

# STEALTH III S540

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## USER'S GUIDE

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# 1

## ABOUT THE STEALTH III S540

The Stealth III S540 graphics accelerator is for PC users who want to boost their system's performance with 3D animation, 2D graphics power, full motion video and DVD. Diamond's Stealth III S540 card provides powerful performance on the vast number of PC systems that support AGP or PCI.

### STEALTH III S540 KEY FEATURES

- ◆ S3 Savage4 Pro+ chip technology
- ◆ 1x/2x and 4x AGP Interface:
  - ⇒ Supports AGP 1.0 and 2.0 specifications
  - ⇒ Supports 66 megahertz (MHz) AGP bus speed
- ◆ 16MB or 32MB high-speed SDRAM memory
- ◆ 300MHz video 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
- ◆ SoftDVD support on 266MHz (or faster) processors
- ◆ Fully optimized for Windows 98—supports features of Windows 95/NT for full compatibility
- ◆ Includes InControl Tools 99 (ICT99) software for quick and easy desktop control
- ◆ Advanced multimedia capabilities for crystal clear, full-screen, full-motion DVD and MPEG-2 playback.
- ◆ Comprehensive customer support
- ◆ 5-year warranty

# 2

## HOW TO USE THIS MANUAL

For your convenience, this online User's Guide has been formatted as an Adobe® Acrobat® PDF file. This format gives you great flexibility when using this documentation. You can easily print this manual for a paper copy; it will look like any standard document with a table of contents and page numbers. You can also read it online—important links, such as table of contents entries, worldwide web, and email addresses are active.

This manual might be displayed with slightly-reduced magnification in your 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 Stealth III S540 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 STEALTH III S540 CARD

To use your Stealth III S540 card, you need to first install the hardware, software drivers, and utilities provided on the installation CD.

### ◆ HARDWARE INSTALLATION

### ◆ 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.

## HARDWARE INSTALLATION

Your Stealth III S540 card may be either an AGP or PCI type. Follow the instructions below for proper installation. Before you install your card, verify if your AGP motherboard is an AGP 1x, 2x, or 4x type, and refer to the instructions in the following section.



**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 Stealth III S540 card from damage due to static electrical discharge, ground yourself by touching the power supply box inside your computer before starting the procedures below.



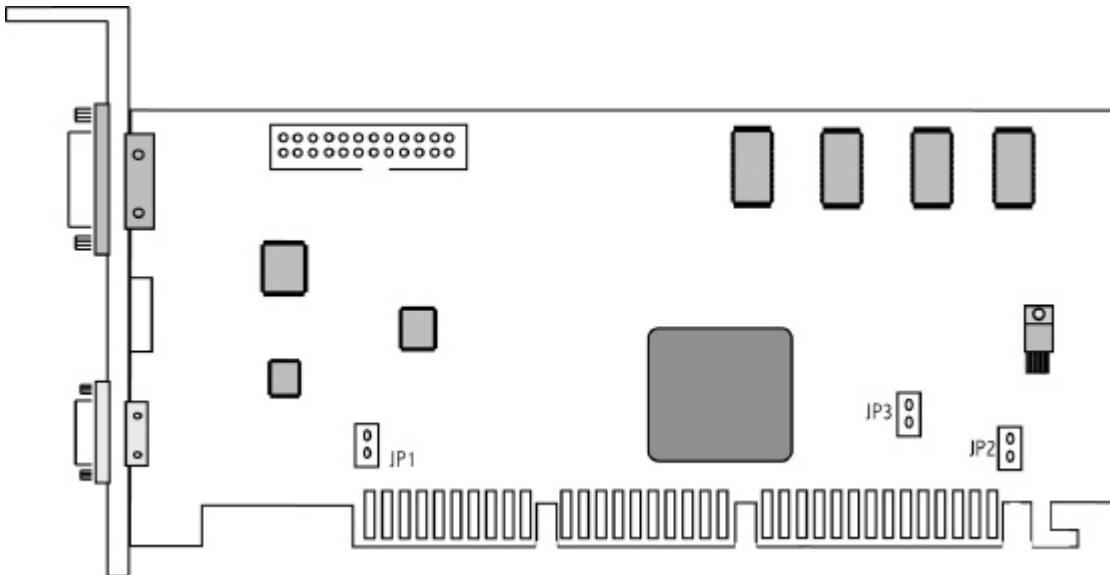
**Important**—To receive the full benefits of the AGP version of your Stealth III S540 card, you must be running either Windows 98, or Windows 95 OSR2 (version 4.00.950 B, or newer) on a system that has been updated with the **USB OSR2.1** supplement. Check the software disks that were included with your computer equipment to verify that you have the USB supplement, or contact your computer manufacturer for additional details. If you are running Windows NT 4.0, you must be updated with the latest Service Pack. Service Pack 4 is the current version available from Microsoft.

