

# SPEEDSTAR A50

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## USER'S GUIDE

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# ABOUT SPEEDSTAR A50

The Diamond SpeedStar brand of AGP graphics accelerators is built for PC users who want powerful 2D, and fast 3D action, along with smooth, full-speed video playback.

This chapter summarizes some important features of the SpeedStar graphics accelerator.

## SPEEDSTAR KEY FEATURES

- AGP Interface:
  - ⇒ Supports AGP 1.0 compliant configuration setting
  - ⇒ Supports AGP 133MHz
- 4 and 8MB memory configurations
- 200MHz RAMDAC for high-quality images
- Increased speed and quality in 3D graphics rendering with exceptional processing power and triangle and fill rates
- State-of-the-art 2D graphics—quickly view intricate, full-color graphics
- Fully optimized for Windows 98—supports features of Windows 98/95/NT for full compatibility
- Includes InControl Tools 98 software for quick and easy desktop control
- Advanced multimedia capabilities:
  - ⇒ Multi-tap X and Y scaling and filtering
  - ⇒ Color space conversion
  - ⇒ MPEG-1 playback
- Comprehensive customer support
- 5-Year warranty

# 2

## HOW TO USE THIS MANUAL

For your convenience, the online User's Guide has been formatted as an Adobe® Acrobat® PDF file. This format gives you great flexibility when using this documentation. Print this manual for easy reading; it contains a full table of contents with page numbers.

This manual might be displayed with slightly-reduced magnification in your Acrobat Reader. If you experience any difficulty reading certain image files online, use the Reader's **Zoom To** feature from the **View** menu and increase the magnification to about 133%.

### MANUAL CONVENTIONS

Your SpeedStar User's Guide is organized in a standard, familiar way. A few icons are used to point out important information:



This icon marks useful tips or important operational notes.



This icon is a warning about possible electrical/software hazards or problems.

Hypertext links are active. If you are reading this manual online, place your mouse cursor over Table of Contents entries or main headings. If the hand icon changes to a pointing index finger, simply click and you will move to that place in the document. Some email or World Wide Web addresses inside this manual may be active as well. Go directly to a Web, FTP site, or email program simply by clicking on an active link.

# 3

## INSTALLING YOUR SPEEDSTAR ACCELERATOR

To install your SpeedStar accelerator, you need to first install the hardware, software drivers, and utilities provided on the installation CD. This chapter provides detailed hardware and software installation instructions.

### ◆ INSTALLING THE SPEEDSTAR HARDWARE

### ◆ WINDOWS 98/95 SOFTWARE INSTALLATION

### ◆ WINDOWS NT SOFTWARE INSTALLATION



Note—Some systems have an integrated graphics solution on the motherboard. Contact your motherboard manufacturer to determine how to disable your on-board graphics.

## INSTALLING THE SPEEDSTAR HARDWARE



**Warning!** To avoid accidental electric shock, shut your computer down and unplug the power cord before starting the following procedures. Remember which cables go to which connectors. You may want to label your computer's cables before disconnecting them. To protect your SpeedStar accelerator from damage due to static electrical discharge, ground yourself by touching the power supply box inside your computer.

## Before You Install...

Before you shut down your computer and install the SpeedStar accelerator, it is recommended that you set your display driver to Standard VGA. Use the following instructions for your operating system.

### Windows 98

To set your display to Standard VGA under Windows 98:

1. Select **Start > Settings > Control Panel > Display**. The **Display Properties** dialog appears.
2. Choose the **Settings** tab and click the **Advanced** button.
3. Click the **Adapter** tab and then click the **Change** button. The **Update Device Wizard** appears.
4. Click **Next** and select **Display a list...**

5. Click **Next** and select **Show all hardware**. Click **Standard Display Adapter Types** and select **Standard Display Adapter (VGA)**.
6. Click **Next**.
7. If a warning dialog appears, asking whether you want to use this driver, click **Yes**. Then click **Next**.
8. Windows asks you if you want to restart your computer. Click **No**.
9. Shut down your computer. You are now ready to remove your old graphics card and install your new SpeedStar accelerator.

