

Getting Started

BLASTER[®]

Live!

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Version 2.0, June 1998

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Getting Started

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Version 1.00

July 1998

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4,506,579; 4,699,038; 4,987,600; 5,013,105; 5,072,645; 5,111,727; 5,144,676; 5,170,369;
5,248,845; 5,298,671; 5,303,309; 5,317,104; 5,342,990; 5,430,244; 5,524,074; 5,698,803;
5,698,807; 5,748,747; 5,763,800.

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The following sections contain notices for various countries:

Safety Information

CAUTION: This device is intended to be installed by the user in a CSA/TUV/UL certified/listed IBM AT or compatible personal computers in the manufacturer's defined operator access area. Check the equipment operating/installation manual and/or with the equipment manufacturer to verify/confirm if your equipment is suitable for user-installed application cards.

ATTENTION: Ce carte est destiné à être installé par l'utilisateur, dans un ordinateur compatible certifié CSA/TUV/UL ou listé IBM AT, à l'intérieur de la zone définie par le fabricant. Consulter le mode d'emploi ou le fabricant de l'appareil pour vérifier ou confirmer si l'utilisateur peut y installer lui-même des cartes périphériques.

Notice for the USA

FCC Part 15: 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 can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, this notice is not a 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 one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician.

CAUTION: To comply with the limits for the Class B digital device, pursuant to Part 15 of the FCC Rules, this device must be installed in computer equipment certified to comply with the Class B limits.

All cables used to connect the computer and peripherals must be shielded and grounded. Operation with non-certified computers or non-shielded cables may result in interference to radio or television reception.

Modifications

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the device.

Notice for Canada

This apparatus complies with the Class "B" limits for radio interference as specified in the Canadian Department of Communications Radio Interference Regulations.

Cet appareil est conforme aux normes de CLASSE "B" d'interférence radio tel que spécifiée par le Ministère Canadien des Communications dans les règlements d'interférence radio.

Declaration of Conformity

According to the FCC96 208 and ET95-19

Name: *Creative Labs Inc.*

Address: *1901 McCarthy Boulevard
Milpitas, CA. 95035
United States
Tel: (408) 428-6600*

declares under its sole responsibility that the product

Trade Name: *Creative Labs*

Model Number: *CT4620/CT4660*

has been tested according to the FCC / CISPR22/85 requirement for Class B devices and found compliant with the following standards:

EMI/EMC: ANSI C63.4 1992, FCC Part 15 Subpart B

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 undesirable operation.

Ce matériel est conforme à la section 15 des règles FCC. Son Fonctionnement est soumis aux deux conditions suivantes:

1. Le matériel ne peut être source D'interférences et
2. Doit accepter toutes les interférences reçues, Y compris celles pouvant provoquer un fonctionnement indésirable.

Supplementary:

CT4660 is an optional add-on board for CT4620. It's providing SPDIF In/Out, and MIDI In/Out to any external device.

*Compliance Manager
Creative Labs, Inc.
April 28, 1998*

Compliance

This product conforms to the following Council Directive:

- Directive 89/336/EEC, 92/31/EEC (EMC)

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Creative Technical Services

Introduction

Congratulations! You're now a proud owner of Sound Blaster™ Live!™— the first in the Environmental Audio™ family of audio cards from Creative. Sound Blaster Live! is the ultimate platform for the Environmental Audio experience. At the heart of Sound Blaster Live! is EMU10K1™, a new processor from E-mu Systems that is based on E-mu's highly acclaimed Emulator IV sound module and Darwin hard disk recorder. Leveraging over 25 years of expertise, the EMU10K1 with more than 2 million transistors and 1,000 MIPs of audio processing power is capable of delivering intensive digital mixing and effects processing for a truly immersive Environmental Audio experience. The EMU10K1 is also endowed with these powerful features:

- ❑ Advanced hardware-accelerated digital effects processing
- ❑ 32-bit digital processing, maintaining a 192 dB dynamic range
- ❑ Patented 8-point interpolation that reduces noise/distortion to inaudible levels
- ❑ 64-voice hardware wavetable synthesizer
- ❑ Professional-quality digital mixing and equalization

In addition to the high-performance EMU10K1 audio processor, key technologies in the form of several complex audio processing and modeling algorithms are implemented for Environmental Audio:

- ❑ E-mu Environmental Modeling™
E-mu has developed a method for accurately positioning audio objects in a

3D space, calculating the necessary audio reflections, and ultimately rendering the 3D environmental audio model. Through extensive research, E-mu has produced a *real* 3D experience by successfully combining the best of multi-speaker and psycho-acoustic 3D audio.

- ❑ DynaRAM™
Creative's new patent-pending DynaRAM technology makes the downloading of sound samples more robust by dynamically allocating host memory for storing and processing the samples—doing away with the need for onboard audio card memory.
- ❑ SoundFont®
SoundFont banks are software libraries of sampled musical instrument sounds. Unlike traditional wavetable synthesis that made use of compressed sound presets stored on the audio card's limited memory, SoundFonts can be easily downloaded onto host memory as needed. Less constrained by memory size, SoundFonts can “capture” the full expressiveness, tone and color of sounds to deliver the realism expected of Environmental Audio.
- ❑ Creative Multi Speaker Surround™ (CMSS™)
CMSS, a novel multi-speaker technology from Creative, allows Sound Blaster Live! to support configurations of 4 to 8 speakers. With professional-quality panning and mixing, independent multiple sound sources can be moved and placed seamlessly around a listener. When combined with the E-mu Environmental Modeling technology on the EMU10K1, the user is presented with an audio experience so real that it sounds Live!

Checking System Requirements

For Creative software, your cards require at least:

- Intel Pentium® class 133 MHz or equivalent processor
- Windows 95, 98 or Windows NT 4.0
- 16 MB RAM for Windows 95/98 (32 MB RAM recommended), 32 MB RAM for Windows NT 4.0
- 72 MB of free hard disk space for Windows 95/98; 55 MB for Windows NT 4.0
- 1 free PCI bus slot for the main card and 1 free bracket for the Audio Extension card
- Powered speakers or external amplifier (recommended: Cambridge SoundWorks speakers)

Bundled software may require an optimum system configuration in excess of the above. Refer to their individual online documentation or specifications on the outer box for details.

Before You Begin

The README file on the installation CD-ROM contains information and changes not available at the time of printing. Read the file before you continue. The following sections are also recommended:

- Using This Guide
- Getting More Information

- Document Conventions

Using This Guide

Chapter 1 shows you how to install the audio cards into your computer. Chapters 2 and 3 discuss the installation procedures of the audio software in Windows 95/98 and Windows NT 4.0 respectively.

For information on installation and troubleshooting, see the appendices.

Getting More Information

See the online *User's Guide* for MIDI specifications and connector pin assignments, as well as instructions on using the various applications in your audio package.