## Setting the Jumpers for Your Card

Your Stealth III S540 card may require certain jumper settings to operate properly on either AGP 1x, 2x or 4x motherboards. If there are no jumpers on your Stealth card, continue to the section Before You Install Your Card... You must first determine whether your AGP motherboard supports an AGP 1x, 2x or 4x configuration. Consult your computer or motherboard manufacturer's user guide to verify what it supports.

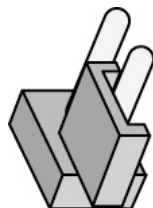
**Note:** The factory default jumper settings are for AGP 1x or 2x. If you have a 1x or 2x motherboard, do not make any changes to the jumpers on the card—you can continue with Before You Install Your Card... If you have an AGP 4x motherboard, use the instructions below to set the jumpers.

The Stealth III S540 card has three 2-pin jumpers located on the card. They are visible on the following illustration as **JP1**, **JP2**, and **JP3**.



To change the jumpers to the AGP 4x configuration:

1. Move jumpers JP1, JP2, JP3 from the (factory default) position to the closed position:



Jumper JP1-3, open position (factory default)



Jumper JP1-3, closed position

2. Your card is now set to the AGP 4x configuration.



## Before You Install Your Card...

Before you install your Stealth III S540 PCI or AGP card, it is recommended that you set your display driver to Standard VGA before you shut down your computer and then remove your current VGA card, if applicable.

### Setting the Standard VGA Under 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 press the **Advanced Properties** button.
3. Click the **Adapter** tab, then press 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 Stealth III card.

### Setting the Standard VGA Under 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, 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 Stealth III card.

## Setting the Standard VGA Under 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 **Settings**, 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 Stealth III S540 card.



**Note**—You must have Service Pack 3 loaded for the AGP version of Stealth III S540 to operate properly. 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 procedures below to install your Stealth III S540 card.

## Installing Your Stealth III S540 Card

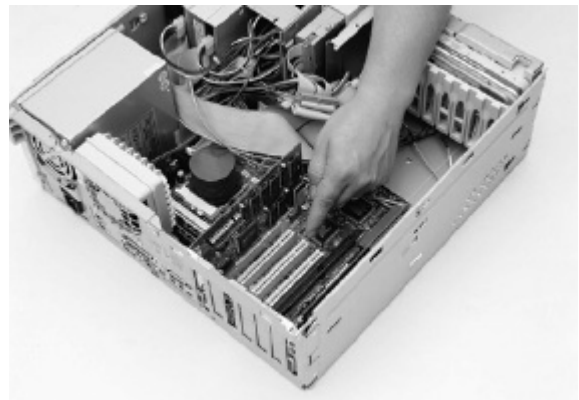
Your Stealth III S540 card will be in either an AGP or PCI form factor. Install the type you purchased according to the following directions. Please note that the illustrations provided in this section are for instructional use only; the card shown may look different than the one you purchased.

To install your Stealth III S540 PCI or AGP card, follow these steps:

