

Demo Version 1.0 Troubleshooting Guide

This troubleshooting guide will provide you with information about *Star Wars®: EPISODE I Racer™* **Demo**. You will find solutions to common problems that were encountered while running the game and DirectX in the Windows 95/98 Operating Systems.

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-1- General Information

Supported Operating Systems

To be able to run *Racer*, you must have Windows 95 or 98 as your operating system and your computer hardware must be 100% DirectX 6.1 compatible. MS-DOS, Windows 3.1x, Windows NT 3.x, Windows NT 4.0 and OS/2 are not supported. For more information on DirectX, see Section 5 of this Troubleshooting Guide.

Minimum Requirements

Computer: 100% Windows 95/98 DirectX compatible computer required.

CPU: Pentium class 166 MHz or faster CPU required. 200 MHz or faster

recommended.

Memory: 32 MB RAM required. 64 MB or higher recommended.

Graphics Card: 4MB PCI or AGP Direct3D compatible graphics accelerator card required.

CD-ROM: Quad speed IDE or SCSI CD-ROM drive required.

Sound Card: 100% Windows 95/98 DirectX compatible 16-bit sound card required.

Input Device: 100% Windows 95/98 compatible Mouse, Keyboard or Joystick required.

Optional support for most DirectInput compatible Force Feedback devices.

DirectX: Microsoft DirectX 6.1 is included on this CD and must be installed to play

Racer. Please refer to **Installation** and **DirectX Setup** in this Trouble-

shooting Guide for more information about DirectX.

NOTE: Your system may require the "latest" Windows 95/98 drivers for your

particular hardware.

Installation: Installation requires 40 MB free hard drive space. It is recommended that

you

have an additional 50 MB of free space available for the Windows swap file.

Optional Support

Force feedback controllers supported such as steering wheels and joysticks. 3D sound support using Aureal A3D™ 2.0 and Microsoft DirectSound 3D™.

Multiplayer Support

Local Area Network Play: Supports up to 8 players via IPX Local Area Network in the full version of *Racer*.

-2- General Troubleshooting

Racer was designed to run under Windows 95/98 with DirectX 6.1. If the game unexpectedly freezes up, returns you to your desktop, or if you experience any other severe problems, you should try to properly shut down Windows and reboot your computer. (As a rule, you should never turn off your computer while the hard drive is active). This will help to prevent possible problems related to the error that you have experienced. It is especially important to reboot your computer before trying any of the troubleshooting tips included in this guide or before attempting to restart the game. NOTE: If your computer reboots into Safe Mode, go to Shut Down and choose Restart the Computer. This will put you back into Windows' normal operation mode.

Why Can't I Get the Game's Launcher to Respond?

- Your CD-ROM drive may have stopped responding.
- There may be a hardware conflict in your system.

Your CD may be scratched or dirty.
 Please consult CD-ROM Drive Issues (Section 8) in this Troubleshooting Guide for more information.

I Can't Launch the Game. What Do I Do Now?

- Check **DirectX Setup** (Section 5) in this Troubleshooting Guide to find out how to see if your computer hardware is DirectX 6.1 compatible.
- Check to see if your Windows desktop color palette is set to 16-bit color. On some video cards, other desktop color palette cause problems in *Racer*. Please consult Video Issues (Section 6) for more information.
- Check to see how much room is available on your hard drive to make sure that you have
 enough free space for *Racer* to run. It is recommended that you have an additional 50
 MB of free space after installing the game for the Windows swap file.
- Check to see if you have any other applications running, such as memory managers, screen savers, or virus protection programs. Any of these may interfere with *Racer*. Please refer to *Running Other Programs in the Background* in this section for more information.
- The Racer CD may be dirty or scratched, or the CD-ROM drive may be having trouble reading the Racer CD. Please check CD-ROM Drive Issues (Section 8) for more information.
- The letter of your CD-ROM drive may have changed since you installed *Racer*. If this occurs, you will need to uninstall the game and reinstall it with the new drive letter.
- You may have a corrupted installation. Try uninstalling and reinstalling the game.

What Should I Do if my Computer Goes to a Black Screen or Locks Up? If you end up at a black screen or the game appears to lock up, please press ESC, SPACE BAR, and ENTER before trying anything else. If this fails, press CTRL-ALT-DEL once and choose END TASK on *Racer*, which will take you back to the desktop. If you do not see the dialog box after pressing CTRL-ALT-DEL, press ENTER twice and this should take you back to the desktop. Then restart your computer and try running the game again.

Running Other Programs in the Background

Generally, we have found that it is not a good idea to run any other programs in the background while playing *Racer*. Please turn off any active screen savers while running *Racer*, as they may interrupt the game and cause problems. Various video, sound, or memory problems may occur if other programs are running, including virus-detection utilities. You may also need to disable or close programs that start from your StartUp folder which were added to load programs automatically when Windows is started, such as the Microsoft Office Toolbar. Some of these programs display icons on your taskbar. If you have icons on your taskbar, right-click on each of them and select the option to disable, unload, or close them before running *Racer*. The next time you start your computer, these items will load once more and the icons will return. If you cannot disable them from the taskbar and you experience problems running *Racer*, you may want to remove the program shortcuts from the StartUp folder. For information about how to do this, please consult Windows Help.

MS-DOS Memory Managers

If you are running any memory managers, such as EMM386 or QEMM, you may experience problems when running *Racer*. Windows 95, Windows 98 and *Racer* are protected mode programs and may have problems running with memory managers loaded. However, we do not recommend making any changes to your system configuration without first contacting your computer manufacturer.

Power Management

If your computer is equipped with a Power Management feature you may want to disable it. Please consult your computer's documentation or the manufacturer for assistance in doing this. When Power Management is enabled, the following problems may occur:

- The game may crash or go to a blue screen when sleep mode activates.
- The Windows mouse cursor may appear when you come out of sleep mode.
- The monitor may go to a black screen while you are playing.

Desktop Color Palette and Resolution

If you experience problems running the game, we recommend that you set your desktop **Color Palette** to **High Color (16 bit)** and the **Desktop Area** to **640x480**. When playing *Racer* with your desktop set to a color palette other than 16 bit, some video cards may experience problems launching the game, difficulty when task switching, or other graphics problems. In most cases, switching to High Color solves these problems.

Changing Your Desktop Color Palette and Resolution

Racer is designed to run optimally in High Color (16-bit). To change your desktop color palette and resolution:

- Right-click on the desktop.
- Choose **Properties** from the pop-down menu.
- Click on the Settings tab.
- Choose High Color (16-bit) under Color Palette
- Move the slide-bar under Desktop Area to 640x480 or 800x600.
- Click **OK** to close this window.
- If your computer prompts you to restart, click on Yes.