Document Conventions

This guide uses the following conventions to help you locate and identify the information you need:

Table i: Text conventions.

Text In	Represents
bold	Text that must be entered exactly as it appears.
<i>italic</i>	Title of a book or a placeholder, which represents the information you must provide.
UPPERCASE	Directory name, file name, or acronym.
<>	Symbols, letters, and key names on the keyboard.

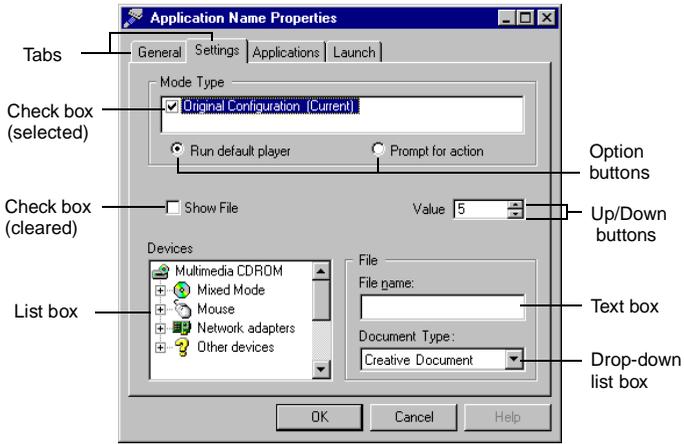


Figure i: Interface naming conventions.

Knowing and Installing Your Cards

This chapter is organized as follows:

- On the Audio Cards
- To install the cards and related peripherals

On the Audio Cards

Your main card has these jacks and connectors which allow you to attach other devices:

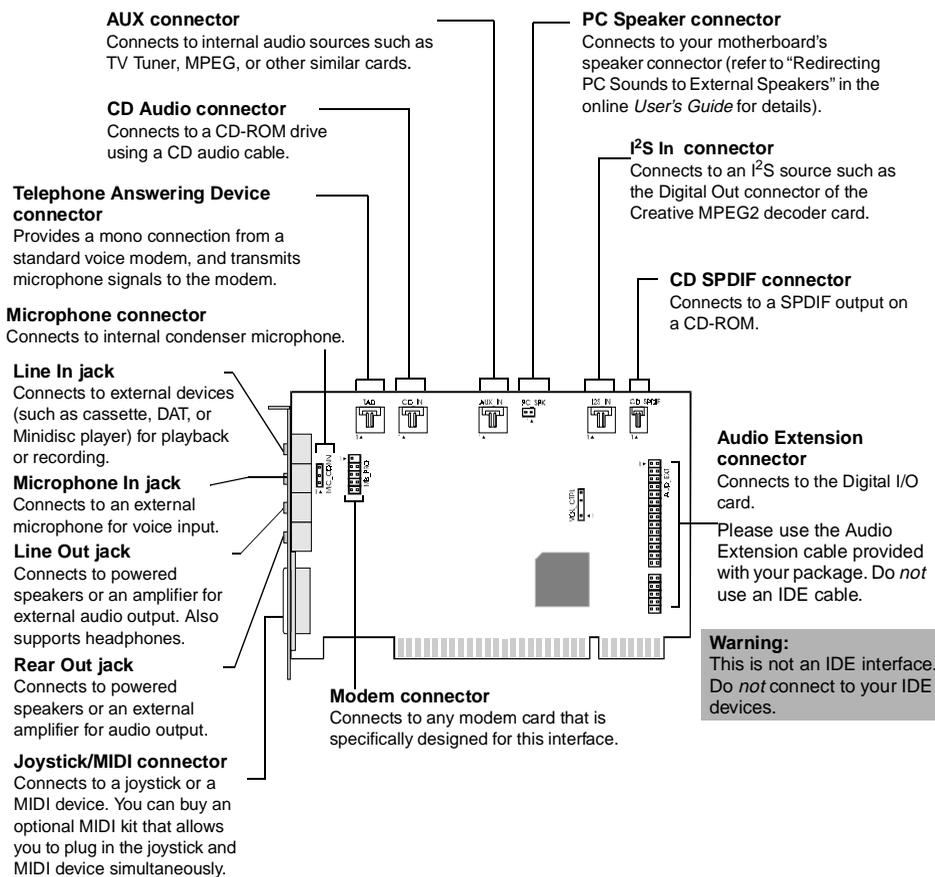
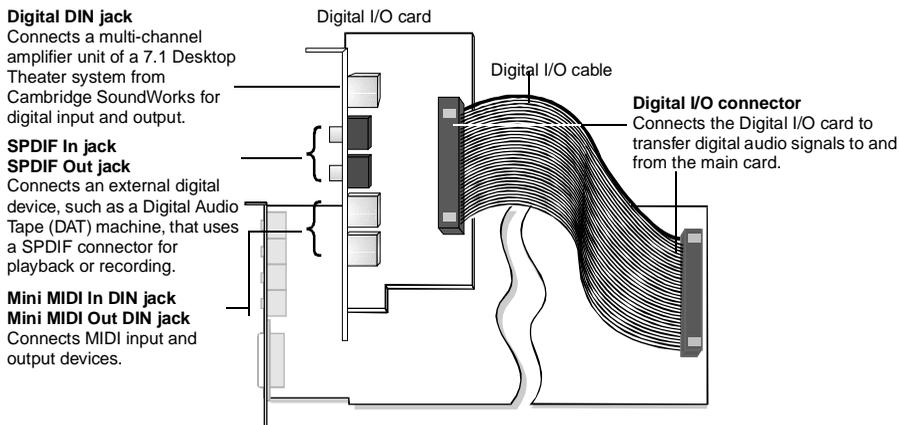


Figure 1-1: Jacks and connectors on the audio main card.

Note: Jacks are one-hole connecting interfaces whereas connectors consist of many pairs of pins. Some connectors here may not be available on your card. Refer to the online *User's Guide*, "Hardware Information", for details on connector pin assignments.

Line Out and Rear Out jacks can be used simultaneously to power 4.1 channel speaker systems, for example, PCWorks FourPointSurround from Cambridge SoundWorks.

Your Digital I/O card has these jacks and connectors which allow you to attach other devices:



Note: It is recommended that you use the MIDI In jack of the Digital I/O card to connect a MIDI input device and thus dedicate the Joystick/MIDI connector on the main card to joystick use. There can be only one MIDI input device connected to the Sound Blaster Live! cards and in use at any one time.

Figure 1-2: Jacks and connectors on the Digital I/O card.