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

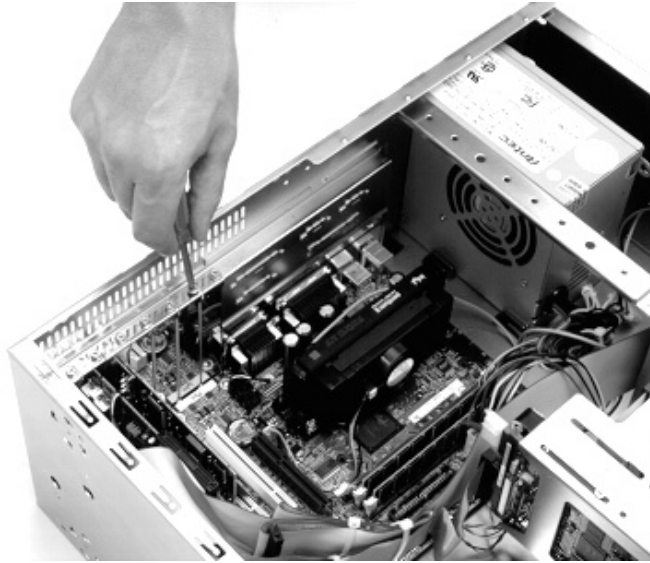


View of an AGP slot (dark color)

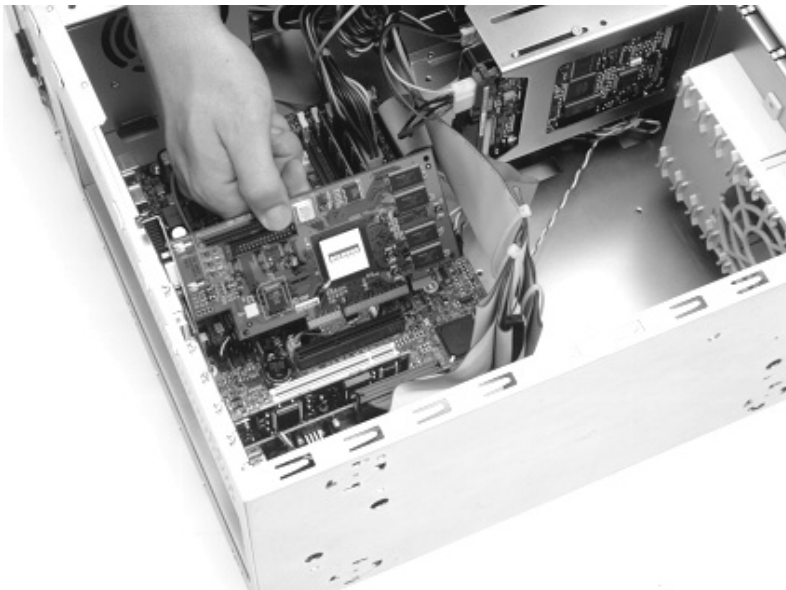


View of a PCI slot (light color)

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



3. Before handling the Stealth III S540 card, ground yourself by touching the power supply box inside your computer.
4. Position your card directly above the AGP or PCI slot as illustrated below.



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

5. Insert your Stealth III S540 card firmly into the AGP or PCI slot. Care should be taken to press it evenly and snugly into its slot. **Do not force.**



6. Once you are certain that the card is installed properly in its slot, secure it to the computer frame with the screw you removed in step 2. Make sure the card does not lift out of the AGP slot while tightening the bracket screw.



7. Connect your VGA monitor cable to the 15-pin connector on your Stealth III S540 card.
8. Secure your computer cover and reboot your computer.
9. Continue with the software installation for your operating system in the following sections.

# SOFTWARE INSTALLATION

Now that you have installed your new Stealth III S540 graphics accelerator and rebooted your computer, complete your installation using the following directions.

## Windows 98/95 and Windows NT 4.0

There are two ways to install the software for your Stealth III S540:

- ◆ Take advantage of Diamond's installation utility and make installing your drivers and Diamond software quick and easy. See Quick Installation of Diamond Drivers and Utilities.
- ◆ Install the drivers for your card manually from the Windows **Display Properties** dialog. See Manual Installation of Diamond Drivers.

### Quick Installation of Diamond Drivers and Utilities

This section covers the installation of your Diamond drivers and Diamond utilities under Windows 98/95 and NT 4.0.