## Windows 95

To set your display to Standard VGA under Windows 95:

1. From the **Start** menu, go to **Start > Settings > Control Panel**, then double-click **Display**. The **Display Properties** sheet appears.
2. Click the **Settings** tab, then click the **Advanced Properties** button.
3. Click the **Adapter** tab, then click the **Change** button. The **Select Device** window appears.
4. Click the **Show All Devices** bullet. Under **Manufacturers** select **(Standard Display Types)**. Under **Models**, select **Standard Display Adapter (VGA)**.
5. Click **Apply**, then click **OK** in all windows to close and accept the changes.
6. Shut down your computer. You are now ready to remove your old graphics card and install your new SpeedStar accelerator.

## Windows NT 4.0

To set your display to Standard VGA under Windows NT 4.0:

1. From the **Start** menu, go to **Start > Settings > Control Panel**, then double Click **Display**. The **Display Properties** sheet appears.
2. Click the **Settings** tab, then click the **Display Type** button.
3. Under **Adapter Type**, Click the **Change** button. The **Change Display** window appears.
4. Under **Manufacturers**, select **Standard Display Types**. Under **Display**, choose **VGA Compatible Display Adapter**.
5. Click **OK**. You may need to insert your Windows NT 4.0 CD-ROM.
6. Click **Close** and **OK** to accept the changes.

7. Shut down your computer. You are now ready to remove your old graphics card and install your new SpeedStar accelerator.



**Note**—You must have Service Pack 3 loaded for the SpeedStar to operate properly under Windows NT 4.0. Service Pack 3 is available from Microsoft's web page, [www.microsoft.com](http://www.microsoft.com).

After you have completed the steps above and removed your old graphics card, you can continue with the following procedures to install your SpeedStar accelerator board.

## Installing Your SpeedStar Accelerator Board

To install your SpeedStar accelerator board, follow the instructions below. Note that the illustrations below are for instructional use only and may not correspond exactly to the board you purchased.

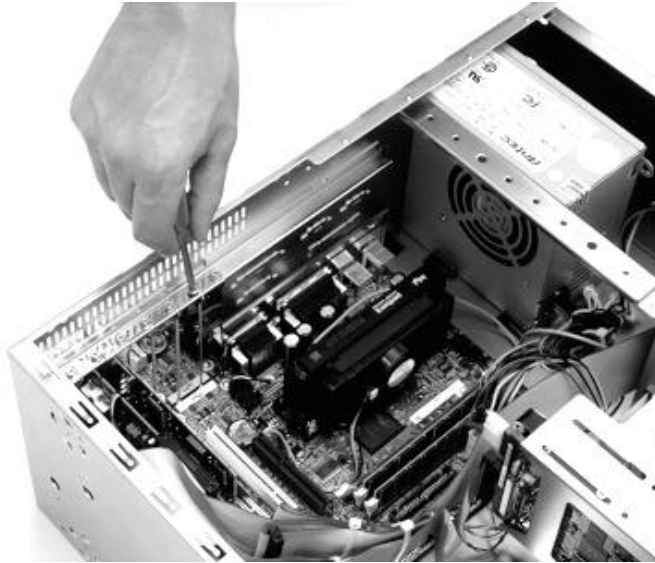
To install your SpeedStar board:

