* will report only the number of Voodoo Graphics boards found.
- 735: *GR\_FOG\_WITH\_ITERATED\_Z* is now accepted as a valid argument to *grFogMode*.
- 764: *grDrawPoint* now plots points with odd integral coordinates correctly. They were being incorrectly rounded to even coordinates.

## Changes in Glide Version 2.4

### API Changes

There have been no changes to the Glide API since the last release.

### Driver Changes

1. *glide2x.dll* has been replaced with an updated version. You can determine the version number, target graphics chip set (Voodoo Graphics or Voodoo Rush), and target OS (Windows 95 or NT) by examining the properties of the file.
2. *glide2x.lib* has been replaced by an updated version corresponding to *glide2x.dll*.
3. *fxmemmap.vxd* has been replaced with an updated version, and its revision number updated to 1.2.



4. Performance improvements have been made to the Voodoo Rush driver in the following areas: overall Pentium Pro and Pentium II performance, texture download (all processors), and triangle performance (all processors).

#### Updated Documentation

The *Glide Programming Guide* and the *Glide Reference Manual* have been updated. Documentation for windowed Glide application that first appeared in Glide 2.2 are enhanced, and references to obsolete routines have been removed. There is also a new section in the Programming Guide describing multi-pass fog techniques.

#### Bug Fixes

Although the primary focus of Glide 2.4 is an improved performance for Voodoo Rush and windowed Glide applications, bug fixes were also incorporated. Significant bug fixes are noted here:

1. *grDrawPlanarPolygon* is now fully functional. Please note that all parameters to be interpolated must be planar, not just the vertices.
2. Occasional hangs caused by *guDrawTriangleWithClip* have been fixed.
3. Compiler definition for IBM Visual Age C/C++ have been added to *3dfx.h*
4. Full screen resolution modes of 512×384, 640×480, and 800×600 for Voodoo Rush are now supported.
5. A box-like artifact that appeared around light textures in the *demoroom* program has been corrected.

We no longer ship debug .DLLs. They will be distributed to Total Immersion members through 3Dfx Interactive Developer Support.

Here is the detailed list of bugs addressed in this release

- 142: Added VXD version checking to Glide. Running a Glide application will fail if the VXD version is lower than the Glide library expects.
- 296: *grSstOrigin* is now documented in the Glide Reference Manual.
- 484: Triangles drawn with *guDrawTriangleWithClip* that have edges parallel (or nearly so) to the clipping rectangle no longer cause hangs.
- 512: a box-like artifact no longer appears around light textures in Demoroom on Voodoo Rush cards.
- 514: a message is now displayed if a Glide application loads a Glide DLL that does not display to the accelerator installed (e.g. loading an Voodoo Graphics DLL on a Voodoo Rush system).
- 517: A swap command is always followed by a read on SLI configurations.
- 523: added definitions for IBM Visual Age C/C++ compilers to Glide *3dfx.h*.
- 528: fixed visual artifacts associated with 512×384 display modes on Voodoo Rush.
- 545: *grDrawPlanarPolygon* and *grDrawPlanarPolygonVertexList* now work correctly.
- 554: Tomb Raider no longer fails on Voodoo Rush.
- 556: Fixed flickering problem observed with Test25 on Voodoo Rush cards.
- 558: Glide now prints an error message if an out-of-date VXD is loaded.



- 562: Fixed problem that caused Tomb Raider to display vertical lines.
- 570: Fixed a problem that caused GLQuake not to run 800x600 on a 4MB (6MB Total) Voodoo Rush board. The quake driver was preventing SST96 cards from running at 800x600.
- 578: Removed *guFbReadRegion* and *guFbWriteRegion*. These functions had dependencies on *grLfbGetReadPtr* and *grLfbGetWritePtr*, which were obsoleted starting with Glide 2.2.
- 580: Calling *grLfbLock* with *GrLfbInfo.size* element set to an invalid size now returns an error code.
- 581: Value being returned in the *GrLfbInfo\_t.writeMode* element after *grLfbLock* is now correct.
- 593: Fixed texture corruption observed in Tomb Raider.
- 594: *grSstPerfStats()* now returns accurate data on SLI systems.
- 599: Voodoo rush triangle setup code was optimized.
- 613 & 614: The correct information now appears on the file properties of *glide2x.dll*.
- 632: Fix mutual exclusion problem in *dxdrv.c* that was preventing Outlaws from running correctly.
- 637 & 651: modified Glide test programs to handle window resize correctly.
- 643: 512x384 and 800x600 full-screen resolutions are now supported under DOS on Voodoo Rush.

### Changes in Glide Version 2.3

#### *Using Dual Video Cards Simultaneously*

Glide now supports Voodoo Graphics and Voodoo Rush operation simultaneously in the same system, with certain restrictions. This can be achieved by arranging the search path to select the correct *.DLL* when an application is executed.

### Changes in Glide Version 2.2

These changes, originally described in the Glide 2.2 release notes, are repeated here for convenience. Some subroutines have been added in Glide 2.2, and in some cases, these replace routines in previous versions of Glide. As a result there may be compatibility issues with existing applications. Modifying existing Glide code will result in compatibility with future products and support windowed Glide applications with minimal effort.