After Windows 98/95 reboots, the plug-n-play feature detects your new card and gives the message that new hardware was found. Windows 98/95 may then compile a driver database. The **Add New Hardware Wizard** appears under Windows 98, and the **Update Device Driver Wizard** appears under Windows 95. When you see the Wizard, under Windows 98/95, begin with step 1 below. Windows NT 4.0 users should go to step 2 below:

1. Click **Cancel**. Your computer will finish booting up.
2. After your computer boots, insert the Diamond installation CD disk into your CD- or DVD-ROM drive. If your computer is set to "auto play," the Diamond installation program will start, go to step 5. If not, continue with step 3.
3. Double click on **My Computer**, then double-click on the letter of your CD- or DVD-ROM drive. The Diamond installation CD opens.
4. After the Diamond installation CD opens, double-click on **Start.exe**. The Diamond installation program is launched.
5. You should now see the Diamond installation screen for your Diamond product. Click **Installation**.
6. Select the **Drivers** option for your Diamond product. The **Diamond Install** screen appears. Please review the Release Notes that appear onscreen—they contain important last-minute information.
7. Click **Next**.
8. You are given a choice of installation options. Select one of the following (the Standard option is recommended):

- Minimal:** Installs only the Diamond Display Driver for your card.
- Standard:** Installs the Diamond Display Driver for your card and other Diamond utilities.
- Custom:** Allows you to choose installation Diamond Drivers, or any of the Diamond utilities that may ship with your product. At the minimum, the Diamond Stealth III S540 Display Driver must be installed during a first-time installation.



**Note**—Diamond Drivers must be installed the first time you install a Diamond product.

9. Click the button of the installation option you want. We recommend that you use the default installation directories.
10. Click **Next** to continue installation.



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

11. After the installation is complete, click **Next** to restart your computer.

Congratulations, you have successfully installed your new Stealth III S540 graphics accelerator!

## Manual Installation of Diamond Drivers

If, for some reason, you need to install the drivers for your Stealth III S540 “manually,” follow the procedures below for your operating system. If you need to update your drivers, please see the chapter on Diamond Software Tools later in this user guide.

### Windows 98/95 Manual Driver Installation

To install the driver for your Stealth III S540 graphics accelerator, go to **Start > Settings > Control Panel > Display**. The **Display Properties** page appears. Continue with the following procedure:

1. Click the **Settings** tab, then click the **Advanced** button.
2. Click the **Adapter** tab, and then click the **Change** button. The **Update Device Wizard** appears.
3. Click **Next** and choose **Display a list of all the drivers ...**
4. Click **Next** and then click **Have Disk...**
5. Insert the installation CD. If your system is set to “auto-play,” the Diamond installation program opens. Click **Quit** to exit the program.
6. From the **Install From Disk** dialog, type **X:\Win9x\English\Drivers** (where “X” is the letter of your CD- or DVD-ROM drive). Click **OK**. The .inf file for your Diamond product should appear in the **Select Device** window.

7. Choose the driver that applies to your operating system and click **OK**.
8. Click **OK** again, and then click **Next**. The driver file(s) should be copied to your system.



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

9. Click **Finish**, then click **Close**.
10. Click **Close** to exit the **Display Properties** dialog.
11. Reboot your computer.

## Windows NT 4.0 Manual Driver Installation

To install the NT 4.0 driver for your Stealth III S540 graphics accelerator, go to **Start > Settings > Control Panel > Display**. The **Display Properties** page appears. Continue with the following procedure:

1. Click the **Settings** tab, then click the **Display Type...** button.
2. Click the **Change** button. The **Change Display** dialog appears.
3. Click **Have Disk...** The **Install From Disk** dialog appears.
4. Insert the installation CD. If your system is set to “auto-play,” the Diamond installation program opens. Click **Quit** to exit the program.
5. Type **X:\NT4\English\Drivers** (where “X” is the letter of your CD- or DVD-ROM drive). Click **OK**. The **Change Display** dialog appears.
6. Select the driver for your Stealth III S540 and click **OK**.
7. If the **Third-party Drivers** window appears, click **Yes** to proceed. The driver files will now be copied to your system.
8. After you receive a message that the drivers were successfully installed, click **OK**.
9. Click **Close** in the **Display Type** dialog. You are now placed back into the **Display Properties** page.
10. Click the **Test** button to check your settings, or, click the close window box in the upper-right corner of the **Display Properties** page to exit.
11. Reboot your computer.

After you reboot, you may be requested by the system to check the display driver. Make any changes you want to your display settings at this time.

# 4

## DIAMOND SOFTWARE TOOLS

Diamond Multimedia is committed to keeping your new product running at peak performance and providing tools to fully optimize your system for your personal applications.