1. With the power off, remove your computer cover and locate the available AGP slot.

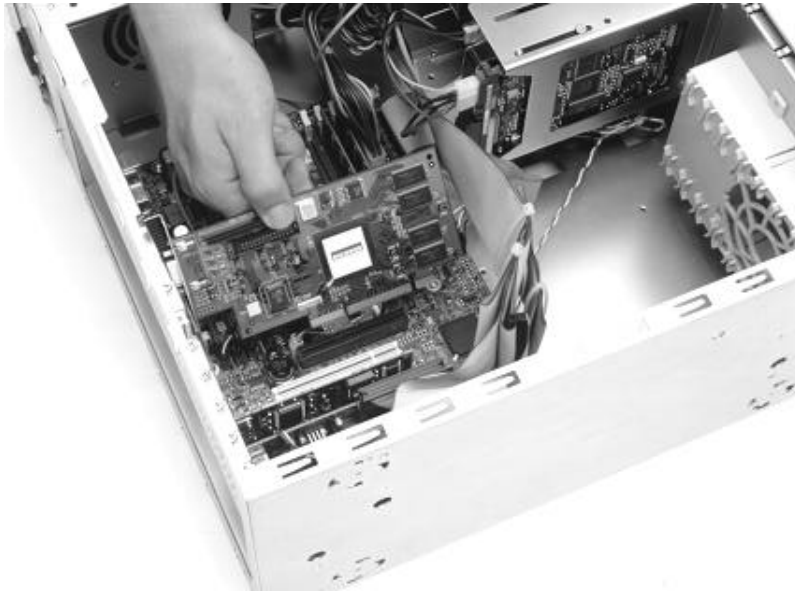


View of the AGP slot (dark or brown color)

2. Remove the screw attached to the bracket cover of the AGP slot and remove the bracket plate.



3. Position your card directly above the AGP slot as illustrated below.



AGP and PCI cards are designed to fit one way only. Be sure your card is properly aligned.

4. Insert your SpeedStar card firmly into the AGP slot. Care should be taken to press the card with even pressure until it snaps into the slot. **Do not force.**




5. Once you are certain your SpeedStar card is installed properly in its slot, secure it to the computer frame with the screw you removed in step 2.



6. Attach the VGA monitor cable to the 15-pin connector on your SpeedStar card.
7. Secure the computer cover and reboot your computer.
8. After your computer reboots, continue with the software installation below.

# WINDOWS 98/95 SOFTWARE INSTALLATION

Now that you have installed the SpeedStar hardware and rebooted your computer, the easiest way to install the software is to run the Quick Start utility from the SpeedStar CD disk. Use the installation the following directions.


-  **Important**—To receive the full benefits of your AGP SpeedStar accelerator under Windows 95, you must be running Windows 95 OSR2 (version 4.00.950 B) updated with the USB OSR2.1 supplement on an Intel AGP motherboard. Contact your computer manufacturer for additional details.


## Running Quick Start CD on Windows 98/95

Diamond provides a utility for quick and easy installation of the SpeedStar drivers and software. We recommend you run the Quick Start program to install the drivers and any other software that comes with your card. The Quick Start program will automatically determine which operating system you are running and installs the appropriate drivers and other software.

After Windows 98/95 reboots, it detects your SpeedStar card and gives a message that new hardware was found. It then compiles a driver database. Click **Cancel**, and proceed with the following directions.

1. Insert the Diamond Quick Start CD into your CD-ROM drive. If your computer's CD-ROM is set to "auto-run" or "auto-play," when you close the CD disk tray, the Quick Start program should launch automatically. The SpeedStar installation screen appears.

-  **Note**—If your CD-ROM auto-run is not enabled, click **Start > Run** and type `X:\start.exe` (where X is your CD-ROM drive).
2. From the SpeedStar Quick Start Welcome screen, click **Installation**. The Windows 98/95 driver installation screen appears.
  3. Select **Diamond Drivers**. The **Diamond Install** screen with Release Notes appears. After reading the Release Notes page, click **Next**.
  4. Click the **Standard** button to install the drivers all other software components. We recommend you accept the default installation path. Click **Next** after reviewing the software installation component list. If you are requested to keep newer versions of certain files, click **Yes**. Your SpeedStar software is now installed.

-  **Note**—You can also choose either **Minimal** or **Custom** installation options if necessary. The table below provides a complete description of your installation options.

**Minimal:** Installs only the Diamond SpeedStar Display Driver.

**Standard:** Installs the Diamond SpeedStar Display Driver and InControl Tools

**Custom:** Allows installation of either the Diamond SpeedStar Display Driver

or InControl Tools . At a minimum, the Diamond SpeedStar Display Driver must be installed during a first-time installation.


5. Click **Next** to finish the installation. Your computer should automatically reboot. You are now ready to enjoy the power of your new SpeedStar graphics accelerator!

## Manual Software Installation for Windows 98

If necessary, you can install the SpeedStar drivers and additional software by launching the installer program from installation CD disk. For Windows 98, use the following instructions.

After Windows 98 reboots, it detects your SpeedStar card and gives the message that new hardware was found. It then compiles a driver database. The **Add New Hardware Wizard** appears and displays the message **This Wizard searches for new drivers for: Standard PCI Graphics Adapter (VGA)**. After you see this message...


