

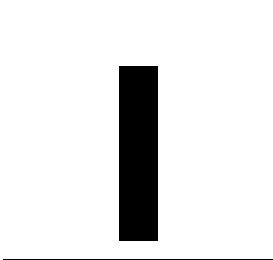
SONIC IMPACT S100

USER'S GUIDE

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ABOUT THE SONIC IMPACT S100

The Sonic Impact S100 combines rich 3D audio, high performance and reliability at a compelling cost for today's price conscious multimedia enthusiast. Based on the ESS Allegro controller and the groundbreaking MacroFX technology from Sensaura, the Sonic Impact S100 delivers support for up to four speakers, phenomenal 3D positional audio, powerful PC performance and compatibility. Designed for those who demand high fidelity audio at an affordable price, the Sonic Impact S100 is by far the best value in PC audio today!

SONIC IMPACT S100 FEATURES

Powerful features include the following:

- ◆ **Advanced PCI Audio Acceleration**
 - ◆ ESS Allegro ES1989 delivers in hardware, up to 16 independent CD-quality DirectSound3D audio streams simultaneously
 - ◆ Real-time effects processing
 - ◆ Eases the burden on your CPU for increased overall system performance translating into higher frame rates, more bandwidth for 3D audio, vibrant graphics and video and improved multi-channel support
- ◆ **Positional 3D Audio**
 - ◆ Integrated AC'97 codec
 - ⇒ HRTF 3D positional audio and DirectSound acceleration
 - ⇒ Sounds move independently on X, Y and Z-axes, enabling you to hear multiple sounds simultaneously
- ◆ **Flexibility and Expandability**
 - ◆ Four-speaker support through Stereo x2 mode
 - ⇒ Separate jacks for front and rear speakers or front speakers and headphones for PC entertainment
 - ◆ Supports powered and passive (non-powered) speakers

◆ **Optimized for Compatibility**

⇒ Accelerates Microsoft's DirectSound[®], DirectSound3D[®] (with 16 Sensasura streams), Aureal's A3D[™] 1.0, EAX 1.0 and I3D Level 2. To ensure optimal operating system support, the Sonic Impact S100 accelerates Microsoft's Windows[®] 95/98 and Windows 2000 (when available).

2

INSTALLING THE SONIC IMPACT S100

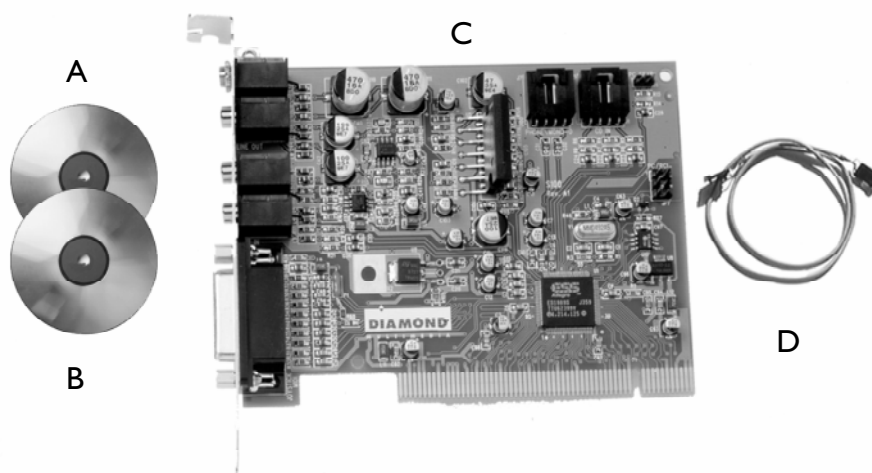
This chapter provides an overview of the Sonic Impact S100 hardware and instructions on the Sonic Impact S100 hardware and software installation.