- ◆ INCONTROL TOOLS 99
- ◆ DIAMOND UPDATE WIZARD



### INCONTROL TOOLS 99 UTILITY

Diamond's InControl Tools 99 allows you to take charge of your Windows desktop and make Windows easier to use and control. InControl Tools 99 brings more functionality to the Windows desktop by delivering the most comprehensive set of easy-to-use 3D desktop features, enabling you to make on-the-fly display adjustments, setup keyboard shortcuts, select between Direct3D and OpenGL hardware settings and more.

InControl Tools 99 includes a unique import and export feature, which allows you to determine your own settings for your favorite PC titles and share them with other InControl Tools 99 users. A full-screen desktop preview enables you to view graphics quality and check performance from within the Diamond 3D property page as you make setting adjustments. A frame counter measures the performance and displays the frames per second. In addition, the Shortcut to URL Favorites feature provides instant access to your favorite Internet sites.

More than a set of desktop configuration features, InControl Tools 99 (ICT99) allows your Diamond video card to be the complete graphics solution for your PC.

### Key Features

- ◆ Keyboard Shortcuts



- ◆ Custom Desktop Menu with...
  - ⇒ - Resolution Switching-on-the-Fly
  - ⇒ - Color Depth Switching-on-the-Fly
- ◆ Diamond 3D Settings
- ◆ Custom Game Setting Profiles
- ◆ Shortcuts to URL Favorites
- ◆ Support for Windows 98/95



Note—Your ICT99 3D desktop features may be different depending on your graphics card.

## How is InControl Tools 99 Installed?

When you installed the drivers for your Diamond card and selected “Standard” installation, ICT99 was automatically installed. If you selected “Custom” installation and did not install ICT99 or desire to reinstall, run the “Custom” installation from the product installation CD, and choose ICT99 from the list of available options. See the Software Installation section of this user guide for information on using the product installation CD for your operating system.

For the latest updated information, please visit Diamond Multimedia’s web site at [www.diamondmm.com](http://www.diamondmm.com).

## Using InControl Tools 99

ICT99 can be launched the following ways:

1. From the Start menu, go to Programs > Diamond > InControl Tools 99.
2. Click the right mouse button on the Windows 98/95 desktop.
  - ⇒ You can click anywhere on the desktop to open the Diamond control panel
3. Click the Diamond Taskbar icon in the lower right corner on the Windows 98/95 desktop.

There are two configuration managers for ICT99 that will help you to easily configure your display and desktop features:

- ◆ InControl Desktop Properties
- ◆ InControl Desktop Manager

For more information while using ICT99, online Help is available. From any ICT window, use the right mouse button to click a feature or button to display Help.

# UPDATING YOUR DRIVERS

Diamond publishes periodic updates to the drivers for Diamond hardware installed on your system. These updates address various issues from overall product performance enhancements, to software upgrades and other improvements.

Diamond makes it easy for you to update your Diamond hardware drivers with its Update Wizard. The Update Wizard is simple and quick. If you have an Internet connection, the latest driver update is just a few mouse clicks away!

The Update Wizard is already on your system if you ran the “Standard” software installation from your product installation CD. If you did not install the Update Wizard, run the “Custom” installation from the product CD, and choose <<Update Wizard>> from the list of available options. See the Software Installation section inside this user guide for information on using the installation CD for your Diamond product.

To run the Update Wizard for Windows 98/95:

1. You should log in to your Internet account. The Wizard uses the Internet to perform its update magic.
2. Click **Start > Programs > Diamond > Update Wizard > Diamond Update Wizard**. The Update Wizard screen and Wizard appear.
3. Follow the Update Wizard’s on-screen instructions. The Wizard searches your system for any supported Diamond products, and returns a list you can browse.
4. Choose the product(s) you want to update from the provided list, and let the Wizard do the rest!



Run the Update Wizard periodically to ensure that you have the latest optimized drivers for the Diamond products installed on your system. The Wizard is so smart, he even updates himself!

# 5

## REMOVING STEALTH III S540

This section describes how to properly remove your Stealth III S540 software and hardware from your system should you need to do so.