To install the cards and related peripherals

1. Switch off your system and all peripheral devices.
2. Touch a metal plate on your system to ground yourself and to discharge any static electricity, and then unplug the power cord from the wall outlet.
3. Remove the cover from your system.
4. Connect the Digital I/O card to the main card using the Digital I/O cable, as shown in Figure 1-2.
5. Remove the metal plates from two unused PCI expansion slots in your system and put the screws aside, to be used later. If you have only one unused PCI expansion slot, then you must have at least an unused bracket on your computer casing to accommodate the PCI-oriented Digital I/O card.

- Align the main card with the vacant PCI expansion slot. Press the card gently and evenly into the slot as shown. Ensure that the card sits firmly inside the PCI expansion slot.

Warning: Do not force the audio card into the slot. If it does not fit properly, gently remove it and try again.

- Secure the card to the expansion slot with a screw.

- Fasten the card to the slot with a screw.

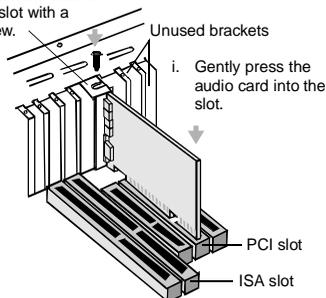


Figure 1-3: Securing the audio card to the PCI expansion slot.

- Place the metal bracket of the Digital I/O card into an unused bracket on the computer casing.

Warning: Make sure there is sufficient space between the Digital I/O card and the adjacent card (especially if it is an ISA card) such that the cards do not touch.

- Secure the card to the casing with a screw.
- Connect PCWorks FourPointSurround or other high quality speakers from Cambridge SoundWorks to the Line Out and Rear Out jacks as shown in Figure

1-4. Figure 1-5 shows the recommended positions of a 4-speaker configuration. For a list of other possible configurations, see Table 1-1. To learn how to connect the rest of the devices, see Figure 1-6.

Note: The joystick connector on your audio card is identical to that on a standard PC game control adapter or the game I/O connector. You can connect any analog joystick with a 15-pin D-shell connector or any device compatible with the standard PC joystick. To use two joysticks, you need a Y-cable splitter.

- Replace the cover onto your system.
- Plug the power cord back into the wall outlet, and switch on the system.

Notes:

Sound Blaster Live! is optimized for multiple speaker playback so that you can best experience:

- Environmental Audio on existing multimedia applications
- 3D Audio positional sound (DirectSound3D)
- DirectSound Environmental Audio eXtensions (EAX)

For multiple-speaker playback, it is recommended that you purchase PCWorks FourPointSurround or other high quality speakers from Cambridge SoundWorks. Alternatively, you can connect two pairs of powered speakers.

If you are using a pair of headphones, connect them to the Line Out jack.

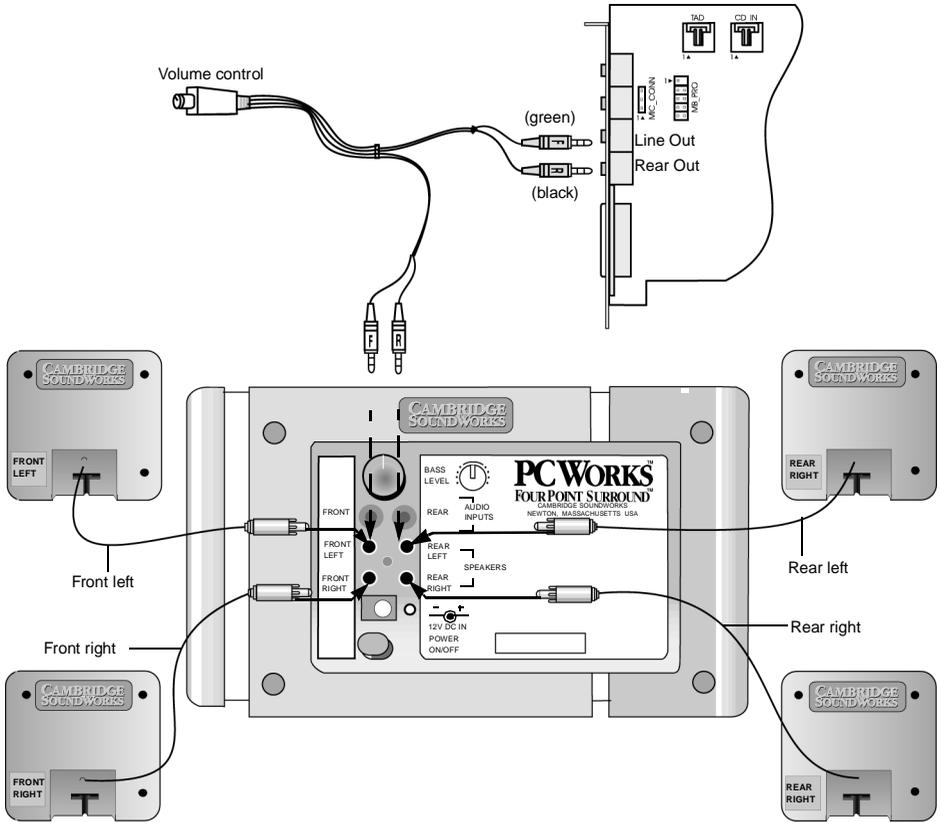


Figure 1-4: Connecting PCWorks FourPointSurround.

Table 1-1: Recommended connection to Line Out and Rear Out jacks.

For	Configuration	Connect To
Surround Sound and 3D Audio	4.1 powered speakers (for example, PCWorks FourPointSurround)	Line Out and Rear Out
	2 pairs of powered speakers	Line Out and Rear Out
Stereo	1 pair of powered speakers	Line Out
	1 pair of non-powered speakers and a stereo amplifier	Line Out
	2.1 powered speakers (for example, PCWorks or MicroWorks)	Line Out
	headphones	Line Out

If you are using four speakers, place them such that they form the corners of a square with you are exactly in the centre (as in Figure 1-5) and they are angled toward you. Make sure the computer monitor is not blocking the path of your front speakers. You may want to adjust the relative positions of the speakers until you get the best audio experience. If you have a subwoofer, place the unit in a corner of the room for the optimum bass response.