◆ GENERAL SYSTEM REQUIREMENTS

◆ HARDWARE INSTALLATION

◆ SOFTWARE INSTALLATION

◆ INSTALLING SOFTWARE EXTRAS



A – Installation CD

B – Software Extras

C – Sonic Impact S100 PCI card

D – CD Audio Cable (MPC3)

GENERAL SYSTEM REQUIREMENTS

The following minimum requirements are recommended:

- ◆ Pentium 90MHz or faster
- ◆ 16MB of RAM
- ◆ Windows 98 or 95
- ◆ 50MB free hard disk space
- ◆ One available PCI 2.1 compliant slot
- ◆ Headphones or passive or powered speakers

Contents

Your Sonic Impact S100 kit includes the Sonic Impact S100 card, installation CD, CD audio cable, and additional software applications.

To make the Sonic Impact S100 installation proceed smoothly, install the Sonic Impact S100 hardware, install the software drivers from the installation CD disk, and then install the optional software.

HARDWARE INSTALLATION

To install the Sonic Impact S100 card, shut your computer down, and complete the following steps.

Before you install the Sonic Impact S100 card:

- ◆ Review the System Requirements for Sonic Impact S100
- ◆ Verify the operating system you have (Windows 98 or Windows 95) and what version you are running
- ◆ Be sure that Windows 98 or 95 is installed and functioning properly.
- ◆ Ground yourself by touching the power supply case
- ◆ Remove your existing sound card(s) or disable any on-board audio. If available, use your previous sound card's driver removal utility.

Installing the Sonic Impact S100 Card

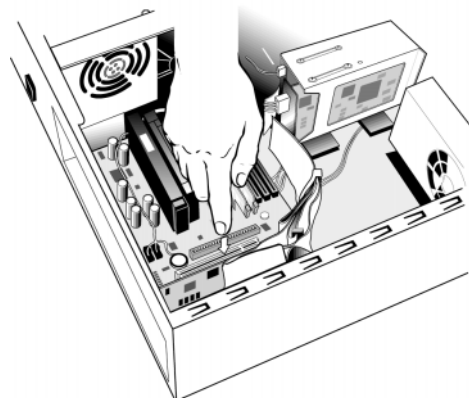
Install your Sonic Impact S100 according to the following directions. Please note that the illustrations provided in this section are for instructional use only; the card shown may look different than the one you purchased.



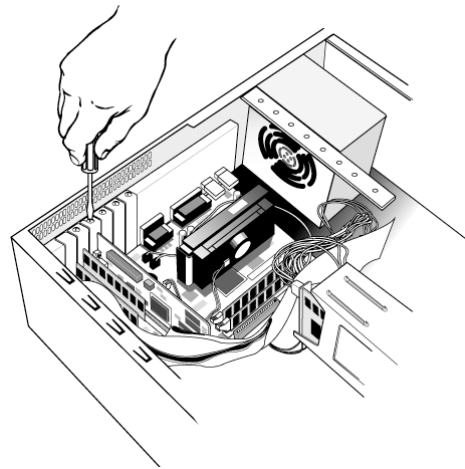
Caution—Static charges can damage electronic components. Ground yourself by touching the computer's metal case before handling any card. Remove your card from its protective bag. Handle it by the edges and do not directly touch internal components or connector contacts.

To install your peripheral card:

1. With the power off, remove your computer cover and locate an available PCI slot (light color slot).



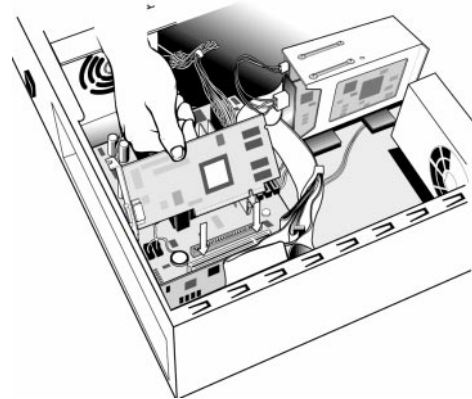
2. Remove the screw attached to the bracket cover and remove the bracket plate.