### ◆ REMOVING STEALTH III UNDER WINDOWS 98/95

### ◆ REMOVING STEALTH III UNDER WINDOWS NT 4.0

### ◆ REMOVING DIAMOND SOFTWARE TOOLS

## REMOVING STEALTH III UNDER WINDOWS 98/95

1. From the Start menu, go to **Start > Settings> Control Panel**, then double-click on **Display**. The **Display Properties** sheet appears.
2. Click on the **Settings** tab, then press the **Advanced Properties** button.
3. Click on the **Adapter** tab, then press the **Change** button. The **Select Device** window appears.
4. Click on the **Show All Devices** bullet. Under **Manufacturers** select **Standard Display Types**. Under **Models**, select **Standard Display Adapter (VGA)**.
5. Click on **Apply**, then click on **OK** in all windows to close and accept the changes.

To remove the hardware:

1. Shut down your computer.
2. Remove the computer case as outlined in the hardware installation instructions in Chapter 3.
3. Ground yourself by touching the power supply box.

To remove the hardware, simply reverse the hardware installation procedures from Chapter 3.

## REMOVING STEALTH III UNDER WINDOWS NT 4.0

1. Select **Start > Settings > Control Panel > Add/Remove Programs**.

2. Click on the **Remove the Product** button.
3. Click **Next**.
4. When the uninstall is complete, Windows NT will automatically reboot.

To remove the hardware:

1. Shut down your computer.
2. Remove the computer case as outlined in the hardware installation instructions in Chapter 3.
3. Ground yourself by touching the power supply box.
4. To remove the hardware, simply reverse the hardware installation procedures from Chapter 3.

## REMOVING DIAMOND SOFTWARE TOOLS

To remove InControl Tools 99 or the Diamond Update Wizard software, follow the instructions for your operating system below.

### Windows 98/95

1. From the **Start** menu, click **Start > Programs > Diamond > InControl Tools 99 > Uninstall InControl Tools 99**. The Diamond Install window appears. Click **Next**.
2. Click the **Remove the product** button. A list is displayed with the software components that will be removed. Click **Next** to remove all software in the list.



**Note**—If you only want to remove one product from the list, click **Back** and click the **Add/Remove components** button. Select the item(s) you want to remove from the checklist. Click **Next** to continue.

3. After the software has been removed, restart your computer.

### Windows NT 4.0

1. From the **Start** menu, click **Start > Programs > Diamond > DIAMOND Display Component Uninstall**. The Diamond Install window appears. Click **Next**.
2. Click the **Remove the product** button. A list is displayed with the software components that will be removed. Click **Next** to remove all software in the list.



**Note**—If you only want to remove one product from the list, click **Back** and click the **Add/Remove components** button. Select the item(s) you want to remove from the checklist. Click **Next** to continue.

After the software has been removed, restart your computer.

# 6

## CONTACTING DIAMOND

### Diamond Worldwide Support and Information Services

Service	Country	Phone / Internet Address
Technical Support Diamond Multimedia Systems Inc. 7101 Supra Drive SW Albany, OR. 97321	USA	(541) 967-2450
	UK	+44-1189-4444-44
	Germany	+49-8151-266-330
	France	+33-1-55 38 16 16
	Japan	+81-(0)3-5695-8405
Email Support	USA	<a href="mailto:techsupt@diamondmm.com">techsupt@diamondmm.com</a> <a href="mailto:customerservice@diamondmm.com">customerservice@diamondmm.com</a>
	UK, France, Germany	<a href="mailto:techsupt.euro@diamondmm.com">techsupt.euro@diamondmm.com</a>
BBS	USA	(541) 967-2444
	UK	+44-1189-4444-15 (33.6 Kbps); +44-1189-4413-12 (K56flex/V.90)
	Germany	+49-8151-266-333 (28.8 Kbps); +49-8151-266-356 (K56flex/V.90); +49-8151-266-334 (ISDN)
RMA	USA	(800)-468-5846
	International	+44-1189-4444-30
World Wide Web	USA	<a href="http://www.diamondmm.com">www.diamondmm.com</a>
	UK	<a href="http://www.diamondmm.co.uk">www.diamondmm.co.uk</a>
	Germany	<a href="http://www.diamondmm.de">www.diamondmm.de</a>
	Japan	<a href="http://www.diamondmm.co.jp">www.diamondmm.co.jp</a>
Fax On Demand	USA	(800)-380-0030
	UK	+44-1189-4444-60
	Germany	+49-8151-266-332

# 7

## TROUBLESHOOTING

If you experience a problem using your Stealth III S540 card under Windows 98, there are three likely causes of your problem:

- Your application is incompatible with the Stealth III S540 or is not compatible with Direct3D or OpenGL.
- The Stealth III S540 card not properly installed (seated incorrectly).
- Stealth III S540 drivers are not correctly installed.