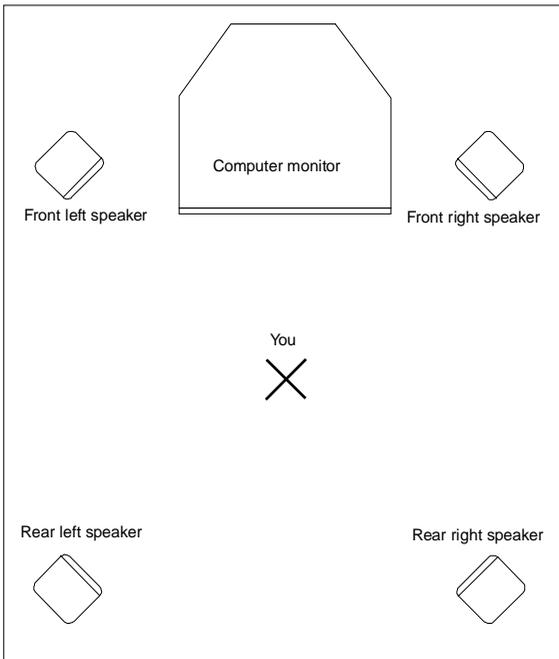
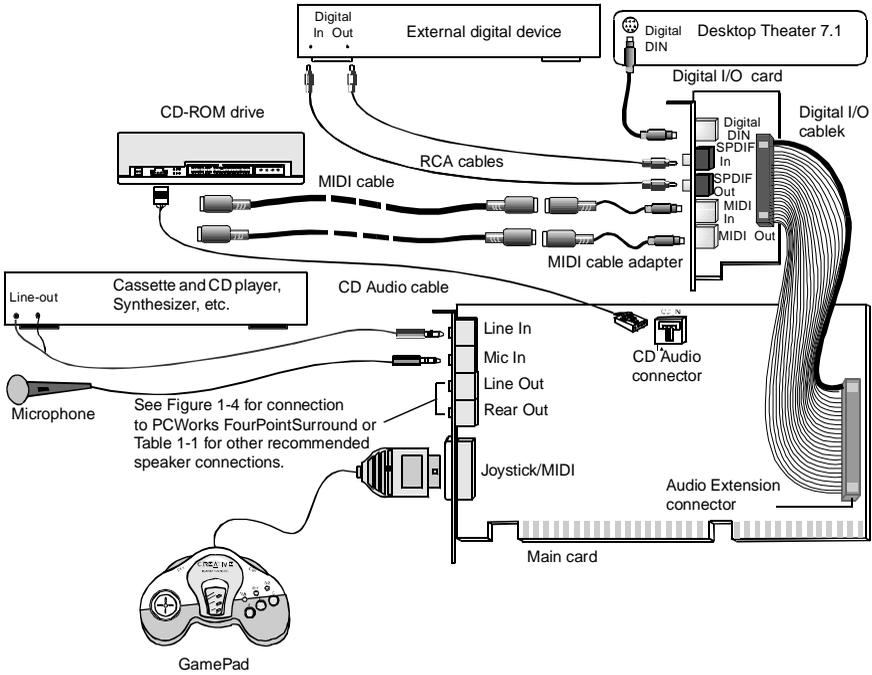


Figure 1-5: Recommended speaker positions for the 4-speaker configuration.



Note: The SPDIF In jack on the Digital I/O card is not meant to receive Dolby Digital or AC-3 compressed SPDIF signal. Therefore, do not connect it to your AC-3 SPDIF Output of your Encore Dxr2 card or consumer DVD player or else you might not get any sound.

Figure 1-6: Connecting other devices.

Installing Software in Windows 95/98

This chapter shows you how to install the audio software in Windows 95/98 after installing your card. It consists of the following sections:

- Setting Up the Audio Drivers
- Installing the Applications
- Using Sound Blaster Live!
- Configuring Your Speakers
- Uninstalling the Applications
- Reinstalling the Audio Drivers From the Installation Disc

Setting Up the Audio Drivers

You need device drivers to control the components on your audio card. After you have installed the card and switched on your system, Windows 95/98 automatically detects the components, and then either installs the drivers automatically or prompts you for the drivers. You may encounter the following messages, which may not be in the sequence shown.

- If a message similar to Figure 2-1 appears, just take note of it and wait for the next message.

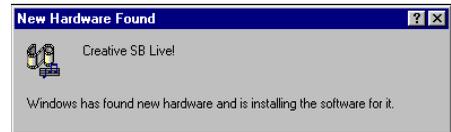


Figure 2-1: Message box indicating the detection of a device.

- If a dialog box similar to Figure 2-2 appears, click the Driver From Disk Provided By Hardware Manufacturer option, and then click the OK button. If you are prompted for the Windows 95 installation diskette or disc, insert it into a drive, and then click the OK button.



Figure 2-2: Driver installation dialog box where the Windows default driver option is not available.

- ❑ If the Insert Disk dialog box or a dialog box similar to Figure 2-3 appears:
 1. Insert the installation CD into your CD-ROM drive and select the drive.
 2. If there is a Specify A Location check box, make sure it is selected.
 3. Click the Browse button and select the folder
AUDIO\Language\WIN95DRV
 where *Language* is the language of the software that you want to install.
 4. Click the OK button.
 The required files are copied to your hard disk.



Figure 2-3: Windows 98 Add New Hardware Wizard dialog box.

- ❑ If a dialog box similar to Figure 2-4 appears:



Figure 2-4: Update Device Driver Wizard dialog box when driver cannot be found.

1. Click the Other Locations button.
2. At the Select Other Locations dialog box, click the Browse button and select the folder
AUDIO\Language\WIN95DRV
 where *Language* is the language of the software that you want to install.
3. Click the OK button, and then click the Finish button.
 Some of the required files are copied to your hard disk. However, an error message stating that the A3D.DLL file cannot be found also appears.
4. Click the OK button.
5. At the Copying Files dialog box, click the Browse button and select the folder
AUDIO\Language\WIN95DRV
 where *Language* is the language of the software that you want to install.
6. Click the Open button, and then click the OK button twice.
 The A3D.DLL file is copied to your hard disk.

- ❑ If a dialog box similar to Figure 2-5 appears, click the Next button, and follow the instructions on the screen to complete the installation of the driver.



Figure 2-5: Update Device Driver Wizard dialog box at start of installation.

- ❑ If a Version Conflict message box appears about VJOYD.VXD and MSJSTICK.DRV, click the Yes button to keep the files.

Installing the Applications

1. If your installation disc is already in your CD-ROM drive, eject the disc and insert it again.
The disc supports Windows AutoPlay mode and starts running automatically. If not, see “Problems Installing Software” on page D-1.
2. Follow the instructions on the screen to complete the installation.

Note: It is highly recommended that you install SB Live! Experience. It appears as a check box on the AutoPlay screen.

Using Sound Blaster Live!

Congratulations! You have successfully installed Sound Blaster Live! To enhance your experience, it is highly recommended that you run these programs:

SB Live! Experience

Demonstrates the many wonderful experiences Sound Blaster Live! can give you.

To run SB Live! Experience, bring your pointer to the top of the screen to display Creative Launcher, then click the SB Live! tab, followed by the SB Live! Experience icon.

SB Live! Tour

Easy-to-follow ScreenCam™ movies to show you how to use Sound Blaster Live! and get the most out of it.

To run SB Live! Tour, insert the SB Live! Tour and Demo CD into your CD-ROM drive. At the AutoPlay screen, click the SB Live! Tour button.

Every bundled application provides online help to guide you along when you use it.