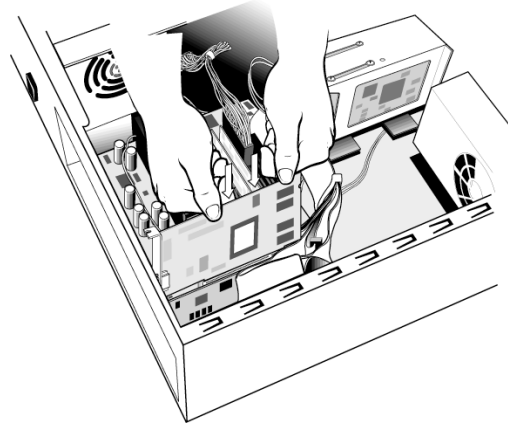
3. Position the card directly above the PCI slot.



Note—Cards are designed to fit one way only. Be sure your card is properly aligned.



4. Insert the card firmly into the PCI slot.
Take care to press it evenly and snugly into its slot. **Do not force.**



5. Once you are certain your card is installed properly in its slot, secure it to the computer frame with the bracket screw you removed in step 2.
6. If your computer has a CD-ROM or DVD-ROM drive, connect the CD-ROM audio cable to the internal connector labeled **CD In** on your Sonic Impact S100 card.
7. Reattach any previously removed cables. Next, attach any external speaker(s), joystick, and microphone connections to the Sonic Impact S100 card. See **Configuring the Sonic Impact S100**, for cable setup and connection information.
8. Secure your computer cover and reboot your computer.

SOFTWARE INSTALLATION

Now that you have installed your new Sonic Impact S100 digital audio accelerator card and rebooted your computer, complete the installation using the following directions.

There are two ways to install the software for your Sonic Impact S100:

- ◆ 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. 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.

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.

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 **Setup.exe**. The Diamond installation program is launched.
5. You should now see the Language Selection screen for your Diamond product. Select your preferred language from the list. Click **Next**.
6. The Sonic Impact S100 Welcome screen appears. Click **Next**.
7. You should now see the Online Manual screen. Click **Install** to install the Adobe Acrobat Reader, if not already installed, or click on **Manual** to view the online manual.
8. Click **Next** to continue installation.
9. Select the software you would like to install.



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

10. Select the **Drivers** installation option to install the Diamond audio driver for your card.
11. Select the **Standard** installation option. Click **Next**.
12. Please review the Release Notes that may appear onscreen—they contain important last minute information.
13. Click **Next** to continue installation.



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

14. After the installation is complete, click **Next** to restart your computer, or click **Cancel** to install additional software.

Congratulations, you have successfully installed your Sonic Impact S100 digital audio accelerator card! Continue with the section **Installing Software Extras**.

Manual Installation of Diamond Drivers

To install the drivers for your Sonic Impact S100 manually, follow the procedures below for your operating system. If you need to update your drivers, please see the chapter on Updating Your Drivers later in this user's guide.

Windows 98

After your system boots, the Add New Hardware Wizard appears. The Wizard displays the text **This wizard searches for new drivers for: PCI Multimedia Audio Device**. Windows 98 may then compile a driver database.

1. Click **Next**.
2. You are prompted with two options for finding the drivers. Select **Search for the best driver for your device**. Click **Next**.
3. You are offered several search options. Select the **Specify a location** check box.
4. Insert the Sonic Impact S100 Installation CD into your CD-ROM drive and set the path in the install window to **D:\Win9X\English\Drivers** (or replace **D** with the letter that corresponds to your CD-ROM drive). You can also click **Browse** and navigate to your CD-ROM drive.
5. Windows confirms that it has located the drivers for the **Diamond Sonic Impact S100 Device Manager**. Click **Next**.



Note—If the drivers could not be located, click **Back** and verify that the correct path to the Sonic Impact S100 installation CD has been entered.

6. Windows 98 now copies the Sonic Impact S100 driver files to your hard drive and informs you when the task is completed. Click **Finish**.