Try the following:

- ⇒ Check your game manufacturer's specifications to verify its compatibility with Direct3D and Stealth III S540.
- ⇒ Shut down your computer and double-check the cable connections. Make sure that the Stealth III S540 is properly seated in its AGP or PCI slot.
- ⇒ Re-install the Stealth III S540 drivers using the Stealth III Installation CD.

### Your 3D Game or Business Application is Incompatible with Stealth III

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

#### Windows 98/95

- Direct3D
- OpenGL (ICD)

#### Windows NT 4.0

- OpenGL (ICD)

If the software application you are running does not support one of these 3D APIs, your game will not be able to recognize your Stealth III S540 card, and hence will not take advantage of it. Check with the game publisher in question about obtaining a version that will support these 3D APIs.

## Stealth III S540 Card is not Properly Installed

Check to make sure that your Stealth III card is properly seated in the AGP or PCI slot and that the VGA monitor cable is firmly and correctly connected to your graphics card. For more information, please see Chapter 3, **Installing Your Stealth III S540 Card**.

## Stealth III S540 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 icon with an exclamation point appears next to the device driver in question.

## Recheck the AGP Jumper Settings

Your card has jumpers used to configure AGP 1X, 2X or 4X motherboards. The factory preset is 1X/2X AGP. Moving any one jumper without properly setting all the jumpers may result in poor performance with AGP 4X motherboards. See Chapter 3, **Hardware Installation**, for details.

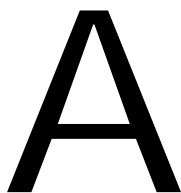
## WINDOWS 98 Q & A

**Q:** What 3D API's are supported by the Stealth III S540?

The Stealth III S540 supports and accelerates OpenGL and Microsoft's DirectX, which includes Direct3D. The Stealth III S540 also accelerates OpenGL in Windows NT 4.0.

**Q:** User receives a Windows Protection Error in "IFSMGR" when starting Windows 98.

Check to see if the user has a compressed hard drive, this seems to be the common factor with this problem. Currently, it is recommended to use uncompressed hard drives.



# STEALTH III S540 DISPLAY MODES

## Enhanced Graphics Modes

Resolution	Depth	60Hz	70Hz	72Hz	75Hz	85Hz	100Hz	130Hz	160Hz	200Hz
640x480	256	◆		◆	◆	◆	◆		◆	◆
	65K	◆		◆	◆	◆	◆		◆	◆
	16M	◆		◆	◆	◆	◆		◆	◆
720x480	256				◆					
	65K				◆					
	16M				◆					
720x576	256				◆					
	65K				◆					
	16M				◆					
800x600	256	◆		◆	◆	◆	◆		◆	
	65K	◆		◆	◆	◆	◆		◆	
	16M	◆		◆	◆	◆	◆		◆	
1024x768	256	◆	◆		◆	◆		◆		
	65K	◆	◆		◆	◆		◆		
	16M	◆	◆		◆	◆		◆		
1152x864	256	◆	◆		◆	◆	◆			
	65K	◆	◆		◆	◆	◆			
	16M	◆	◆		◆	◆	◆			
1280x1024	256	◆	◆		◆	◆	◆			
	65K	◆	◆		◆	◆	◆			
	16M	◆	◆		◆	◆	◆			
1600x1200	256	◆			◆	◆				
	65K	◆			◆	◆				
	16M	◆			◆					
1920x1080	256	◆			◆	◆				
	65K	◆			◆	◆				
	16M	◆			◆					
1920x1200	256	◆			◆					
	65K	◆			◆					
	16M	◆								
1920x1440	256	◆								
	65K	◆								
	16M	◆								