For the latest updates and drivers, further information, tips, tricks and plug-ins, check the SB Live! website any time at <http://www.sblive.com>

A fast way of getting to the website is to click the right-most button (the Environmental Audio icon) on Creative Launcher.

Configuring Your Speakers

Note: If you have a 4-speaker configuration (2 in the front, 2 in the rear), and there is no sound coming from the rear speakers, open the Sound Blaster Live! Speaker applet to change to the correct speaker output setting.

1. Bring your pointer to the top of the screen to display Creative Launcher, then click the Audio HQ tab, followed by the Speaker icon.
The Speaker dialog box appears.
2. On the Configuration tabbed page, make sure that the value in the Output box corresponds to the number of speakers you are using. For example, if you are using two pairs of speakers, select the “4 Speakers” option; if you leave the Output value as “2 Speakers”, there will be no sound from your rear speakers.
3. Using Creative PlayCenter or Windows Media Player, open a Wave file in your computer and play it. In the Speaker dialog box, drag the Wave source icon from the Panning Source box to each speaker in the Preview box in turn. You should hear the selected sound being played. If you do not, see Appendix D, “Problems with Sound”.

Uninstalling the Applications

The Windows Uninstall feature allows you to cleanly remove applications and to reinstall them in order to correct problems, change configurations, or make version upgrades.

Notes: Quit the audio card's applications before uninstalling. Applications that are still running during uninstallation will not be uninstalled.

Some applications may share files with other Windows applications. If so, the uninstallation program will prompt you when it tries to delete these files. Do not delete the files unless you are sure that you do not need to use them.

To uninstall the applications

1. Click the Start button, point to Settings, and then click Control Panel.
2. Double-click the Add/Remove Programs icon.
3. In the Add/Remove Programs Properties dialog box, select Sound Blaster Live!, and then click the Add/Remove button.
4. Follow the instructions on the screen to uninstall.

Reinstalling the Audio Drivers From the Installation Disc

You may want to reinstall the audio drivers if you think they have been corrupted. To do so:

1. Insert the installation disc into your CD-ROM drive.
2. Run the UPDRV95.EXE program from the **AUDIO\Language\WIN95DRV** folder of your CD-ROM drive, where *Language* is the language of the software that you want to install.

The updating process may take a while. When the progress indicator box disappears, the update is complete.

Installing Software in Windows NT 4.0

This chapter shows you how to install the audio software in Windows NT 4.0 after installing your card. It consists of the following sections:

- Installing the Software
- Using Sound Blaster Live!
- Reinstalling the Audio Drivers From the Installation Disc
- Removing Unused Sound Blaster Drivers

You cannot install more than one Sound Blaster audio card of the same type on your computer.

2. At the AutoPlay screen, click the SB Live! Tour button.

Every bundled application provides online help to guide you along when you use it.

For the latest updates and drivers, further information, tips, tricks and plug-ins, check the SB Live! website any time at <http://www.sblive.com>

Proceed to the “Configuring Your Speakers” section in Chapter 2, “Installing Software in Windows 95/98”. The procedure in Windows NT 4.0 is the same as in Windows 95/98.

Installing the Software

The software installation in NT 4.0 includes the installation of audio drivers.

1. Insert the installation disc into your CD-ROM drive.
The AutoPlay screen appears.
2. Follow the instructions on the screen to complete the installation.

Using Sound Blaster Live!

Congratulations! You have successfully installed Sound Blaster Live! It is recommended that you run SB Live! Tour to learn how to use and get the most out of Sound Blaster Live!

To run SB Live! Tour

1. Insert the SB Live! Tour and Demo CD into your CD-ROM drive.

Reinstalling the Audio Drivers From the Installation Disc

You may want to reinstall the audio drivers if you think they are corrupted. To do so:

1. Insert the installation disc into your CD-ROM drive.
2. Run the UPDPCINT.EXE program from the `AUDIO\Language\NT4DRV` folder of your CD-ROM drive, where *Language* is the language of the software that you want to install.
3. Restart your computer when prompted.
You may be prompted to restart more than once.

If a Windows NT 4.0 Service Control Manager error message appears, see “Problems in Windows NT 4.0” on page D-4.

Removing Unused Sound Blaster Drivers

You may want to remove unused Sound Blaster ISA and PCI audio drivers after you have removed the cards from your computer. To remove the drivers, use the procedure in the previous section, “Reinstalling the Audio Drivers From the Installation Disc”.



General Specifications

This section lists the specifications of your audio cards.

Features

PCI Bus Mastering

- PCI Specification Version 2.1 compliant
- Bus mastering reduces latency and speeds up system performance

EMU10K1

- Advanced hardware accelerated digital effects processing
- 32-bit digital processing while maintaining a 192 dB dynamic range
- Patented 8-point interpolation that achieves the highest quality of audio reproduction
- 64-voice hardware wavetable synthesizer
- Professional-quality digital mixing and equalization
- Up to 32 MB of sound RAM mapped to host memory

Stereo Digitized Voice Channel

- True 16-bit Full Duplex operation
- 16-bit and 8-bit digitizing in stereo and mono modes
- Playback of 64 audio channels, each at an arbitrary sample rate
- ADC recording sampling rates: 8, 11.025, 16, 22.05, 24, 32, 44.1 and 48 kHz
- Dithering for 8-bit and 16-bit recording

AC '97 Codec Mixer

- Mixes EMU10K1 audio sources and analog sources such as CD Audio, Line In, Microphone, Auxiliary, TAD and PC Speaker
- Selectable input source or mixing of various audio sources for recording
- 16-bit Analog-to-Digital conversion of analog inputs at 48 kHz sample rate

Volume Control

- Software record and playback control of Master, Digitized Voice, and inputs from MIDI device, CD Audio, Line, Microphone, Auxiliary, TAD, PC Speaker, I²S (PC-DVD), SPDIF, Wave/DirectSound device, and CD Digital (CD SPDIF)
- Separate bass and treble control
- Muting and balance control for individual playback sources

E-mu Environmental Modeling™

- Realistic 3D experience that increases depth and breadth in perceived audio
- Highly accurate positioning of audio objects in 3D space
- Exceptional reproduction of various ambient and environmental effects

DynaRAM™

- Dynamic allocation of host memory for storing and processing sound samples
- Need not rely on on-board audio card memory

Creative Multi Speaker Surround™ (CMSS™)

- Multi-speaker technology
- Professional-quality panning and mixing algorithm
- Independent multiple sound sources can be moved and placed around a listener

Connectivity

MAIN CARD

Audio Inputs

- One line-level analog Line input via stereo jack on rear bracket
- One mono Microphone analog input via stereo jack on rear bracket
- CD_IN line-level analog input via 4-pin Molex connector on card
- AUX_IN line-level analog input via 4-pin Molex connector on card
- TAD line-level analog input via 4-pin Molex connector on card
- CD_SPDIF digital input via 2-pin Molex connector on card, accepting sampling rates of 32, 44.1 and 48 kHz
- Zoomed Video I²S digital input via 4-pin Molex connector on card