Additional drivers will now be installed. Please wait until Windows 98 finishes loading all drivers—which may take an extra minute or two.

Congratulations, you have successfully installed your Sonic Impact S100 digital audio accelerator card! Continue with the section **Installing Software Extras**.

Windows 95

There are several versions of the Windows 95 operating system. Verify your version of Windows 95 by clicking **Start > Settings > Control Panel**. After the Control Panel directory opens, double-click **System**. The designations **4.00.950 B** or **4.00.950 C** indicate you are using one of the OEM Service Releases of Windows 95. Be sure to follow the instructions below for the appropriate operating system you are using.



Notes—(1) You may need your original Windows 95 CD to complete this installation. If you are using one of the OEM Service Releases, go to the following section, **Windows 95 (versions OSR2.X)**. (2) Windows may request the original Windows CD to update or install some necessary files. Remove the Sonic Impact S100 CD and insert the Windows CD into the CD-ROM drive. Once Windows has installed the necessary components, the Sonic Impact S100 installation requests the Sonic Impact S100 installation CD. Remove the Windows CD and reinsert the Sonic Impact S100 installation CD.

Windows 95 (version 4.00.950)

After your system boots, it will inform you that it has found a new **PCI Multimedia Audio Device** and prompts you with selections:

1. Select the option **Driver from disk provided by hardware manufacturer** from the **New Hardware Found** dialog. Click **OK**.
2. Insert the Sonic Impact S100 Installation CD into your CD-ROM drive. In the space **Copy manufacturers files from**, type **D:\Win9X\English\Drivers** (or replace **D** with the letter that corresponds to your CD-ROM drive). You can also click **Browse** and navigate to your CD-ROM.
3. Windows 95 now copies the Sonic Impact S100 driver files to your hard drive. Click **OK**.
4. You may be requested to reboot your computer. If so, please restart your computer now—leaving the installation CD in the CD-ROM drive.

Congratulations, you have successfully installed your Sonic Impact S100 digital audio accelerator card! Continue with the section **Installing Software Extras**.

Windows 95 (versions OSR2.X)

This section provides driver installation procedures for the OSR2 releases (version **4.00.950 B** or **4.00.950 C**) of Windows 95. After your system boots, it will inform you that it has found a new **PCI Multimedia Audio Device** and display the **Update Device Driver Wizard**.

1. Click **Next**. Windows now searches for the location of the driver files. Wait a few moments until you see the **Other Locations** button. Click **Other Locations**.

2. Insert the Sonic Impact S100 Installation CD into your CD-ROM drive and set the path in the install window to **D:\Win9X\English\Drivers** (or replace **D** with the letter that corresponds to your CD-ROM drive). You can also click **Browse** and navigate to your CD-ROM drive.
3. Click **OK**, then click **Finish**. The driver files will be copied to their destination directories. If you are prompted for the Sonic Impact S100 Installation Disk, Click **OK**. The **Copying Files...** dialog appears.
4. Enter **D:\Win9X\English\Drivers** (or replace **D** with the letter that corresponds to your CD-ROM drive) in the **Copy files from** box. You can also click **Browse** and navigate to your CD-ROM drive.
5. Windows 95 now copies the Sonic Impact S100 driver files to your hard drive. Click **OK**.
6. You may be asked to reboot you computer. If so, please restart your computer now—leaving the installation CD in the CD-ROM drive.

Congratulations, you have successfully installed your Sonic Impact S100 digital audio accelerator card! Continue with the section **Installing Software Extras**.

INSTALLING SOFTWARE EXTRAS

Your Sonic Impact S100 kit may contain additional software applications on individual CD disks. Choose a CD of interest and install a game or application.

3

CONFIGURING YOUR SONIC IMPACT S100

The Sonic Impact S100 hardware and software can be configured in a variety of ways. This chapter outlines the connections and some basic setups you can use to get the most from your Sonic Impact S100 card.

HARDWARE

The Sonic Impact S100 card provides a number of ways for you to connect external devices such as headphones, microphones, speakers, and MIDI devices (keyboard). The following illustration describes the Sonic Impact S100 audio card connectors.