-3- Installation

Installing Racer

Please check your available hard drive space before installation. Installation requires 40 MB of free hard drive space on your computer. You should always have at least an additional 50 MB of free space available on your hard drive after installation for your *Racer* files and the Windows swap file. If you have too little free space, you may be unable to start the game. Too little free space on a hard drive could also affect other applications, such as word processors that need room to spool print jobs.

NOTE: It is always a good idea to check and write down what sound and video hardware you have in your computer before installing DirectX. To do this:

- Right click on the My Computer icon on your desktop.
- Choose Properties.
- Click on the Device Manager tab.
- Look at **Display Adapters** and **Sound, Video, and Game Controllers**. Write down your hardware devices in case you have to manually restore your video or sound card drivers.

Installing DirectX 6.1

During the installation of *Racer*, you will be prompted to install DirectX 6.1 if it is not already installed on your system. Microsoft DirectX is an application that allows *Racer* to have instant access to your system hardware in the Windows environment. This will help the game take advantage of advances in Direct3D, DirectSound, and DirectInput capabilities that will be used during gameplay. For more information, please consult **DirectX Setup** (Section 5) of this Troubleshooting Guide.

Adding the Sound Recorder, Volume Control and Audio Compression

The Sound Recorder, Volume Control and Audio Compression are necessary components of Windows when using DirectX 6.1. If they were not installed when Windows was set up, you will want to add them before installing *Racer*. DirectX will ask for your Windows CD during installation if it does not find these components, which may cause the DirectX installation to be incomplete and you may see the error **DXSetup Error -7** or **DXSetup Error -8** after changing to the Windows CD. If this happens, reboot your computer and follow these steps.

To add these Windows components:

- Go to the **Start** button on your taskbar.
- Choose Settings.
- Choose Control Panel.
- Double-click on Add/Remove Programs.
- Click on the Windows Setup tab.
- Scroll down to Multimedia and select Details.
- Check the boxes next to Audio Compression, Sound Recorder and Volume Control.
- Click OK, then OK again to close both of these windows. You will be prompted for your Windows CD. Insert the Windows CD and follow the prompts to complete installation of these components.

When these steps are complete, you may continue with the installation of DirectX 6.1.

Uninstall Warning

When you uninstall *Racer*, you may receive a warning stating that the uninstaller may not have removed everything. Here are a few reasons why you may see this message:

- The UnInstallShield may have left the *Racer* program group in the start menu. Rebooting you computer will remove them after uninstalling.
- You have other LucasArts games on your computer. The "LucasArts" directory will not be removed from your computer because the other LucasArts games are stored here.
- You may have chosen to keep your Racer.

Can I Move the Racer Demo Folder after I Install?

If you decide to move the *Racer* Demo to a new directory, uninstall first, then reinstall to the new location. Simply moving the *Racer* Demo folder will cause the game to stop working.

If you wish to keep your racing progress, use either the game's launcher or the **Uninstall Racer Demo** shortcut in the Start Menu to uninstall the game and make sure that the **Keep Racers** box is checked. If you wish to keep your joystick and control settings, make sure that the **Keep Settings** box is checked. Install **Racer** to the new location, then copy the old **data** folder to that location.

-4- Performance

Improving Performance of Racer

The following are a few suggestions that may free up system resources and improve performance of *Racer*.

To run *Racer* with optimal performance:

- No other programs should be running in the background.
- System resources should be at least 85% free.
- There should be at least 50 MB of free hard disk space after installation.
- Your CD-ROM drive should have a sustained data rate of at least 600 Kb per second.

To check for specific information on the items listed above, please consult the Table of Contents of this guide for the appropriate section numbers for any of the topics you have questions about.

Close out of all other programs before running *Racer*. This includes virus scanning, word processing and Internet programs. Simply disabling these programs will not help, as the programs will still use resources that are needed to play *Racer*. If you experience problems completely closing programs that are running, consult the documentation for those individual programs. This is a common problem when trying to completely disable virus scanning software.

Optimizing Performance in Racer

Disabling Force Feedback

If you are experiencing performance problems in the *Racer*, we recommend that you disable Force Feedback. You can do this by pressing CTRL-F from anywhere in the game. You can also disable this feature in **Settings**. Press **ESC** until you reach the **Settings** menu, select **Force Feedback Settings**, then click on the **Enable Force Feedback** button to disable this option.

Disabling the Sound System

If you are experiencing slow frame rates and performance hitching in the *Racer*, you may want to disable the sound system in the game. To do this, press **ESC** until you reach the **Settings** menu, and select **Audio Settings**, then click on the **Sound System** button. This will disable all sound in the game.

Enabling First Person Mode

For optimal performance on any graphics card, you can change the camera mode to first person view, which is also known as "speed-demon" mode, by pressing F3.

Configuring Racer for Optimal Performance

Adjusting some options in **Audio Settings** and **Video Settings** may enhance the performance of **Racer**. To go to these screens, exit your race, then press **ESC** until you reach the **Settings** menu, then select the menu you wish to adjust.

Audio Settings

Use Hi-Res 22K Sounds - NOTE: This feature is only available in the full version of *Racer*. Enabling this option selects High Resolution (22K) sounds, which may slow down performance or cause hitching on some systems. Disabling this feature may increase performance and reduce momentary pauses in the game.

3D-Spatialized Sound

Enabling this option selects 3D spatialized sound, which may slow down performance on some systems. Disabling this feature may increase performance in the game, however Doppler effects and 2D/3D Relative Gain Adjustment will not be available when this is disabled.

In-Race Voices

Enabling this option selects in-race voices. Disabling this feature may increase performance and reduce hitching in the game.

In-Race Music

Enabling this option selects in-race music. Disabling this feature may increase performance and reduce hitching in the game.

Video Settings

Reflections

This option enables or disables game reflective surfaces. If you experience slowdowns on track sections with reflections, you may wish to disable this feature.

Smoke and Dust

This option enables or disables Engine Smoke and Track Dust. If you see graphical corruption or performance problems, you may wish to disable the effect.

Lens Flare

This option enables or disables Lens Flare. Some video cards may have problems displaying Lens Flare. The effect may appear corrupt, or it may show through some track geometry.

Model Detail

This setting changes the level of detail of the **Podracer** models. Selecting **Low** detail level will increase performance in the game.