#### **New Routines**

Several new routines have been added to support windowed Glide applications for Voodoo Rush, and to ensure compatibility with future hardware.

#### ***grSstWinOpen***

Allows for Glide in a window.

#### ***grSstWinClose***

Allows Glide applications to shut down and restart 3D engine correctly.



***grSstControl***

Used to inform glide of system events.

***grLfbLock***

Changes the paradigm for LFB access. LFB access needed a notion of variable stride as well as a locking notion for applications running in a window.

***grLfbUnlock***

See grLfbLock.

***grLfbWriteRegion***

Locks are discouraged whenever possible in favor of optimized host memory BLTs which can be hardware accelerated.

***grLfbReadRegion***

Read-lock frame buffer RAM on SLI system is prohibited. Reading rectangles from frame buffer RAM on SLI system at the driver level is permitted.

**Routines Removed**

The following routines have been removed. Condition for removal vary and are described in detail in the porting guide. In most cases, the routines represent areas where Glide's old paradigms were incompatible with windowed or full-screen operation where Glide render device is also the primary display adapter.

- *grSstOpen*
- *grSstPassThru*
- *grLfbBegin*
- *grLfbEnd*
- *grFbWriteRegion*
- *grFbReadRegion*
- *grLfbOrigin*
- *grLfbwriteMode*

## Web Information

To fully utilize our resources, visit the 3Dfx Interactive web site at <http://www.3dfx.com/> Here, you will find useful links to the following:

*\*We encourage you to visit our news server [news://news.3dfx.com](http://news.3dfx.com), or the web sites listed below. We always strive to provide the best support for our partners.*

- Products: <http://www.3dfx.com/voodoo/products>
- FAQs: <http://www.3dfx.com/voodoo/faq.html>



- Game and Developer Information: <http://www.3dfx.com/developer/>

## **Development Support**

### **Total Immersion Program**

*Total Immersion*, the 3Dfx Interactive Developer Program, is a collection of the top industry developers and publishers optimizing the hottest retail games for 3Dfx Interactive technology. Like the best games, the Total Immersion program is totally interactive and real time: We want your feedback so we can help make your products - and ours - truly great. Sign up for Total Immersion and become part of the inner circle of the new software elite. You'll get to hang out with some of the best minds in the business and gain access to the big-league PC and coin-op markets via our roster of heavy-hitting industry partners.

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- A high-bandwidth, low-latency communication channel with 3Dfx Interactive partners, customers and other Total Immersion developers
- Software Developer Kits (SDKs) to help you design and enhance your software using the advanced features found in 3Dfx Interactive products
- Dedicated engineering support for your most radical game and tool development efforts via phone, e-mail, private newsgroups, and private access web site

For an application to the 3Dfx Interactive Developer Program or more information about Total Immersion, please e-mail [devprogram@3dfx.com](mailto:devprogram@3dfx.com). Be sure to include all relevant contact information.

## **Support Environment**

### **Resource Page**

To check out some cool sites that use the Obsidian technology to deliver "affordable reality," visit:

- SAIC SIMTools: <http://members.aol.com/simtools/index.htm>
- Gemini Technology: <http://www.gemtech.com>
- MetaVR: <http://www.metavr.com/3dfx.htm>
- Datapath Technologies: <http://www.datapath.co.uk>
- Systems Technologies: <http://www.systemstech.com/paramain.htm>

### **Development & Deployment**

As a member of Total Immersion, game developers have access to dedicated engineering support for your most radical game and tool development efforts via phone, e-mail, private newsgroups, and private access web site. Technical and development issues are handled by a well-versed and knowledgeable



software engineering team. In addition to basic technical programming questions, the developer support team is on hand to aid in game development consulting. Utilize our staff to get the full suite of 3D advanced features from your 3Dfx optimized game.

For an application to the 3Dfx Interactive Developer Program or more information about Total Immersion, please e-mail [devprogram@3dfx.com](mailto:devprogram@3dfx.com). Be sure to include all relevant contact information.

## **Bug Reporting**

There is a new Bug Report form on the 3Dfx Interactive Developers' web site. Please report problems using this form. If you are unable to access the web site and you must send e-mail, there is a form included on the CD. Look in `\docs\3dfxbugs.txt` for the proper format. You must use the keywords "Glide Bug" in the subject line for your submission to be processed.

### **Developer Bug Submission Form**

#### **3Dfx Interactive, Inc.**

#### *REQUIRED INFORMATION:*

Submitter:

Company:

Severity:

1=system crash/hang

2=feature severely broken

3=feature abnormality

4=cosmetic/enhancement request

Hardware Product:

#### **(3Dfx Board Type)**

Revision:

#### **(Board Revision number)**

Software Product:

#### **(3Dfx Software, i.e., ATB, D3D, Glide, etc.)**

Version:



**(Software Version number, i.e., 2.0b, 2.0b1, etc.)**

OEM Video Board Vendor:

**(Name that card)**

Synopsis:

**(A brief description of the defect)**

Description:

**(A detailed description, including steps to recreate)**

Attached Files:

**(Files needed to recreate the problem)**

System:

**(System information for the computer used: processor type, speed, chip set, motherboard manufacturer, memory size)**

Operating System:

**(Windows 95, NT, DOS...)**

Compiler:

**(Watcom, MSVC...)**

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