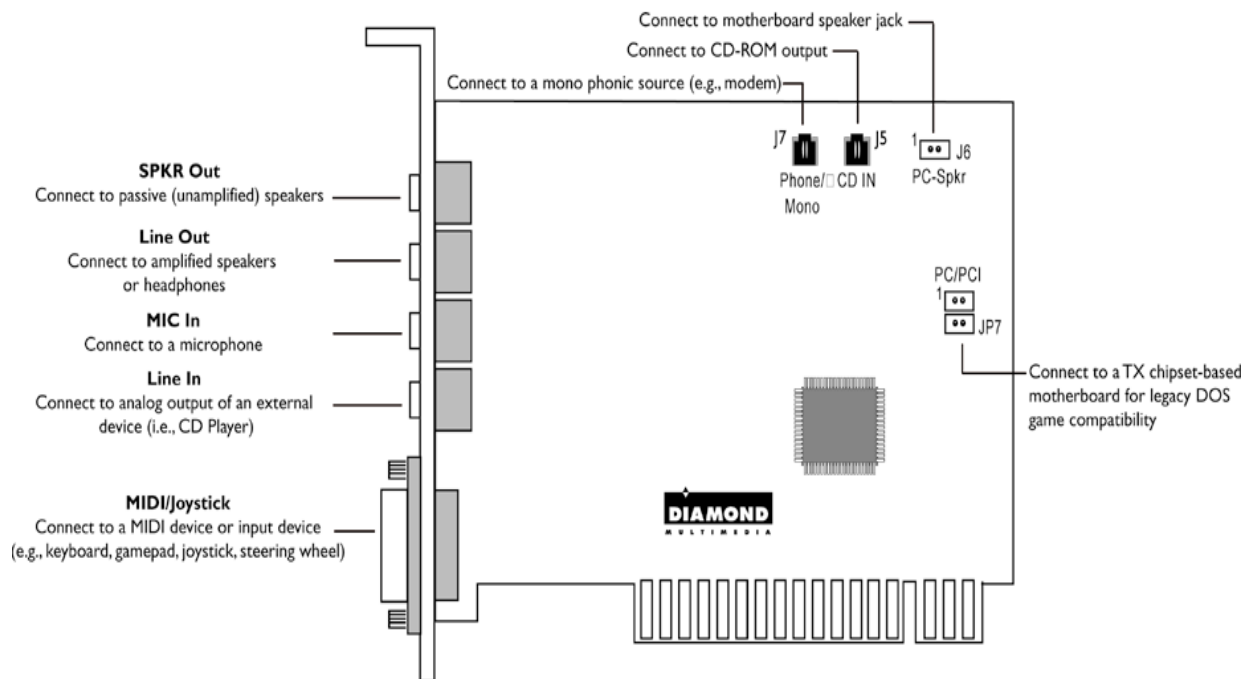


Figure - Connecting External Devices

Audio Output: 2 or 4 Speakers

The Sonic Impact S100 card has two analog stereo audio output jacks labeled **Speaker Out** and **Line Out** respectively on the mounting bracket (see the following figure).

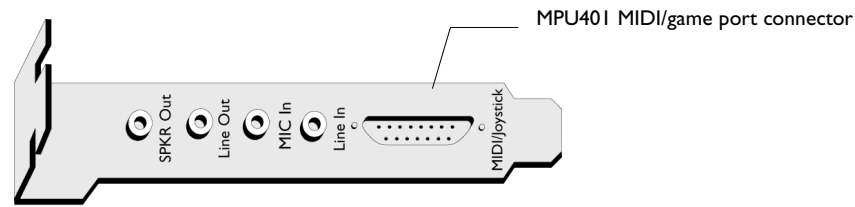


Figure – Side view of external Sonic Impact S100 I/O connector

The Sonic Impact S100 processes A3D (1.0 emulated) and DirectSound 3D multi-channel sources and automatically downmixes the signal for two speaker configurations. When using two speakers, the Sonic Impact S100 properly manages your output for realistic sound. Connect your speakers to the Sonic Impact S100 card in the following manner:

- ◆ Use **SPKR Out** with passive (non-amplified) speakers
- ◆ Use **Line Out** with amplified speakers

The Sonic Impact S100 provides four-speaker support through Stereo x2 mode. This mode causes the same stereo image to be played out on both output connectors, similar to a stereo splitter cable. It drives both headphones and speakers at the same time (i.e., if you have speakers connected to one output and headphones connected to the other output).