1. Click **Next**. The Wizard then asks **what do you want to do?**
2. Select **Display list of all the drivers...** and click **Next**.
3. Select **Show Compatible Hardware** and click **Have disk...**
4. Insert the SpeedStar installation CD and type **x:\Win9x\Disk3** (where x is the letter of your CD ROM drive). Click **OK**. Windows locates and displays the driver in the **Select Device** window. Click **OK**. Windows now displays the name of the driver and its location for your card.
5. Click **Next**. Windows may take a moment to rebuild a driver database. Click **Finish** to exit the Add New Hardware Wizard.
6. Click **Yes** to restart your computer.

 **Note**—If you are prompted to keep or replace existing files, be sure to keep the newer files.

You have now successfully installed the software for your Diamond SpeedStar board. Congratulations!

## Manual Software Installation for Windows 95

If necessary, you can install the SpeedStar drivers and additional software by launching the installer program from installation CD disk. This section covers the installation of your SpeedStar software and drivers under Windows 95—versions 4.00.950 and 4.00.950 B (referred to as OSR2).

 **Important**—To receive the full benefits of your AGP SpeedStar accelerator under Windows 95, you must be running Windows 95 OSR2 (version 4.00.950 B) updated with the **USB OSR2.1** supplement on an Intel AGP motherboard. Contact your computer manufacturer for additional details.

1. Once you have installed your hardware and Windows 95 restarts and detects your new card, and the **Update Device Driver Wizard** appears. Insert the Quick Start CD into your CD-ROM drive.
2. Click **Next**. Click the **Other Locations...** button, and then click **Browse**.
3. From the **Browse for Folder** window, select the CD-ROM drive that contains the SpeedStar installation CD. Click **Win9x** and then **Disk3**. Now click **OK**. Click **OK** again. Windows locates the SpeedStar driver.
4. Click **Finish**. Your SpeedStar software is now installed.



**Note**—You may be requested to insert a disk. If this happens, type `X:\Win9x\Disk3` (where X is the letter of your CD-ROM drive). Your drivers should now install properly.

## INCONTROL TOOLS FOR WINDOWS 98/95

Diamond's InControl Tools 98 is automatically installed in you select the **Standard** install from the installation CD. InControl Tools allows you to take charge of your Windows desktop and make Windows 98/95 easier to use and control. More than a set of configuration utilities, InControl Tools allows your Diamond video card to be the complete graphics solution for your PC.

### Key Features

- Monitor Frequency Selection
- Keyboard shortcuts
- Resolution Switching on the Fly
- Color-depth Switching on the Fly
- Gamma Correction

# WINDOWS NT SOFTWARE INSTALLATION

This section contains installation instructions for Windows NT 4.0.

Now that you have installed the SpeedStar hardware and rebooted your computer, complete your installation using the directions that follow.



**Note**—You must have Service Pack 3 loaded for the SpeedStar to operate properly under Windows NT 4.0. Service Pack 3 is available from Microsoft's web page, [www.microsoft.com](http://www.microsoft.com).

## Running Quick Start CD on Windows NT 4.0

Diamond provides a utility for quick and easy installation of the SpeedStar drivers and software. We recommend you run the Quick Start program to install the drivers and any other software that comes with your card. The Quick Start program will automatically determine you are running Windows NT 4.0.

To install your SpeedStar software using the Quick Start CD:

1. After you have set your monitor to the **Standard Display** type (see page 4) for Windows NT 4.0, insert the Diamond Quick Start CD into your CD-ROM drive. If your computer's CD-ROM is set to "auto-run" or "auto-play," the Quick Start program should launch automatically after you close the tray. The SpeedStar installation screen appears.



**Note**—If your CD-ROM auto-run is not enabled, click **Start > Run** and type `X:\start.exe` (where X is your CD-ROM drive).

2. From the SpeedStar **Quick Start Welcome** screen, click **Installation**. The Windows NT 4.0 driver installation screen appears.
3. Select **Diamond Drivers**. The **Diamond Install** screen appears.
4. Click the **Standard** install button to install the drivers and other software components. We recommend you accept the default installation path. Click the **Next** button.