Force Feedback Settings

Force Feedback

If you are experiencing performance problems, we recommend that you disable Force Feedback in the game. If you are already in a race, you can disable this feature by pressing CTRL-F.

-5- DirectX Setup

Why Use DirectX 6.1

DirectX is a library provided by Microsoft to run inside the operating system and provide programmers with seamless access to all of the hardware features available today. The DirectX platform provides an environment that allows developers to use a standardized format when programming an application. This makes it easier to support a wide variety of different hardware features. Prior to DirectX, developers were forced to write hardware-specific code (with a specific driver for each different piece of hardware).

NOTE: Since DirectX is relatively new in the computer world, we have found that some older systems may contain hardware that may not be fully DirectX compatible. For optimum performance in *Racer*, your system must fully support DirectX. Fortunately, many manufacturers are releasing updated drivers. If you are unsure whether or not your system will support DirectX, please contact the manufacturer of your system for more information.

DirectX 6.1 is included on this CD and must be installed prior to running **Racer**. During the installation of **Racer**, you will be prompted to install DirectX 6.1 if it is not already correctly installed on your system.

WARNING: Once you have installed DirectX, it is not easily removed from your system.

Write Down your Original System Configuration

NOTE: It is always a good idea to check and write down what sound and video hardware you have in your computer **BEFORE** installing DirectX. To do this in Windows 95 and 98:

- Click on Start.
- Select Settings.
- Choose Control Panel.
- Double click on System.

- Click on the **Device Manager** tab.
- Click on the plus sign to the left of Display Adapters and Sound, Video, and Game Controllers. Write down your hardware devices in case you have to manually restore your video or sound card drivers.

DirectX 6.1 Installation

During the installation of DirectX 6.1, you may be asked to insert the Windows installation disc. If this occurs, you may see an error during installation. The error could be either **DXSetup Error -7** or **DXSetup Error -8**. This will happen if the Sound Recorder, Volume Control, and Audio Compression, were not installed during your initial installation of Windows. We recommend that you install these components before installing DirectX. Please refer to **Installation** (Section 3) of this guide for information about how to add these components.

NOTE: Some programs that were made with earlier versions of DirectX may not work with DirectX 6.1.

DirectX Driver Issues

We suggest using the DirectX 6.1 drivers that are recommended during the installation of DirectX unless you experience problems after installing DirectX. The only time that this does not apply is when a section in this Troubleshooting Guide that pertains to your hardware specifically tells you to use a different driver.

Effects of Video Card Driver Installation by DirectX

When DirectX is being installed, some video card utilities may be disabled, such as Diamond Multimedia's InControl Tools, STB Vision95, or Creative Labs Graphics Control utilities. You may no longer be able to access them through their taskbar icons, and the options for changing your video properties may change back to stock Windows options. DirectX may not recommend changing the driver for your card at all because you may be using these utilities to customize your desktop display and removing them may have adverse effects on your computer.

Checking Your System for DirectX Compatibility

After you have installed *Racer* and DirectX, you may want to determine whether your computer hardware is supported by DirectX. To do this:

- Open the *Racer* Launcher menu.
- Select Hardware Configuration.
- Select Analyze your Computer. This takes you to DirectX Diagnostics.

Click on the **Display 1**, **Display 2**, and **Sound** tabs to check the DirectX Certification status of your sound and video cards.

- Look next to 'Certified' in the drivers section on each of these pages.
 - If it says 'Yes', the game should run fine.
 - If it says 'No', the drivers are not certified by the Microsoft Labs. If you experience
 problems, please check with the manufacturer of the card for the latest DirectX
 compatible drivers.
 - If it says 'No Hardware Support', you will need to update the driver so that your system is fully DirectX certified. The manufacturer should be able to provide you with instructions for updating your drivers, and provide you with more information regarding DirectX certification.

NOTE: You will only see Display 2 if you have a 3D Accelerator pass-through card.

Changing your Computer's Hardware

If you change the video or sound card in your computer, you will want to reinstall DirectX so that it can install the necessary drivers for your new hardware if necessary. To do this:

• Click on **Hardware Configuration** from the game's Launcher menu.

- Click on DirectX 6.1.
- Click on Install Now.
- Click on Reinstall DirectX. This will reinstall DirectX on your computer.
- Click on **OK** when the installer asks you to reboot your computer.

Restoring Original Drivers through DirectX Setup

If you need to restore your original video or sound card driver through **DirectX Setup**:

- Click on Hardware Configuration from the game's Launcher menu.
- Click on DirectX 6.1.
- Click on Install Now.
- Click on Restore Video Drivers or Restore Audio Drivers. This will restore the previously installed drivers on your computer.

NOTE: This will only work if you have only installed DirectX once.

• Click on **OK** when the installer asks you to reboot your computer.

Restoring Original Video Drivers through Windows

If you need to restore your original video card driver through Windows, follow the instructions below.

- Right-click on the desktop.
- Choose **Properties** from the pop-down menu.
- Click on the Settings tab.
 - Windows 95a: Click on Change Display Type...
 - Windows 95b: Click on Advanced Properties...
 - Windows 98: Click on Advanced...
- Click on Change... in the Adapter section.
 - Windows 98: Click on Next>
 - Choose Display a list of all drivers...and click on Next>
- Choose your original video card or the name of the chipset from the list.
- If the correct video card or chipset is not an option in Show Compatible
 Devices/Hardware, click on Show All Devices/Hardware, scroll through the list of
 Manufacturers, click on the correct one, then click on the name of your card or chipset.
- When your computer prompts you to restart, click on **Yes**.

-6- Video Issues

This section of the Troubleshooting Guide will provide you with information on problems encountered with video cards while playing *Racer*.

General Information and Troubleshooting Tips

DirectX Compatibility

To play *Racer*, your video card must be 100% DirectX compatible. If you do not know if your video card is DirectX compatible, please consult **DirectX Setup** (Section 5) of this Troubleshooting Guide for information about how to check for DirectDraw and Direct3D compatibility or if you encounter problems with your graphics card after installing DirectX.

Gamma Settings

When playing *Racer*, the gamma in the game may be too bright on some cards by default. If this occurs, you will need to adjust the gamma setting in the control panel for your card in Windows.

Non-DirectX Supported Video Card Problems

If your video card is not 100% DirectX compatible, you may encounter any of the following problems:

- DirectX may identify your card incorrectly and install the incorrect driver for your card.
- Black Screen: Your screen may go black but the sound and music will continue to play.
- Corrupted Graphics: You might see horizontal or diagonal lines over the screen.
- Flashing Graphics: You may see flashing corrupted graphics on the screen.
- Strange Colors: Your video card may display the colors incorrectly.
- Slow Graphics: The gameplay may be slow.
- Double Vision: Have you ever worn 3D glasses that didn't work quite right?
- Your game may crash to the desktop when trying to start Racer.