Using Headphones

Attach your headphones to the **Line Out** connector only.

MIDI Output

The Sonic Impact S100 card can output and accept General MIDI data from your PC to external MIDI-compatible devices. Use your favorite music software to control MIDI devices through the Sonic Impact S100 card. You can also use the powerful, built-in Sonic Impact S100 wavetable to produce concert quality instrumental music directly from music software. MIDI cables must be purchased separately.

To connect an external MIDI device to Sonic Impact S100:

1. With the computer off, insert a MIDI connector into the **MIDI/Joystick** port on the Sonic Impact S100 card.

2. Attach the opposite end of the MIDI connector to your MIDI compatible device or MIDI patch bay.
3. Restart your computer.

Legacy DOS Game Support

The Sonic Impact S100 card supports full DOS game compatibility through three hardware implementations: PC/PCI (Peripheral Component Interconnect), DDMA (Distributed DMA), and TDMA (Transparent DMA). Full DOS game compatibility is achieved over the standard PCI 2.1 bus without additional sideband signals.

The PC/PCI hardware implementation serves as a bridge between the motherboard and Sonic Impact S100 card to deliver Sound Blaster compatibility for real-mode DOS games. If you desire to use the PC/PCI hardware implementation, the jumper configuration is needed only for TX chipset-based motherboards.

To configure for the PC/PCI hardware implementation, you must connect one end of the PC/PCI cable to connector JP7 (PC/PCI) on the Sonic Impact S100 card, and the other end to the PC/PCI connector on your motherboard. Please consult the motherboard documentation for information on where to locate the PC/PCI cable and connector on your motherboard.

4

TROUBLESHOOTING AND GENERAL Q & A

Why am I prompted for the Windows 98/95 CD when installing Sonic Impact S100?

The reason Windows 98/95 prompts you for the CD is because it needs one or more of Windows system components that are not installed on your system. These are typically audio components that are required when using Sonic Impact S100. These components include, but are not limited to:

- ◆ Joystick drivers
- ◆ Audio Compression modules
- ◆ Volume Control (Mixer)
- ◆ Sound Recorder

If Windows prompts you for the Windows 98/95 Installation CD:

1. Remove the Sonic Impact S100 CD from the CD-ROM drive.
2. Insert the Windows 98/95 CD.
3. After the Windows components are installed, you will be prompted for the Sonic Impact S100 CD.
4. Remove the Windows 98/95 CD from the CD-ROM drive.
5. Insert the Sonic Impact S100 CD.
6. The Sonic Impact S100 setup program should start automatically. Follow the on-screen instructions to complete the software installation.

Will the Sonic Impact S100 work with my existing ISA sound card (i.e. Sound Blaster compatible)?

Yes, Sonic Impact S100 will work with your existing sound card. However, the Sonic Impact S100 is a comprehensive audio solution. It provides complete Windows support (98/95) and DOS legacy Sound Blaster emulation. Therefore, it is recommended that you remove your legacy sound card, or disable your motherboard's legacy audio function.



Note—Although the Sonic Impact S100 fully complies with the PCI 2.1 Specification, you may experience a resource conflict with other onboard sound cards and Sonic Impact S100. To eliminate any potential conflict, disable the onboard sound option through the system's BIOS configuration or setup. Please consult the motherboard documentation or computer manufacturer for additional information.

A

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.