**Note**—Please read the Release Notes page. It contains new and important information that may not be covered in your online User's Guide.

5. Click **Next** to install the Diamond drivers and software.
6. Click **Next** to finish the installation. Your computer should automatically reboot.

You are now ready to enjoy the power of your new SpeedStar graphics accelerator!

## Manual Software Installation for Windows NT 4.0

If you need to install only the video drivers or want to do a manual install, follow the steps below.

1. Once NT 4.0 restarts, insert the Quick Start CD into your CD-ROM drive.
2. When the Quick Start utility automatically starts, click **Quit**. From the **Start Menu**, select the **Run...** dialog box and type X:\NT4\Install.exe (where X is the letter of your CD-ROM drive).
3. The Diamond Install screen appears. There are three installation choices: **Minimal**, **Standard**, or **Custom**. We recommend you click the **Standard** option button. See below for more information about your choices.

**Minimal:** Installs only the Diamond SpeedStar Display Driver.

**Standard:** Installs the Diamond SpeedStar Display Driver and InControl Tools

.

**Custom:** Allows installation of either the Diamond SpeedStar Display Driver or InControl Tools . At the minimum, the Diamond SpeedStar Display Driver must be installed during a first-time installation.

4. Click **Next**. Your display drivers are installed.
5. Click **Next** to restart your computer.

# 4

## REMOVING SPEEDSTAR

This chapter describes how to properly remove your SpeedStar software from your system.

### ◆ REMOVING SPEEDSTAR UNDER WINDOWS 98/95

### ◆ REMOVING SPEEDSTAR UNDER WINDOWS NT 4.0

## REMOVING SPEEDSTAR UNDER WINDOWS 98/95

The following sections contain two easy methods for removing the SpeedStar A50 software from your Windows 98 or Windows 95 system.

### Method I: Use the Add/Remove Programs Command

1. Reset your display adapter to Standard VGA, using the instructions on page 3. When prompted by Windows to restart your computer, click No.
2. From the Start menu, go to Start > Settings > Control Panel > Add/Remove Programs.
3. Launch Add/Remove Programs. The Add/Remove Programs Properties page appears.
4. From the programs list, select **Uninstall InControl Tools 98** and click the **Add/Remove** button.
5. Click **Next**.
6. Click the **Remove the product** button to remove all software. You can also choose to remove specific components by clicking the **Add/Remove components** button.
7. Examine the list of components that will be uninstalled. If you are sure you want to remove these components, click **Next**.
8. Click **Next** to exit the uninstall program. Your computer should now reboot.

After you have reset your system to the Standard VGA driver and removed the SpeedStar software, you can remove the hardware if necessary.

1. Shut down your computer.
2. Disconnect the power cord from the electrical outlet.

3. Remove the computer case as outlined in the hardware installation instructions in Chapter 3.
4. Ground yourself by touching the power supply box.
5. Reverse the hardware installation procedures from Chapter 3.

## Method 2: Use the InControl Tools 98 Uninstall

1. Reset your display adapter to Standard VGA, using the instructions on page 3. When prompted by Windows to restart your computer, click No.
2. From the Start menu, select **Start > Program > InControl Tools 98 > Uninstall InControl Tools 98**.
3. Click Next.
4. Click the **Remove the product** button to remove all software. You can also choose to remove specific components by clicking the **Add/Remove components** button.
5. Examine the list of components that will be uninstalled. If you are sure you want to remove these components, click Next.
6. Click Next to exit the uninstall program. Your computer should now reboot.

After you have reset your system to the Standard VGA driver and removed the SpeedStar software, you can remove the hardware if necessary.

1. Shut down your computer.
2. Disconnect the power cord from the electrical outlet.
3. Remove the computer case as outlined in the hardware installation instructions in Chapter 3.
4. Ground yourself by touching the power supply box.
5. Reverse the hardware installation procedures from Chapter 3.

## REMOVING SPEEDSTAR UNDER WINDOWS NT 4.0

To remove your SpeedStar card under Windows NT 4.0.:

1. Select **Start > Settings > Control Panel > Add/Remove Programs**.
2. Choose **DIAMOND Display Component Uninstall**. Click **Add/Remove**. The **DIAMOND Install** screen appears.
3. Click the **Remove the Product** button.
4. Click Next.
5. When the uninstall is complete, Windows NT will automatically reboot.