If you have encountered any of these problems, check with your video card manufacturer for updated DirectX drivers.

Setting Up Your Monitor

If you experience any video problems or you are not able to get all of the resolutions that your video card supports, you should make sure that your monitor is set up correctly in the display control panel. To do this:

- Right-click on the desktop.
- Choose **Properties** from the pop-down menu.
- Click on the Settings tab.
 - Windows 95a: Click on Change Display Type...
 - Windows 95b: Click on Advanced Properties...
 - Windows 98: Click on Advanced...
- Click on Change... in the Monitor section.
 - Windows 98: Click on Next>
 - Choose Display a list of all drivers...and click on Next>
- Choose your monitor from the list.
- If the correct monitor is not an option in **Show Compatible Devices**, click on **Show All Devices**, scroll through the list of manufacturers, click on the correct one, then click on the name of your monitor. If you are unable to find your monitor listed, please consult the manufacturer of your monitor to see if they have Windows drivers available for your monitor. This driver allows Windows to set up the monitor correctly.

Black Screen When Entering A Race

If you get a black screen while entering a race, you may be experiencing one of the following problems:

- Your graphics card may be using a non-standard or unsupported frequency for the monitor you have.
- Your graphics card may not support the resolution you are attempting to use.
- Your monitor may not be properly configured in Windows. Follow the directions above to check your monitor settings.
- Your video card drivers may have become corrupted. You may need to reinstall the drivers.
- Your graphics card may not have been detected.

Changing Racer Display Settings

After installing and configuring *Racer*, you may wish to change your display settings in the game. To do this:

- Select Hardware Configuration from the Racer launcher.
- Select Change Display Settings.
- Select Graphics Hardware if you wish to choose between your primary display and passthrough video cards.
- Select **Display Mode** to switch between available game resolutions. This list will change according to the 3D accelerator card that you have in your system.

Click on Accept to save your changes and close this menu.

NOTE: You must have a Pentium class 300 MHz or higher processor for resolutions above 800x600 to run properly.

Customizing Video Options

You can customize your performance options for smoother gameplay, better performance, or more detailed graphics while playing *Racer*. To do this, press **ESC** until you reach **Settings**, then select **Video Settings**. From this screen you can adjust the following options:

- **Reflections**: This option enables or disables game reflective surfaces. If you experience slowdowns on track sections with reflections, you may wish to disable this feature.
- **Smoke and Dust**: This option enables or disables Engine Smoke and Track Dust. If you see graphical corruption or performance problems, you may wish to disable the effect.
- Lens Flare: This option enables or disables Lens Flare. Some video cards may have problems displaying Lens Flare. The effect may appear corrupt, or it may show through some track geometry.
- Model Detail: This setting changes the level of detail of the Podracer models. Select Low or Medium detail levels to increase performance in the game.

Changing Resolutions in *Racer*

Changing the game's video resolutions may result in a shift in graphics on your monitor. You may need to adjust your monitor accordingly.

Currently Supported 3D Cards and Chipsets

Below is a list of the 3D video cards and chipsets that are supported in *Racer*. If you do not see your card listed, but you do see a chipset that matches the one used on your card, you should be able to play *Racer*.

NOTE: Some of the following cards will work with *Racer*, but contain certain problems listed below under **Specific Video Issues**. When using any of these cards and chipsets, you should be using the latest drivers for your card or DirectX 6.1 driver unless noted below. We have included a list of web addresses for downloading drivers for your specific card at the end of this document.

Supported 3D Card and Video Driver List

Card Name	Chipset	Driver Ver.	Version VxD#
Canopus Pure3D II	3dfx Voodoo 2	1.10.01	4.10.01.0098
Canopus Pure3D II LX	3dfx Voodoo 2	3dfx 2.17	4.10.00.0180
Creative Labs 3D Blaster Voodoo 2	3dfx Voodoo 2		4.11.01.0350
Diamond Multimedia Monster 3D II	3dfx Voodoo 2	2.07	4.10.01.0205
Guillemot International Maxi Gamer 3D 2	3dfx Voodoo 2	3dfx 2.17	4.10.01.0180
Orchid Technologies Righteous 3D II	3dfx Voodoo 2	3.01.01	4.11.01.0350
STB Systems BlackMagic 3D	3dfx Voodoo 2	2.18	4.10.01.0181
3dfx Interactive Voodoo3 2000	3dfx Voodoo 3 2000	Beta	4.10.01.0400
3dfx Interactive Voodoo3 3000	3dfx Voodoo 3 3000	Beta	4.10.01.0400
Creative Labs 3D Blaster Banshee	3dfx Voodoo Banshee	1.09	4.10.01.0109
Diamond Multimedia Monster Fusion	3dfx Voodoo Banshee		4.10.01.0213
Canopus Pure3D	3dfx Voodoo Graphics	1.62.02	4.10.01.0015
Deltron Technologies RealVision Flash 3D	3dfx Voodoo Graphics	1.3	4.10.01.0015
Diamond Multimedia Monster 3D	3dfx Voodoo Graphics	3.00.01	4.10.01.0016
Orchid Technologies Righteous 3D	3dfx Voodoo Graphics	3dfx 2.16	4.10.01.0016
Hercules Stingray 128/3D	Alliance Promotion aT25/3dfx	1.33	4.10.01.2072
Intergraph Intense 3D Voodoo	Alliance Promotion aT25/3dfx	2073	4.10.00.2073
Hercules Stingray 128/3D	Alliance Promotion aT3D/3dfx	1.33	4.10.01.2072
Jazz Multimedia Adrenaline Rush 3D	Alliance Promotion aT3D/3dfx	2073	4.10.00.2073
ATI Technologies XPert@play	ATI 3D Rage Pro	5.24	4.10.01.2440