Audio Outputs

- Two line-level analog outputs via stereo jacks on rear bracket, Front and Rear Line-Outs
- Stereo headphone (32-ohm load) support on Front Line-Out

Interfaces

- D-Sub MIDI interface for connection to external MIDI devices. Doubles as Joystick port
- MB_PRO 2x5 pin header
- MIC_CONN 1x3 pin header
- VOL_CTRL 1x4 pin header
- PC_SPK 1x2 pin header

AUDIO EXTENSION CARD

Audio Inputs and Outputs

- Digital-DIN connector for digital input and output
- SPDIF digital input via RCA jack on rear bracket. SPDIF consumer-interface compliant
- SPDIF digital output via RCA jack on rear bracket. IEC958 consumer electronics compliant
- Mini-DIN for MIDI_IN on rear bracket
- Mini-DIN for MIDI_OUT on rear bracket

SB16 Emulation in MS-DOS/ Windows 95/98

This appendix is organized as follows:

- ❑ Background
- ❑ Understanding the Installation Program in Windows 95/98
- ❑ Understanding the System Resource Settings
- ❑ Understanding the Environment Variables
- ❑ Determining Resources
- ❑ Selecting the Best Audio Options in a Game
- ❑ MS-DOS Mode Utilities

Background

Most games on the market have been designed for only MS-DOS. SB Live! supports MS-DOS games. There are two ways to play MS-DOS games:

- ❑ **From the MS-DOS box in Windows 95/98**

This is the recommended method.

To open the box:

- Click the Start button on the taskbar of Windows 95/98, point to Programs, and then click MS-DOS Prompt.
- ❑ **In the Windows 95/98 MS-DOS mode**
There could be times when you do not want to or cannot run a game from the MS-DOS box. The game may be

incompatible with Windows 95/98, or there is insufficient system resources to play the game with Windows 95/98 loaded. In such cases, use the MS-DOS mode, in which only the real-mode portions of Windows 95/98 are loaded.

To restart the system in MS-DOS mode when you are already in Windows 95/98:

1. Click the Start button on the taskbar, and then click Shutdown.
2. Click the Restart The Computer In MS-DOS Mode option button, and then click the OK button.

To start the system in MS-DOS mode at system startup:

1. At startup as Windows 95/98 is loading, hold the F8 key.
2. At the startup menu, choose the Command Prompt Only option, and then press <Enter>.

Understanding the Installation Program in Windows 95/98

The installation program modifies your AUTOEXEC.BAT and CONFIG.SYS files.

The AUTOEXEC.BAT File Settings

The installation program adds the following statements to the AUTOEXEC.BAT file:

```
SET CTSYN=C:\WINDOWS
SET BLASTER=A220 I5 D1 H5 P330 T6
C:\PROGRA~1\CREATIVE\SBLIVE\DOSDRV\SB
EINIT.COM
```

The first two statements set up the environment variables for your audio card. For an explanation of the variables, see “Understanding the Environment Variables” on page B-3.

The third statement runs the SBEINIT.COM driver. SBEINIT.COM is the SB Live! MS-DOS driver. It is required for the SB Live! card to function properly under MS-DOS mode. The syntax for the statement is as follows:

```
<SB Live! path>\SBEINIT.COM
```

SBEINIT.COM requires that the HIMEM.SYS and EMM386.EXE files are loaded. If needed, the installation program adds the necessary HIMEM.SYS and EMM386.EXE lines to your CONFIG.SYS file, creating the file if it is not present.

On the rare occasion a program does not work with expanded memory, simply add the NOEMS parameter to your memory manager. For example:

```
DEVICE=C:\WINDOWS\EMM386.EXE NOEMS
```

if C:\WINDOWS is your Windows directory.

You may load this driver into high memory in the AUTOEXEC.BAT file, even though the default is not. For example:

```
LOADHIGH=C:\PROGRA~1\CREATIVE\SBLIVE\
DOSDRV\SBEINIT.COM
```

Do not remove the memory manager altogether. Do not attempt to load SBEINIT.COM into high memory when using the NOEMS option if SBEINIT.COM fails to run SBELOAD.EXE or SBECFG.EXE.

In the rare case that an MS-DOS game will not work with a memory manager, you will not be able to use the SB Live! card with the game.

The CONFIG.SYS File Settings

The installation program adds the following statements to the CONFIG.SYS file:

```
DEVICE=C:\WINDOWS\HIMEM.SYS
DEVICE=C:\WINDOWS\EMM386.EXE
```

Understanding the System Resource Settings

This section explains the following software SB emulation resources—not hardware resources—of your card:

- Input/Output (I/O) Addresses
- Interrupt Request (IRQ) Line
- Direct Memory Access (DMA) Channel.

Notes:

- If your card encounters a conflict with a peripheral device, you may need to change its resource settings. For details, see “Resolving I/O Conflicts” on page D-3.
When any resource setting is changed, make sure that the environment variables (see “Understanding the Environment Variables” on page B-3) reflect the changes as well. You can view your system environment by typing **SET** at the DOS prompt.
- In the following tables, the preferred values are in bold.

Input/Output (I/O) Addresses

I/O addresses are communication areas used by your computer's central processor to distinguish among various peripheral devices connected to your system when sending or receiving data.

Table B-1: Possible default input/output (I/O) addresses.

Device	Default I/O Address Range
SB interface	220H to 22FH 240H to 24FH 260H to 26FH 280H to 28FH
MPU-401 UART MIDI interface	300H to 301H 310H to 311H 320H to 321H 330H to 331H
Stereo music synthesizer	388H to 38BH

Interrupt Request (IRQ) Line

An IRQ line is a signal line that a device uses to notify your computer's central processor that it wants to send or receive data for processing.

Table B-2: Possible default interrupt request (IRQ) line assignment.

Device	Default IRQ Line
SB interface	5, 7, 9, 10

Direct Memory Access (DMA) Channel

A DMA channel is a data channel that a device uses to transfer data directly to and from the system memory.

Table B-3: Possible default direct memory access (DMA) channel assignment.

Usage	Default DMA Channel
First DMA channel	0, 1, 3
Second DMA channel	5, 6, 7

Understanding the Environment Variables

Environment variables are used to pass hardware configuration information to the software in your system. For MS-DOS, your audio card includes the following:

- CTSYN Environment Variable
- BLASTER Environment Variable

Note: The values shown may be different for your system. No space is allowed before and after the equal sign. However, there must be at least a space between parameters.

CTSYN Environment Variable

The CTSYN environment variable points to the location of the CTSYN.INI file, which usually resides in the Windows directory. The syntax for this variable is as follows:

```
CTSYN=path
```

where path is the location of the CTSYN.INI file.