After you have successfully removed the software, continue by removing the hardware:

1. Shut down your computer.
2. Disconnect the power cord from the electrical outlet.
3. Remove the computer case as outlined in the hardware installation instructions in Chapter 3.
4. Ground yourself by touching the power supply box.
5. Reverse the hardware installation procedures from Chapter 3.

## CUSTOMER SERVICE

For updates and news on Diamond Multimedia products, please fill out the product registration card and mail it in. For questions or information regarding Diamond Multimedia Systems products, please use any of the following:

U.S. mail:	Diamond Multimedia Systems, Inc. 7101 Supra Drive SW, Albany OR 97321
Sales Info:	1-800-4-MULTIMEDIA sales4u@diamondmm.com
Customer Service Telephone:	800-468-5846
Customer Service FAX:	408-325-7408
Web Site:	www.diamondmm.com

## TECHNICAL SUPPORT

If you need assistance, contact us by phone at 541-967-2450, or you can FAX, e-mail or call using the information below for help.

FTP Site:	ftp.diamondmm.com
FAX on-demand:	800-380-0030
World Wide Web	www.diamondmm.com
European Web Sites:	www.diamondmm.de www.diamondmm.co.uk
European FTP Site:	ftp.diamondmm.de
Japanese Web Site	www.diamondmm.co.jp
Spanish Web Site	www-espanol.diamondmm.com
Spanish Tech Support Telephone	541-967-2453
Portuguese Web Site	www-portugues.diamondmm.com
Product Support E-Mail:	techsupt@diamondmm.com
Spanish Product Support Email	intltech@diamondmm.com
Developer Relations:	developer@diamondmm.com

Visit the Diamond Multimedia web site for the latest software updates and technical information.

## WINDOWS 98/95 FAQs

If you experience a problem using a SpeedStar accelerator under Windows 98/95, there are three possible causes of your problem:

- Your game is incompatible with the SpeedStar or is not compatible with Direct 3D.
- The SpeedStar card not properly installed.
- SpeedStar drivers are not correctly installed.

Also...

- ⇒ Check your game manufacturer's specifications to verify its compatibility with Direct 3D.
- ⇒ Shut down your computer and double-check the cable connections. Make sure that the SpeedStar card is properly seated in its AGP slot.
- ⇒ Re-install the SpeedStar drivers using the SpeedStar Installation CD.

### Q: What 3D API's are supported by the SpeedStar ?

The SpeedStar A50 currently supports and accelerates Microsoft's DirectX 6 under Windows 98/95, which includes Direct3D. The SpeedStar also accelerates OpenGL under Windows NT 4.0.

### Q: Can the Microsoft PowerToy "QuickRes" be used with the SpeedStar ?

Yes, QuickRes will allow for resolution and color depth switching on the fly with the SpeedStar. However, in testing there has been a color palette shifting phenomena observed when switching color depths. This will remain as an open limitation since QuickRes, as are all the MS PowerToys, considered unsupported applications.

### Problem: User receives a Windows Protection Error in "IFSMGR" when starting Windows 95.

Check to see if the user has a compressed hard drive, this seems to be the common factor with this issue. Currently, it is recommended to use uncompressed hard drives. Please send a "PDR" if you receive this message. A PDR is a **Product Description Report**. A form can be downloaded from our FTP site <ftp://diamondmm.com/pub/misc>.

Download the file named `pdr.txt`. Simply fill out the form, and email it back to [techsupt@diamondmm.com](mailto:techsupt@diamondmm.com).

## Your Game is Incompatible with SpeedStar

The SpeedStar supports the following gaming API's on the platforms indicated:

### Windows 98/95

- Microsoft Direct3D
- DirectX6

### Windows NT 4.0

- Open GL

## SpeedStar is not Properly Installed

Check to make sure that SpeedStar is properly seated in the AGP and that the VGA monitor cable is firmly and correctly connected top the SpeedStar card. For more information, please see Chapter 3, *Installing Your SpeedStar Accelerator*.