ATI Technologies XPert@work ATI Technologies Rage Fury	ATI 3D Rage Pro ATI Rage 128	5.24 4.11.6060	4.10.01.2440 4.11.01.6060
Diamond Multimedia Stealth II G460	Intel i740	1400	4.10.01.1400
Intel Express 3D	Intel i740	2.6	4.10.01.1939
Real3D StarFighter PCI	Intel i740	0.1	4.10.01.0203
Real3D StarFighter AGP	Intel i740	0322	4.10.01.0322
Matrox Graphics Millenium G200	MGA-G200	4.52	4.11.01.1000
Matrox Graphics Productiva G100	MGA-G100	4330	4.11.01.4330
STB Systems Nitro DVD	Mpact 2	3073	4.10.01.3073
ASUSTeK 3DexPlorer	nVIDIA RIVA 128	2.0	4.10.01.0250
ASUSTeK 3DexPlorer 3000	nVIDIA RIVA 128	2.0	4.10.01.0250
Canopus Total 3D 128v	nVIDIA RIVA 128	1.10.10	4.10.01.0279
Diamond Multimedia Viper 330	nVIDIA RIVA 128	1.30	4.10.01.0279
STB Systems Velocity 128 PCI	nVIDIA RIVA 128	1.82	4.10.01.0182
STB Systems Velocity 128 AGP	nVIDIA RIVA 128 ZX	1.82	4.10.01.0182
STB Systems Velocity 128 (Gateway)	nVIDIA RIVA 128 ZX	7194	4.10.01.7194
Canopus Spectra 2500	nVIDIA RIVA TNT	1.20.03	4.10.01.0048
Creative Labs Graphics Blaster RIVA TNT	nVIDIA RIVA TNT	2109	4.11.01.0113
Diamond Multimedia Viper 550	nVIDIA RIVA TNT	0255	4.10.01.0255
STB Systems Velocity 4400	nVIDIA RIVA TNT	1.52	4.10.01.0152
Diamond Multimedia Viper 770	nVIDIA RIVA TNT 2	0255	4.10.01.0255
Creative Labs Graphics Blaster Exxtreme	Permedia 2	8.0395	4.10.01.2110
Diamond Multimedia FireGL 1000 Pro	Permedia 2	798	4.10.01.2357
Viewtop 3D Mars2	Permedia 2	P2P2VW95	4.10.01.2105
Diamond Multimedia Stealth S220	Rendition V2100	1.10	4.10.01.0108
ExpertColor 3DSaturn NVT5200	Rendition V2200	Rendition	4.11.01.5137
Hercules Thriller 3D AGP	Rendition V2200	3596	4.10.01.3596
Hercules Thriller 3D PCI	Rendition V2200	0.81.3539	4.10.00.3539
Hercules Terminator Beast	S3 Savage 3D	6.10.10	4.10.02.4005
Diamond Multimedia Stealth III S540FP	S3 Savage 4	80207	4.11.01.8002
Number Nine Revolution IV	Ticket To Ride IV	06062214	4.10.01.9421

Currently Unsupported Cards and Chipsets

These 3D cards were found to have significant problems when playing *Racer*. If you are using any of the following cards or chipsets, you may not be able to run *Racer*. Some of the cards listed below may end up working if updated drivers become available. For an updated list of supported cards please check the LucasArts Web page at http://www.lucasarts.com.

Card Name	Chipset
Calu Naille	Cilipaet

3D Rage II ATI Technologies 3D Xpression+ PC2TV ATI Technologies 3Dpro Turbo 3D Rage II ATI Technologies 3Dpro Turbo PC2TV 3D Rage II Number Nine Revolution 3D #9 Ticket to Ride Creative Labs Graphics Blaster 3D Cirrus Logic CL-GD5464 Matrox Graphics Mystique MGA-1064 Matrox Graphics Millenium II MGA-2164 VideoLogic Apocalypse 3D NEC PowerVR PCX Matrox Graphics Matrox M3D **NEC PowerVR PCX-2** NEC Technologies Power VR PCX2 **NEC PowerVR PCX-2** VideoLogic Apocalypse 3Dx **NEC PowerVR PCX-2** Creative Labs 3D Blaster PCI Rendition V1000-E Intergraph Intense 3D 100 Rendition V1000-E Sierra On-Line Screamin'3D Rendition V1000-E Canopus Total3D Verite Rendition V1000L-P Diamond Multimedia Stealth 3D 2000 Pro S3 ViRGE/DX STB Systems Nitro 3D S3 ViRGE/GX Cardex GX2 S3 ViRGE/GX2 Number Nine 9FX Reality 772 S3 ViRGE/VX STB Systems Velocity 3D S3 ViRGE/VX SiS 3D Pro AGP SiS 6326 Jaton Corporation Video-87 AGP Trident 3D Image 975

Specific Video Issues

3dfx Voodoo Graphics

When using a card with the 3dfx Voodoo Graphics chip with the DirectX 6.1 driver, you may not see the other racers' position numbers displayed over the racers' pod. Updating to the latest 3dfx driver will fix this problem.

3dfx Voodoo Graphics or Voodoo 2 Accelerator Cards

If you experience any problems while using a 3D accelerator card with the 3dfx Voodoo Graphics or Voodoo 2 chipsets, we recommend that you use the latest 3dfx reference drivers for your specific chipset. They are available at the 3dfx website.

ATI Rage Pro

While using a card with the ATI Rage Pro chipset, you may experience the following problems:

- Text may look blocky and pixelated.
- There may be black boxes around some transparent objects.
- Graphics may look blocky, especially on reflective surfaces.
- You may see white textures on the top and bottom of some podracers.
- You may experience choppy game performance if you set the display mode for the game above 640x480.

Please check the performance section of this Troubleshooting Guide for tips on how to help the game run smoother with this chipset. We also recommend that you check the ATI website for updated drivers which may lessen some of these problems.

nVIDIA RIVA 128

When using a card with this chipset, there will not be any fog on the tracks.

Permedia 2

When using a card with this chipset, you may experience the following issues, especially:

- Front end text may be blurry.
- Dust trails may not display correctly.
- When playing on a low end system, you may experience poor performance in the game or audio hitching during cutscenes.

Rendition V2200

If you experience any problems playing *Racer* while using a 3D accelerator card with the Rendition V2200 chipset, we recommend that you use Rendition driver version 4.11.01.5137.

Video Cards

ATI Rage Fury

When using a card with the ATI Rage 128 chipset, there will not be any fog on the tracks and the flares may display through track geometry. Check the ATI website for updated driver which may help with these issues.

Creative Labs Graphics Blaster Exxtreme

When using this card, we recommend that you set the display mode for the game to a resolution below 1024x768. You will be unable to start the game when using higher resolutions.

Matrox Productiva G100

When using this card, transparencies may appear dithered, making it difficult to read some text and decipher the HUD. We recommend that you set the display mode for the game to 640x480. When using higher resolutions, transparent objects may appear as groups of corrupted dots.