BLASTER Environment Variable

The BLASTER environment variable specifies the base I/O address, IRQ line, and DMA channels of the SB interface. Its syntax is:

```
BLASTER=A220 I5 D1 H5 P330 T6
```

The parameters in the command are as follows.

This Parameter	Specifies
Axxx	SB interface's base I/O address.
Ix	IRQ line used by the audio interface.
Dx	First DMA channel used by the audio interface.
Hx	Second DMA channel used by the audio interface.
Pxxx	MPU-401 UART interface's base I/O address.
Tx	Card type. <i>x</i> must be 6.

Determining Resources

To find the current SB Live! SB16 Emulation resources in Windows 95/98:

1. Click the Start button, point to Settings, and then click Control Panel.
2. In the Control Panel window, double-click the System icon.
3. In the System Properties dialog box, click the Device Manager tab.
4. Double-click Creative Miscellaneous Devices, and then double-click Creative SB Live! SB16 Emulation.
5. Click the Resources tab.

You can use the information in the resource list to help you configure MS-DOS games for use with the SB Live! card.

The resource list may show three entries of "Input/Output Range" and two entries of "Direct Memory Access". They correspond to the sequence of entries in Table B-1 and Table B-3. If the number of entries do not match, a good estimate of the identity of the device is its I/O address or DMA channel.

To find the current SB Live! SB16 Emulation resources in MS-DOS mode:

1. Switch to your SB Live! DOS driver directory, that is:
C:\PROGRA~1\CREATIVE\SBLIVE\DOSDRV
2. Type **SBECFG** and then press <Enter>.

Note: The MS-DOS driver SBEINIT.COM must be running for SBECFG.EXE to work properly.

Some older games may have difficulty detecting the SB Live! card at certain resource settings. Typically, these games would expect the card to be at a fixed set of resources and would fail to load if those resources are not detected. If you have older MS-DOS games that do not work properly, try changing the SB Live! SB16 Emulation configuration. Use the following as a guide:

Problem: Sound Blaster emulation is not recognized.

Resource: Try switching the SB Emulation IRQ between 5 and 7, use DMA channel 1, use SB interface port 220.

Problem: The MPU-401 emulation is not recognized.

Resource: Try using Port address 330.

Selecting the Best Audio Options in a Game

Most MS-DOS-based games that provide sound have some procedure for audio setup. These procedures generally present you with a list of popular audio cards or audio devices from which to choose.

The methods used by games to present audio options can vary greatly. Some may present a single choice that corresponds to a particular audio device, that is, Sound Blaster, Sound Blaster 16, Roland Sound Canvas, and so on. Others will provide an option for music and digital audio separately; for example, General MIDI music with Sound Blaster digital audio. In such a case, there are often two separate menus to configure.

Some games allow you to set the MIDI port address and IRQ for music and sound. Make sure that these settings correspond to the values displayed by SBECFG.EXE or the Resources tabbed page of the Creative SB Live! SB16 Emulation Properties dialog box.

There are games that offer MPU-401/Roland (General MIDI or MT-32/LAPC-1) as an option. Often these games allow you to set the MIDI port address. Make sure that they match the MIDI address in the Resources list on Resources tabbed page of the Creative SB Live! SB16 Emulation Properties dialog box. The same values can be found under “MPU-401 (General MIDI, Roland MT-32/LAPC-1) Emulation”, displayed by SBECFG.EXE in MS-DOS mode. Remember to enable the MT-32 MIDI patch with the SBEMIXER program if you select Roland MT-32 or LAPC-1 for music.

Music Options

Most MS-DOS games offer a menu choice for sound when they start up. If you have a choice between General MIDI and MT-32, always choose General MIDI, since it will provide you with the best sound quality. If you need to use MT-32, you must first switch from the General MIDI instrument set (the default) to the MT-32 instrument set using SBEMIXER. Be sure to switch back to the General MIDI set when you are finished using the MT-32 instrument set.

Digital Audio Options

SB Live! supports Sound Blaster, Sound Blaster Pro, Sound Blaster 16, and Adlib digital audio emulation. If an application provides all these as options, specify the choices in this order:

1. Sound Blaster 16
2. Sound Blaster Pro
3. Sound Blaster
4. Adlib

MS-DOS Mode Utilities

The SB Live! card includes a few MS-DOS utilities. These utilities require the SB Live! DOS driver SBEINIT.COM to be loaded.

SBECFG.EXE

Use the SBECFG.EXE utility to obtain the hardware settings and the status of the SB Live! card.

Typing **SBECFG.EXE** at the command prompt displays the following hardware settings:

- PCI Hardware Settings: Port, IRQ
- Sound Blaster Emulation: Port, IRQ, DMA
- MPU-401 Emulation (GM, Roland MT-32/LAPC-1) Emulation: Port
- Adlib Emulation: Port

The emulation settings appear only if they are enabled.

SBEMIXER.EXE

Use SBEMIXER.EXE to change the volume levels of the MPU-401 instrument set used on the SB Live! card. You can use SBEMIXER.EXE from the command line—useful for advanced users who want to set up batch files with particular volume levels—or within the SBEMIXER screen. The settings for SBEMIXER.EXE are independent of the Creative Mixer settings in Windows 95/98.

To set SBEMIXER values in the command line:

At the DOS prompt, type the SBEMIXER command in a single line. Its syntax is:

```
SBEMIXER [/S:x] [/W:x] [/C:x] [/M:x] [/?]
```

where

- Square brackets [] denote optional parameters

This

Parameter	Specifies
/S:x	Synth volume. <i>x</i> can be a value from the range 0 to 127.
/W:x	Wave volume. <i>x</i> can be a value from the range 0 to 127.
/C:x	CD audio volume. <i>x</i> can be a value from the range 0 to 127.
/M:x	Synth MT-32/LAPC-1 mode. For <i>x</i> , 0 is Off, 1 is On.
/?	View a short description of the parameters.

An example of an SBEMIXER command is

```
SBEMIXER /S:64 /W:120 /C:50 /M:0
```

which corresponds to “set the synth volume to 64, the Wave volume to 120, the CD audio volume to 50, and turn off the Synth MT-32/LAPC-1 mode”.

To set SBEMIXER values within the Mixer screen:

At the DOS prompt, type the **SBEMIXER**

The interactive editor mode allows you to change the mixer settings with the mouse, <Tab>, <PgUp>, <PgDn>, or arrow keys.

Use the Save button to save the settings for the next session.

SBEGO.EXE

Use this to confirm whether SB16 Emulation is properly installed and working.

Changing Audio Card Settings

You might want to disable interfaces that you are not using to free up resources, for example, when you do not have enough IRQ lines.