UPDATE WIZARD

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 software can be installed from your product installation CD. If you did not install Update Wizard or desire to reinstall, run the product installation CD and choose Update Wizard from the list of available options. See the Software Installation section of this user's guide for information on using the product installation CD for your operating system.

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!



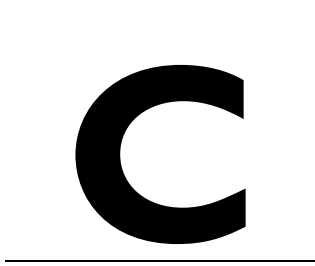
Run the Update Wizard periodically to ensure that you have the latest optimized drivers for the Diamond products installed on your system. The Wizard is so smart, he even updates himself!



CONTACTING S3/DIAMOND

Worldwide Support and Information Services

Service	Country	Phone / Internet Address
Technical Support S3/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	customersupport@diamondmm.com customerservice@diamondmm.com
	Japan	support@diamondmm.co.jp
	UK, France, Germany	techsupt.euro@diamondmm.com
BBS	Germany	+49-8151-266-333 (28.8 Kbps); +49-8151-266-356 (K56flex/V.90); +49-8151-266-334 (ISDN)
RMA (please call Technical Support for RMA authorization, prior to calling the RMA center)	USA	(800)-468-5846
	International	+44-1189-4444-30
World Wide Web	USA	www.diamondmm.com
	UK	www.diamondmm.co.uk
	Germany	www.diamondmm.de
	Japan	www.diamondmm.co.jp
	France	www.diamondmm.fr/fra/support/faqs.htm
Fax On Demand	USA	(800)-380-0030
TTY/TDD	USA	(541) 967-2451



SPECIFICATIONS

Operating System Support

- ◆ Windows 98/95 and Windows 2000 (when available)
- ◆ Real-mode MS-DOS

API Compatibility

- ◆ DirectSound, DirectSound3D, and DirectInput
- ◆ DirectMusic
- ◆ A3D version 1.0
- ◆ MacroFX
- ◆ EAX 1.0
- ◆ I3DL2 (reverb API)

Minimum System Requirements

- ◆ Pentium 90MHz
- ◆ 16MB memory
- ◆ 50MB free hard disk space
- ◆ One available PCI 2.1 compliant slot
- ◆ Headphones or passive or powered speakers

Hardware Specifications

Audio Processing Chipset:	PCI Controller: ESS Allegro
Audio Codec:	Stereo AC'97 2.1 Codec
Wavetable:	320-voice DLS wavetable engine
Bus Type:	PCI 2.1
Signal-to-Noise-Ratio:	~96dB
Sample Rates:	Up to 48kHz
External Audio Output:	2 - Buffered Stereo Line Level Outputs
External Audio Input:	MIC Input, Stereo Line Input
Internal Audio Input:	CD, Monophonic source
Other External Connectors:	MPU401 MIDI/Joystick Game Port

D

GLOSSARY OF TERMS

SONIC IMPACT GLOSSARY

A3D

An API for handling 3D positional sounds and Doppler effects. Using algorithms developed for NASA, A3D is able to simulate 3D positional sounds on two speakers. A3D will support four or more speakers, but is optimized for two.

DS3D

Microsoft's 3D audio API helps game developers define where sound should be placed in the 3D space and how loud it should be. The location where each sound should be placed is then passed on to your DS3D capable sound card that uses some clever algorithms to place the sound in 3D space.

EAX

Environmental Audio Extensions (EAX) API for enhancing interactive gaming software. The EAX API extends Microsoft's DirectSound® and DirectSound 3D®, adding reverb, echo, and other effects consistent with the room acoustics, position of the player, source of the sound, and many other cues.

Head Related Transfer Function (HRTF)

Algorithms that produce head related transfer functions that provide audio through a filter that incorporates the effects of sounds reflecting off a listener's head, shoulders and outer ears. Input for HRTF-based 3D audio include the monaural sound source signal, the listener's position and orientation, and the position of the sound source, while the output is projected in a multi-speaker environment.