STB Nitro DVD

When using this card, we recommend that you set the display mode for the game to 640x480. When using higher resolutions, you may experience graphical corruption or the game may crash when attempting to enter a race. Please check the STB website for updated drivers that may correct these issues.

If you are unable to resolve video problems through this Troubleshooting Guide, please contact your hardware manufacturer for updated DirectX drivers. We have included a list of web sites for downloading drivers for your specific card at the end of this document.

-7- Sound Issues

Aureal A3D Interactive™ 2.0 Support

Aureal A3D 2.0 provides hardware accelerated 3D voices through the Aureal A3D API. This option works with sound cards that support the A3D API for Hardware accelerated spatialized sound. If you experience any problems when using an Aureal A3D card, we recommend that you download the latest A3D driver from the Aureal website.

Microsoft DirectSound3D Hardware Support

Microsoft DirectSound3D provides spatialized sound on machines that have hardware accelerated sound support. With hardware accelerated 3D sound, no extra CPU time is used.

Enabling 3D Audio

You can enable 3D audio even if the card is not hardware accelerated, however this may cause a decrease in the performance of *Racer*.

2D/3D Gain Adjustment with 3D Audio Enabled

When playing *Racer* with 3D Audio enabled, if you notice that the podracers or voices are getting drowned out by the ambient or 2D sounds during a race, you may want to adjust the 2D/3D Gain Adjustment slider until the 1st sound plays at the same volume as the 2nd sound. You may need to disable the music in the game while doing this so that you can hear the sound change.

DirectX Compatibility

Consult **DirectX Setup** (Section 5) in this Troubleshooting Guide for information about how to check to see if your sound card is DirectX compatible. If it is not, check with your hardware manufacturer for updated drivers.

No Sound in the *Racer* Demo Launcher

The game's launcher occasionally may have no sound. When this happens, it usually affects the rest of the game. Windows may still be using your sound card from the last application you were running. Rebooting the computer should correct this. If rebooting does not correct this, your sound card may not be set up correctly in Windows. Please read the rest of this section to find out how to check whether or not your sound card is working correctly.

NOTE: If the Media Player is not installed, some of the following instructions will not work. If you want to add it, please consult Windows Help for assistance. Just type Media Player in the index section and follow the directions provided by Windows.

Volume Control

You can change the volume within the game by going to Audio Settings. To do this:

- Chose Settings from the main game menu and then click on Audio Settings on the ingame menu bar.
- Choose the volume control that you wish to adjust.

Volume Levels

With some sound cards you may need to use the Windows control panel to adjust the volume in the game. You will need to exit the game to adjust the volume through Windows. If you do not have the Volume Control icon on your taskbar:

- Click on the **Start** button on your taskbar.
- Choose **Programs**.
- Choose Accessories.
 - Windows 95: Choose Multimedia.
 - Windows 98: Choose Entertainment.
- Choose Volume Control.
- Adjust the Wave Volume slider.
- If you are not hearing any sound, de-select the MUTE box below the Wave Volume slider.

Volume Control Programs

Some sound card and/or PC manufacturers may have proprietary software that must be adjusted separately from the Windows Volume Control. Consult your hardware documentation for more information.

Powered or Amplified Speakers

If you have powered speakers and have both line-out and speaker-out jacks on your sound card, try plugging your speakers into the line-out jack. Most sound cards' speaker-out jacks have an amplified signal and may cause static or popping on your amplified speakers. Switching to your line-out jack may greatly improve the sound quality.

General Sound Card Troubleshooting

If your sound card is not set up correctly in Windows, not 100% DirectX or Windows 95/98 compatible, or you have a resource conflict, these sound problems may occur:

- You may hear static.
- You may hear stuttering, especially as someone starts speaking.
- · You may hear repeating sounds.
- There may be no sound.
- The sound may drop out.
- You may experience a clicking or crackling sound.
- The game may not run.

Test your Sound Card in Windows

Make sure that your sound card is set up correctly in Windows. You can use the Windows Media Player to test a sound. To do this:

- Click on the Start button on your taskbar.
- Choose Programs.
- Choose Accessories.
 - Windows 95: Choose Multimedia.
 - Windows 98: Choose Entertainment.
- Choose Media Player.
- Go to the File menu.
- Choose Open... and choose a sound to test. Please be sure to choose Files of type: Sound (*.wav).

Test your Sound Card in DirectX Diagnostics

After installing *Racer*, you can run the **DirectX Diagnostics** program to test your sound card. Go to the **Hardware Configuration** menu on the launcher and click on the **Analyze your Computer** button. Click the tab that says **Sound** and then click on **Test**. If your card fails any of the tests here, you may have problems running *Racer* or any other game that requires DirectX.

Error: This Device is in Use by Another Application

If you receive this error, it is most likely due to another program using your sound card resources. To correct this, make sure to close all programs before attempting to run *Racer*. Please check **General Troubleshooting** (Section 2) in this guide for more information.

Inspect and Clean the CD

A dirty or scratched CD can cause many sound, video and installation problems. Check your CD for any dirt, smudges, fingerprints, or scratches. To clean your CD, wipe it gently with a soft cloth, moving in smooth strokes from the center hub to the outer edge of the CD.

Error Message when Starting Racer with Voice Modem Installed

When you have a voice modem installed, you may receive the error **"This program has performed an illegal operation"** when you click on **Play Star Wars Episode I** *Racer* from the launcher menu. Also, the sound may drop out or stutter in the cutscenes if the wave device on your modem is enabled. To correct either of these problems:

- Click on Start
- Select Settings
- Select Control Panel
- Double-click on Multimedia
 - Windows 95: Click on the Advanced tab
 - Windows 98: Click on the Devices tab
- Click the + next to Audio Devices
- Double-click on Audio for Voice Modem Serial Wave Device
- Select Do not use audio features on this device and click OK.

NOTE: This will disable all voice features on your modem.

Audio Skipping during Cutscenes

If you are playing on a low-end system, the audio in the cutscenes may occasionally hitch and skip if the screen resolution is set to 512x384. Changing the Display Mode to 640x480 corrects this issue.

Specific Sound Cards

Aureal A3D Cards

If you experience any problems while using an Aureal A3D sound card, we recommend that you download the latest Aureal A3D reference drivers from the Aureal website.

Advanced Gravis Ultrasound PnP Pro

You may experience occasional bursts of static or popping at the beginning of cutscenes and when the front end music starts. Check the Gravis website for updated drivers that may correct this problem.