## SpeedStar Drivers are not Correctly Installed

Check your Windows Device Manager (**Start > Settings > Control Panel > System > Device Manager**) to determine if all the drivers are installed properly. The properties dialog for the Display Adapter will show if the driver is functioning properly. If not, a yellow exclamation point appears next to the device driver in question.



**Note**—The most up-to-date Frequently Asked Questions and their answers may be found at the Diamond Multimedia Web site ([www.diamondmm.com](http://www.diamondmm.com)).

# A

## SPEEDSTAR DISPLAY MODES

### WINDOWS 98/95 AND NT 4.0 DISPLAY MODES

Resolution	Depth	56Hz	60Hz	65Hz	70Hz	72Hz	75Hz	85Hz	100Hz	120Hz	160Hz	200Hz
640 x 480	256		◆			◆	◆	◆	◆	◆	◆	◆
	65K		◆			◆	◆	◆	◆	◆	◆	◆
	16M		◆			◆	◆	◆	◆	◆	◆	◆
800 x 600	256	◆	◆			◆	◆	◆	◆	◆	◆	
	65K	◆	◆			◆	◆	◆	◆	◆	◆	
	16M	◆	◆			◆	◆	◆	◆	◆	◆	
1024 x 768	256		◆		◆		◆	◆	◆	◆		
	65K		◆		◆		◆	◆	◆	◆		
	16M		◆		◆		◆	◆	◆	◆		
1280 x 1024	256		◆				◆					
	65K		◆				◆					
	16M		◆				◆*					
1600 x 1200	256		◆	◆	◆		◆					
	65K		◆	◆*	◆*		◆*					

\*Available on 8MB boards only



Tip—Please visit Diamond's web site (see page 16) to obtain the latest drivers.

# B

## WINDOWS 98 MULTIPLE MONITOR SUPPORT

Windows 98 lets a single machine connect to multiple display adapters and monitors. You can significantly expand the total viewing area of your desktop—increasing the amount of applications or windows you can view simultaneously.

The multiple monitor feature of Windows 98 requires a display driver that supports the multimonitor environment. It can be used for the following purposes:

- Desktop publishing
- Presentations: Multimonitor display can be used to prepare and deliver presentations
- Games: Navigator and status can be displayed on separate monitors
- Business: Several applications can be displayed by tasks on different monitors.
- Monitor matrix display: Up to nine monitors (3x3) can be used to create a mammoth display.

### MULTIMONITOR SYSTEM REQUIREMENTS

Following are requirements for the multimonitor feature:

- The main requirement for multiple monitor support are drivers that support it. Some video drivers included in the operating system will have this support. The secondary card requires these drivers. The primary driver can use any driver that is compatible with the chipset of the card.
- You must have enough slots free in the system

### SETTING UP MULTIPLE MONITOR SUPPORT

Follow the steps below to set up the multimonitor feature.

1. Set up the first display adapter in slot 1 and install the display adapter drivers. Your primary card must have the highest priority. (which ever card displays POST [Power On Self test] and DOS is the primary display adapter.)
2. Once the first card is set up, shut down the system, install the second card and boot up. The system will find the second display adapter and install the drivers.

3. Reboot the system. On bootup, while the Splash screen is showing, the second monitor will initialize. It will show you the information about the card BIOS and tell you...**Windows has successfully initialized this display adapter.** To extend the desktop to this monitor, go to your **Display Properties** and then to the **Settings** tab...
4. Once booted up to Windows, go to the **Display Properties** and then the **Settings** tab. You will see a picture of two monitors (the primary is labeled 1 and the secondary is labeled 2).
5. Click the second monitor and check the box at the bottom that says... **“Extend my Windows desktop onto this monitor.”**
6. Click **Apply**.
7. You should now have both monitors working. You can now set the resolution, colorpalette, refresh rate, and acceleration of each card independently. Please refer to the **Tips and Troubleshooting for Multimonitor Support** below.

## TIPS AND TROUBLESHOOTING

### **Q: Why did my second monitor fail to come up after I configured and rebooted my computer?**

The likely cause of this is a conflict with the `emm386.exe` program. Comment out `emm386.exe` from `config.sys` and reboot your computer.