I3DL2 (Interactive 3D level 2)

Offers a standardized artificial reverberation interface for creating virtual audio scenes and worlds, including the possibility for sound sources and the listener to move interactively between distinct audio environments and within an environment. With I3DL2, principal 3D positional and environmental cues can be dynamically updated in accordance with interactive movements. It includes occlusion and obstruction features that make it possible to render the muffling of sounds as they travel through or around walls and obstacles, whether these sounds emanate from a different room or from the same environment as the listener.

MacroFX

Creates special close-up 3D “near-field proximity effects,” so that sounds seem to be very close to the game player (i.e., whispering in the ear, wind noises and ultra close fly-by).

MultiDriveTM

Sensaura’s 3D positional audio technology that incorporates a patented multi-speaker capability for creating 3D sound fields using four or more loudspeakers. This is achieved by using each speaker pair to create frontal and rearward hemispheres respectively. The frontal and rearward sound hemispheres are seamlessly integrated together, such that any number of virtual sound sources can be made to move around the listener, controlled by DirectSound3D. In addition, Sensaura’s MultiDrive technology uses patented Sensaura transaural crosstalk cancellation algorithms that ensure optimal performance. Multi-speaker system owners are no longer restricted to flat, 2D sound panning, but can enjoy the full benefits of immersive 3D-sound.

Reverb

The sound you hear can be split up in a direct path sound and a reflected sound. Direct path is the actual sound produced by the sound source (the original sound) as it travels directly to your ear. The reflections are called reverb, which is the sound waves that have bounced (i.e., reflected) around on the walls or other objects before they arrive in your ear. What you will hear is the combination of original sound and the reverb. The ratio original reverb/sound source is called the wet/dry ratio. The shape, size and materials of the room/environment and the distance to the sound source will determine the reverb.



TRADEMARK, WARRANTY AND CERTIFICATION INFORMATION

Trademarks

All trade names referenced in this manual are the service mark, trademark, or registered trademarks of their respective manufacturers. S3/Diamond reserves the right to change specifications without notice.

Sonic Impact S100 Warranty

Your Sonic Impact S100 kit comes with a three-year hardware warranty. S3/Diamond Multimedia Systems, Inc., (S3/Diamond) warrants Sonic Impact S100 against defects in material and workmanship for a period of one year from the date of purchase from S3/Diamond or an authorized S3/Diamond agent. This warranty applies only to the original purchaser of the Sonic Impact S100 kit and is not transferable. This warranty does not cover any incompatibilities due to the user's computer, hardware, software or any other related system configuration in which Sonic Impact S100 interfaces. Proof of purchase will be required before any warranty consideration by S3/Diamond occurs.

This warranty does not cover any damage caused by negligence, non-authorized modifications, or parts installed without prior written permission from S3/Diamond.

This warranty does not apply if the product has been damaged by accident, abuse, misuse, or misapplication, nor as a result of service to the product by anyone other than by S3/Diamond.

S3/DIAMOND IS NOT RESPONSIBLE FOR ANY LOST PROFITS, LOST SAVINGS OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF, OR INABILITY TO USE, THIS PRODUCT. THIS INCLUDES DAMAGE TO PROPERTY AND, TO THE EXTENT PERMITTED BY LAW, DAMAGES FOR PERSONAL INJURY. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Some states do not allow limitation of implied warranties, or exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights. You may have other rights that may vary from state to state.

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

Certification Information

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and radiates radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna (television, radio, etc.).
2. Increase the separation between the equipment and receiver.
3. Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for additional help.

Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. Contact S3/Diamond Multimedia Systems, Inc., 7101 Supra Drive SW, Albany OR 97321. Technical Support tel: 541-967-2450. 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. **Warning:** Using this product in any way other than as described in this manual or altering the antenna in any way may violate FCC rules. FCC ID JJ4-GP9450-H (Handset) FCC ID JJ4-GP9450-R (Receiver)

Canadian Radio Interference Regulations

This Class B digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations. Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.