Creative Labs AWE64

When using this card, if you launch the game and the opening cutscene seems to be pausing or skipping, with the sound cutting in and out, you may have Full Sound Duplex disabled for the card. Enabling Full Sound Duplex operation will correct this problem. To do this:

• Right-click on the My Computer icon.

- Select **Properties** from the pop-down menu.
- Click on the Device Manager tab.
- Click on Sound, Video, and Game Controllers.
- Click on AWE64 16-bit Audio.
- Click on Settings.
- Click on Restore Defaults.

Diamond Sonic Impact

You may hear sound corruption during cutscenes and in the race when using this card with 3D sound enabled. Disabling this feature corrects this problem.

Ensonig Soundscape and Soundscape Vivo

When using these cards with *Racer*, you may experience occasional bursts of static in some areas of the game, especially during cutscenes. To correct this, you may need to set all volume settings to the middle in the Windows volume control, including CD/Aux Balance (Win95) or CD Audio (Win98.) If this option is not available, go to Properties under Options and select it under Show the Following Volume Controls.

Ensonig AudioPCI

When using this card with *Racer*, you may experience choppy performance during cutscenes and some of the voices may stutter. Please check the Ensoniq web site for updated drivers that may correct this problem.

ESS Maestro 2

When using this card with 3D audio enabled, you may experience the following problems when you collide with objects:

- The sound may cutout.
- You may hear static or crackling.
- There may be hitching in performance.

Disabling 3D audio in the **Audio Settings** screen corrects these issues.

Soundcards with the ESS 1688 Chipset

When using a card with this chipset, you may experience choppy performance during cutscenes. Please check the ESS web site for updated drivers that may correct this problem.

Soundcards with the OPTi 925 and 931 Chipsets

When using a card with either of these chipsets, you may experience the following problems:

- You may occasionally hear long, loud bursts of static.
- You may randomly hear a scratchy sound.

Please check the OPTi website for updated drivers for these cards.

Guillemot MaxiSound Game Theater 64 and Sound 64 Dynamic 3D

When using either of these cards in Windows 98, you may hear an unusual popping sound on top of the regular sounds during cutscenes. Updating to the newest driver for this card corrects this. However, this card uses multiple system resources and may cause additional performance problems in the game.

MediaSonic Gold-16 Pro

When using this card, you may occasionally hear a small popping sound, especially during transitions. Lowering the volume sliders in **Audio Settings** helps correct this issue.

S3 Sonic Vibes

When using the card with driver version 1.00.08, you will get no sound in the launcher or in the game. Updating your drivers to version 1.01.08 fixes this problem.

Yamaha OPL3-SA Sound Cards

When using the Windows 98 drivers with a Yamaha OPL3 sound card, you may hear popping and static in the cutscenes. This issue is corrected with Yamaha driver version 2338 (4.05.00.2338).

If you are unable to resolve sound problems through this troubleshooting guide, please contact your hardware manufacturer for updated DirectX drivers.

-8- CD-ROM Drive Issues

Your CD-ROM drive is not affected by DirectX, but if you are having problems such as slow game play, stuttering voices, slow graphics, or the game just stops altogether, your CD-ROM may not meet the minimum requirements to run *Racer*.

Long Delays while CD Loads Game or Cutscenes

If you are getting long delays while the CD loads *Racer*, your CD-ROM is having problems loading all of the data needed to run the game. This may be caused by one of the following:

- Your CD-ROM may not meet the minimum requirements to run Racer.
- Your CD-ROM drive may be getting old or out of alignment.
- You may have a fast CD-ROM drive that spins down when the game is not directly accessing the CD. This is most apparent when using a 16X through 32X drive.

Specific CD-ROM Drives

We have found that some 4X or 8X CD-ROM drives may have trouble running *Racer*. If you have a **Mitsumi FX800**, **Hitachi CDR-7730**, **Toshiba XM5602b**, **Goldstar Gallent GCDR542b**, or **Acer 685-002** drive, you may experience problems with *Racer*, such as stuttering during cutscenes, sounds stuttering in the game, blue screen errors or slow gameplay.

CD-ROM Access Error

A blue screen CD-ROM access error might be a symptom of one of these problems:

- You may have a dirty or scratched CD.
- You may have removed the CD from the computer while Racer was running or paused.
- Your CD-ROM drive may be having trouble reading the disc. This is common on some 8X (eight speed) CD-ROM drives.
- Your CD-ROM drive may be getting old or worn.
- Your CD-ROM may not be properly installed in Windows.

First, check your CD for any dirt, fingerprints, smudges or scratches. To clean your CD, wipe it gently with a soft cloth, moving in smooth strokes from the center hub to the outer edge of the CD. If your CD looks fine, replace it in the drive and see if you have this problem again. If the problem persists, try testing the drive with a different CD.

Trouble Accessing Files

If you are having trouble accessing or using files on the CD-ROM or Hard Drive, your drives may be running in MS-DOS Compatibility Mode. To check this:

- Right click on the My Computer icon on your desktop.
- Choose **Properties** from the pop-down menu.
- Click on Performance.
- Look at File System:.

It should say 32-bit. If this field states that any of your drives are using MS-DOS Compatibility Mode, your drives are not configured properly to run under Windows 95/98. This mode will

greatly decrease the performance of your computer, and may not allow you to access programs that are written for 32-bit file access only.

This may be caused by:

- IDE or SCSI interfaces that are not properly set up under Windows.
- Inappropriate drivers for IDE or SCSI hardware.
- Proprietary CD-ROM drives.
- Computers that do not support LBA (Logical Block Addressing) modes except through software, such as Dynamic Drive Overlay, which allows the computer to see the whole capacity of large hard drives.
- Software Viruses, such as the MYB or CMOS A virus.

If you are experiencing this problem, please contact your computer manufacturer or a computer technician for assistance in correcting this problem before attempting to install the game.

-9- Controller Device Issues

Setting Up Your Game Controller

To play *Racer* with a joystick or gamepad, you must have your joystick properly installed and calibrated. To insure that your game controller is properly configured:

- Check to make sure that your game controller is firmly connected to the USB or game port on your computer.
- Make sure that you uninstall any software that was installed for a game controller that has been removed from your system.
- Make sure that you have all of the software installed and configured for your game controller.
- Click on **Hardware Configuration** from the **Racer** Launcher menu.
- Click on Joystick Options.
- Click on Calibrate Joystick. This takes you to the Game Controllers Control Panel where you can set up and calibrate your game controller.

After your game controller is properly configured, you may not see it listed in the pop-down menu until you click on **Accept** and go back into the **Joystick Options** screen.