## 3D Windows 98/95 and NT Display Modes

Resolution	Depth	Single – Buffer	Double - Buffer	Double - Buffer + Z-Buffer
640x480	256			◆ ●
	65K			◆ ●
	16M			◆ ●
720x480	256			◆ ●
	65K			◆ ●
	16M			◆ ●
800x600	256			◆ ●
	65K			◆ ●
	16M			◆ ●
1024x768	256			◆ ●
	65K			◆ ●
	16M			◆ ●
1152x864	256			◆ ●
	65K			◆ ●
	16M			◆ ●
1280x1024	256			◆ ●
	65K			◆ ●
	16M			◆ ●
1600x1200	256			◆ ●
	65K			◆ ●
	16M		◆	●
1920x1080	256			◆ ●
	65K			◆ ●
	16M		◆	●
1920x1200	256			◆ ●
	65K			◆ ●
	16M	◆		●
1920x1440	256			◆ ●
	65K			◆ ●
	16M	◆	●	

◆ = 16MB    ● = 32MB



NOTE—2D and 3D modes listed may vary based upon operating system. Modes are subject to change without notice.



## STEALTH III S540 SPECIFICATIONS

### Controller:

- S3 Savage4 Pro+
- Bus Type:  
PCI 2.1 compliant  
AGP 1.0 and 2.0 compliant

### Memory:

- 16MB and 32MB

### Horizontal Sync Signals:

- 31.5KHz-108.5KHz

### Vertical Refresh:

- 60Hz-200Hz

### Maximum Dot (Pixel) Rate:

- 300MHz RAMDAC

### Complete 3D Feature Set:

- Anisotropic Filtering, Anti-Aliasing, Alpha-Blending, Bump Mapping, Gouraud Shading, Hardware Triangle Setup, Mip Mapping, Perspective Correction, Texture Mapping, Transparency (color key and alpha), Twin Texture Engine, Z-Buffering.

### Video Playback:

- MPEG-1, MPEG-2 (AGP models only), Indeo & Cinepak
- Multi-tap X and Y scaling and filtering
- Color space conversion

### Connectors:

- DB-15 analog connector (VESA DDC2B)
- Video port connector (S540)

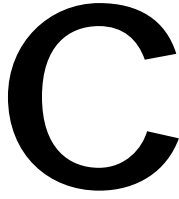
### Minimum System Configuration:

#### PCI

- Intel Pentium® 90 or compatible CPU
- One available PCI 2.1 compliant motherboard
- Windows 98/95, or Windows NT 4.0 with the latest Service Pack
- CD-ROM or DVD-ROM Drive

#### AGP

- Intel Pentium® or compatible CPU
- One available AGP 1.0 or 2.0 compliant motherboard
- Windows 98/95 with OSR 2.1 or Windows NT 4.0 with the latest Service Pack
- CD-ROM or DVD-ROM Drive



# 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 is 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. (Whichever card displays POST [Power On Self Test] in 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's 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, color palette, 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 is 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?

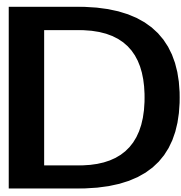
That is a limitation of the motherboard. Your primary adapter is whatever card has the highest bus priority, if you get POST out of the PCI card and not the AGP card. Contact the motherboard manufacturer for possible solutions.

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

Diamond has tested and validated up to four adapters. According to Microsoft, you can have as many adapters installed as you want if you adhere to the following: use Windows 98 drivers, verify that all the hardware is compatible, and have the resources and slots needed.

Q: How can I get OpenGL to work?

All secondary display adapters must be disabled in order for hardware OpenGL acceleration to be enabled.



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This warranty does not cover any damage caused by negligence, non-authorized modifications, or parts installed without prior written permission from Diamond.

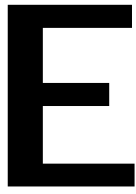
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This device complies with CE Certification pursuant to EN55022:1994-08/A1:1995 class B This device also complies with Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in residential installation. This device generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

### FCC Notice

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

# DECLARATION OF CONFORMITY

We, the Responsible Party  
Diamond Multimedia Systems, Inc.

2880 Junction Avenue

San Jose, CA 95134

*declare that the product*

Stealth III S540

*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.*