### **Q: Why won't the second display adapter initialize as described in step 3 of setup?**

Check the Device Manager. Make sure that both adapters are listed and conflict free. If you see a problem with the secondary display adapter, check its properties. On the general tab, under Device Status, it will most likely tell you that the display drivers do not support multiple display adapters. If it does, try getting updated drivers for the device that are multimonitor compliant. If you are using Windows 98 drivers for the device, then it may be a limitation of the hardware and the card may require that it be the primary display adapter.

### **Q: Why won't my screen saver display between both monitors?**

The screen saver you are using does not support multiple monitors. Try using built-in screen savers, such as the Flying Windows or any of the 3D screen savers.

## **Q: Why won't the task bar extend over both screens?**

The task bar is only displayed on one monitor. This is the correct operation.

## **Q: Why is D3D not accelerated on the second display adapter?**

This is a known issue and is a limitation of either Windows 98 or the motherboard. Diamond has verified this problem on a Socket 7 with a 430TX chipset, a Socket 5 with the FX chipset, and a Pentium II with the 440LX chipset, all with the same results running a D3D Tunnel test in a window. When you drag it to the other monitor, the FPS is reduced on average of 75% (from 60fps to 21fps).

## **Q: AGP is not the primary adapter. Why not?**

That is a limitation of the motherboard. Your primary adapter is whatever card has the highest bus priority, if you get POST out of the PCI card and not the AGP card. Contact the motherboard manufacturer for possible solutions.

## **Q: How many adapters can you have in one system?**

It can vary: Diamond has verified 3 adapters; Microsoft has had 11 in one system at one time. Microsoft claims that if all the hardware is compatible, you use Windows 98 drivers, and you have the resources and slots, you can have as many as you want.



# SPEEDSTAR TECHNICAL SPECIFICATIONS

## **Controller:**

- SiS 6326AGP

## **Bus Type:**

- AGP 2X (ATX form factor)

## **Memory:**

- 4 or 8 MB SDRAM

## **Horizontal Sync Signals:**

- 31.5KHz-108.5KHz

## **Vertical Refresh:**

- 48i Hz-200Hz

## **Maximum Dot (Pixel) Rate:**

- 200MHz RAMDAC

## **Video Playback:**

- MPEG-1
- Multi-tap X and Y scaling and filtering
- Color space conversion

## **Connectors:**

- DB-15 analog monitor with connector (VESA DDC2B)
- Video port connector

## **Minimum System Configuration:**

- Intel Pentium<sup>®</sup> or compatible CPU
- AGP 1.0 compliant motherboard
- Windows 98/95 or Windows NT 4.0
- CD-ROM drive

# D

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# DIAMOND SPEEDSTAR WARRANTY

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This warranty applies only to this product, and is governed by the laws of the State of California.

# E

## CE AND FCC INFORMATION

This device has been tested to comply with the FCC standards for home or office use.

Operation is subject to the following two conditions:

This device may not cause harmful interference, and

This device must accept any interference received, including interference that may cause undesired operation.

This device complies with Part 15 of the FCC Rules.

This device also complies to CE Certification pursuant to EN55022:1994-08/A1:1995-05 class B

FCC ID #FTUPCI12184M

This equipment generates and uses radio frequency energy and if not installed and used properly, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. If this equipment does cause 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 of the following measures:

Reorient the receiving antenna

Relocate the computer with respect to the receiver

Move the computer away from the receiver

Plug the computer into a different outlet so that computer and receiver are on different branch circuits

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: How to Identify and Resolve Radio and TV Interference Problems.

This booklet is available from the  
U.S. Government Printing Office,  
Washington DC 20402,  
Stock No. 004-000-00345-4.

To meet FCC requirements: "SHIELDED CABLE(S) and POWER CORDS MUST BE USED TO CONNECT THE DEVICE TO A PERSONAL COMPUTER OR OTHER CLASS B DEVICE ACCORDING TO FCC 15.838D." ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USERS AUTHORITY TO OPERATE THIS EQUIPMENT."

# DECLARATION OF CONFORMITY

We, the Responsible Party  
Diamond Multimedia Systems, Inc.

2880 Junction Avenue

San Jose, CA 95134

*declare that the product*

SpeedStar A50

*is in conformity 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.*