Configuring Game Controllers

Each game controller will feature various default functions when used with the game. The functions may differ slightly, based on the type of controller being used. Your controller needs to be 100% Windows compatible to be fully functional in *Racer*. To view the default functions for your game controller, consult the **Settings** menu. To access this menu:

- Start Racer.
- Go to the Main Menu and click on **Settings**. From here you have access to all of the Settings screens, including Joystick, Mouse, Keyboard and Force Feedback.

Game Controller Calibration

If you experience any problems when using a joystick or gamepad in *Racer*, you should make sure that your game controller is properly calibrated. To do this:

- You will need to exit *Racer* to calibrate your game controller. You will not be able to calibrate
 it once you are in the game.
- Click on **Hardware Configuration** from the Launcher menu.
- Click on Joystick Options.
- Click on Calibrate Joystick.

Multiple Game Controllers

If you have more than one game controllers installed on your system, such as USB devices, you will have to select your preferred controller before starting the game. To do this:

- Open the game's launcher.
- Select Hardware Configuration.
- Select Joystick Options.
- Select your preferred controller from the list and choose Accept, then Done. You will only be
 able to choose from the first two devices in the list.

Unplugging Your Game Controller

Don't unplug your joystick or gamepad while playing Racer. But why would you do that, anyway?

Force Feedback Game Controllers

Racer supports a wide range of Force Feedback controllers through Microsoft DirectInput. However, you may experience control problems when using a force feedback controller on a machine that is at the minimum requirements for **Racer**.

Adjusting Force Feedback Strength

Each force feedback device will vary in its feedback strength, so if you wish to increase or decrease the force of your input device, you can do this in two ways.

- Go to the *Racer* Force Feedback Settings screen to enable Force Feedback and adjust the Strength, Stiffness, Effects, etc. to your taste.
- Go to the **Windows Control Panel Game Controllers** utility, press **Properties** for your Force Feedback device and adjust it's fine tuning options.

Steering Wheel Buttons and Pedals

You may find that some of the game's functions are not mapped to your steering wheel. This is because of the variety of button layouts offered by these devices. We suggest having the gas pedal mapped to **Throttle**, a button mapped to **Nose Down**, and a button mapped to **Boost**. You will need to go to the **Joystick Settings** screen to make these adjustments.

Thrustmaster Frag Master

When using the Thrustmaster Frag Master in *Racer*, the game may assign functions to the hat, even though there is not one on the stick. You can reassign these functions to buttons on the stick in the **Joystick Settings** screen.

Calibrating the Thrustmaster Frag Master or SuperSport

We suggest that you calibrate these devices through the Windows Control Panel before starting *Racer*. If you try to configure them from the game launcher, the properties screen will not open. Thrustmaster has been notified of this problem and may have a patch on their web site.

Using Steering Wheels With Racer

If you are using a steering wheel as your primary input device, you will not be able to fully navigate the in-game menus. Also, pressing the gas or brake pedal may cause the game to change to a different screen. You should use the keyboard or mouse to chose your options and then use the steering wheel to play once you enter the race.

Analog Joysticks

If your analog joystick is not recognized in the game or has poor performance, you may have previously installed the software that ships with Microsoft digital joysticks and gamepads. Uninstalling this software and reinstalling the analog joystick in your Windows 95/98 Game Controller Control Panel should correct this problem.

Compact Keyboards

Users of compact keyboards, such as those used for ergonomic reasons, may experience some problems using the default set of keyboard commands.

Keyboard Limitations

Some keyboards may have limitations in the game. You may be unable to use multiple keys simultaneously. If you are pressing three keys at the same time, only one key will register the action that you chose.

-10- How to Contact LucasArts LLC

LucasArts has set up a variety of services to provide you with information regarding our programs, hint & gameplay assistance, and technical support.

Hint Line

If you need a hint, you may call our automated Hint Line. The average call length is three minutes. This service requires a touch tone phone.

NOTE: You must be at least 18 years old or have your parents' permission to call.

U.S.

1-900-740-JEDI (1-900-740-5334)

95 cents per minute

(The option to speak with a live Hint Operator is also available through this number.)

Canada

1-900-677-JEDI (1-900-677-5334)

\$1.25 (U.S.) per minute

Where To Find Us Online

Visit the LucasArts Web site at http://www.lucasarts.com. From there, you will have the option to receive online technical support through Yoda's Help Desk, browse technical documents, or leave a message for an online representative.

Yoda's Help Desk

We are proud to feature Yoda's Help Desk, which is available in the Technical Support section of the LucasArts Web site at http://www.lucasarts.com/support/. Yoda's Help Desk offers interactive solutions to technical issues based on information you provide. Visitors to Yoda's Help Desk will be able to receive technical support 24 hours a day, seven days a week.

LucasArts Company Store

Visit the LucasArts Company Store at http://www.lucasarts.com. The Company Store offers the complete line of LucasArts games, hint books and logo gear.

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-12- Web Sites

3Dfx Interactive

www.3dfx.com

Acer www.acer.com Alliance Semiconductor www.alsc.com Asus www.asus.com

ATI Technologies www.atitech.com Aureal Semiconductor www.a3d.com

Aztech Labs www.aztechca.com or www.aztech.com.sg

Canopus www.canopuscorp.com

Cirrus Logic www.cirrus.com www.compaq.com Compaq Creative Labs www.creativelabs.com Crystal Semiconductor www.crystal.com **DELL** Computer www.dell.com

www.diamondmm.com Diamond Multimedia

Elsa www.elsa.com Ensoniq www.ensonig.com **ESS Technologies** www.esstech.com Gateway 2000 www.gateway2000.com Guillemot www.guillemot.com Hercules www.hercules.com

Hewlett Packard www.hp.com IBM www.ibm.com Intel www.intel.com Intergraph www.intergraph.com

Jaton

www.jaton.com LucasArts Entertainment Co. LLC www.lucasarts.com Matrox www.matrox.com Media Vision www.svtus.com MediaSonic www.mediasonic.com

Microsoft www.microsoft.com Microsoft Sidewinder www.microsoft.com/sidewinder/

Number Nine www.nine.com Oak Technology www.oaktech.com **OPTi** www.opti.com Orchid www.orchid.com Packard Bell www.packardbell.com Real 3D www.real3d.com Rendition www.rendition.com Silicon Integrated Systems (SiS) www.sis.com.tw

STB Systems www.stb.com Trident www.tridentmicro.com

Turtle Beach www.tbeach.com Yamaha www.yamaha.com