This appendix is organized as follows:

- Enabling/Disabling Gameport Joystick Interface
- Enabling/Disabling Other Features

Enabling/Disabling Gameport Joystick Interface

The Gameport Joystick interface on your audio card can be enabled or disabled in Windows 95/98.

To enable or disable the interface in Windows 95/98

1. Click the Start button, point to Settings, and then click Control Panel.
2. In the Control Panel window, double-click the System icon.
3. In the System Properties dialog box, click the Device Manager tab.
4. Double-click Sound, Video And Game Controllers, and then select Creative Gameport Joystick.
5. Click the Properties button.
6. In the Properties dialog box:
 - If you have an Original Configuration (Current) check box:
 - To enable the interface, make sure that the check box is selected.
 - To disable it, clear the check box.
 - If you have a Disable In This Hardware Profile check box:
 - To enable the interface, clear the check box.
 - To disable it, make sure that the check box is selected.
7. Click OK to restart Windows and for the change to take effect.

When the Gameport Joystick interface is disabled, the entry in Device Manager has a red cross.

Enabling/Disabling Other Features

In Windows 95/98 and Windows NT 4.0

Use the applets under Creative AudioHQ to enable or disable features such as Stereo Enhancement Effect.

To open an AudioHQ applet from the Sound Blaster menu

- Click the Start button on the taskbar, point to Programs, point to Creative, point to Sound Blaster Live!, and then click AudioHQ.
Check out the applets within the AudioHQ window.

To open an AudioHQ applet from Creative Launcher

- Click Creative Launcher at the top or bottom of your computer screen, and then click the AudioHQ tab.
Check out the applets indicated by the tabs in the second row of Launcher.

Troubleshooting

This appendix provides some tips for solving some problems you may encounter with your audio card during installation or normal use.

Problems Installing Software

In Windows 95/98, the installation program does not run automatically after inserting the CD-ROM into the drive.

The AutoPlay feature in your Windows 95/98 system may not be enabled.

To start the installation program through the My Computer shortcut menu:

1. Double-click the My Computer icon on your Windows desktop.
2. In the My Computer window, right-click the CD-ROM drive icon.
3. On the shortcut menu, click AutoPlay and follow the instructions on the screen.

To enable AutoPlay through Auto Insert Notification:

1. Click the Start button, point to Settings, and then click Control Panel.
2. In the Control Panel window, double-click the System icon.
3. In the System Properties dialog box, click the Device Manager tab and select your CD-ROM drive.

4. Click the Properties button.
5. In the Properties dialog box, click the Settings tab and make sure that the Auto Insert Notification check box is selected.
6. Click the OK button to exit from the dialog box.

Problems with Sound

There is unexpected excessive environmental sound or effects when an audio file is being played.

An inappropriate environmental preset was the last selected preset.

To switch to an appropriate environment:

1. Open the Environmental Audio control applet.

OR

Display Creative Launcher. It is found at the top or bottom of your screen (you may have to bring your pointer to the edge of the screen to display Launcher). And then click the Environments tab.

2. In the Environment list, select “No effects” or an appropriate environment.

In a 4-speaker configuration, there is no sound from the rear speakers.

Check the following:

- The rear speakers are connected to the main card’s Rear Out jack.

- ❑ In Creative Mixer's Record Control view:
 - If a single source (e.g., CD Audio, Line In, TAD, Auxiliary or Microphone) is playing, the check box for the source is selected.
 - If more than one source is playing, the "What U Hear" device icon is selected, and then in the Play Control view, the sources you want to mix are selected.

No sound from the headphones.

Check the following:

- ❑ The headphones are connected to Line Out jack.
- ❑ In the Speaker applet (click the AudioHQ icon on the taskbar, and then click the Speaker applet), make sure the Output field is set to Headphones.

No audio output when playing digital files such as .WAV, MIDI files or AVI clips.

Possible causes:

- ❑ The speaker volume knob (if any) is not set properly.
- ❑ The external amplifier or speakers are connected to the wrong jack.
- ❑ There is a hardware conflict.
- ❑ The output selection in the Configuration tabbed page of the Speaker applet is incorrectly selected.
- ❑ The Original Sound sliders in either the Master and Source tabbed pages of the Environmental Audio applet are set at or near 0%.

Check the following:

- ❑ The speakers' volume control knob, if any, is set at mid-range. Use Creative Mixer to adjust the volume, if necessary.

- ❑ The powered speakers or external amplifier are connected to the card's Line Out or Rear Out jack.
- ❑ No hardware conflict between the card and a peripheral device. See "Resolving I/O Conflicts" on page D-3.
- ❑ The output selection in the Speaker applet corresponds to your speaker or headphone configuration.
- ❑ The Original Sound sliders in either or both the Master and Source tabbed pages of the Speaker applet are set to 100%.

No audio output when playing CD-Audio.

OR

No audio output when playing DOS games that require a CD-ROM.

To solve this problem:

- Make sure the CD audio cable between the CD-ROM drive and the audio card is connected.

Insufficient SoundFont Cache

There is insufficient memory to load SoundFonts.

This may occur when you load or play a SoundFont-compatible MIDI file.

Cause: There is insufficient memory allocated to SoundFonts.

To allocate more SoundFont cache:

- On the Options tabbed page of the SoundFont Control applet, move the SoundFont Cache slider to the right.

The amount of SoundFont cache you can allocate depends on the system RAM available.

If there is still insufficient system RAM available:

- On the Configure Banks tabbed page of the SoundFont Control applet, select a smaller SoundFont bank from the Select Bank box.
The smallest SoundFont bank available is 2 MB (2MGMSMT.SF2).

Note: The tradeoff of a smaller SoundFont quality is its lower sound quality.

Problems with Joystick

The joystick port is not working.

The audio card's joystick port conflicts with the system's joystick port.

To solve this problem:

- Disable the audio card's joystick port and use the system port instead. For details, see "Enabling/Disabling Gameport Joystick Interface" on page C-1.

The joystick is not working properly in some programs.

The program may use the system processor timing to calculate the joystick position. When the processor is fast, the program may determine the position of the joystick incorrectly, assuming that the position is out of range.

To solve this problem:

- Increase your system's 8 bit I/O recovery time of the BIOS setting, usually under the Chipset Feature Settings section. Or, if available, you may adjust the AT Bus speed to a slower clock. If the problem persists, try a different joystick.

Resolving I/O Conflicts

Conflicts between your audio card and another peripheral device may occur if your card and the other device are set to use the same I/O address.

To resolve I/O conflicts, change the resource settings of your audio card or the conflicting peripheral device in your system using Device Manager in Windows 95/98.

If you still do not know which card is causing the conflict, remove all cards except the audio card and other essential cards (for example, disk controller and graphics cards). Add each card back until Device Manager indicates that a conflict has occurred.

To resolve hardware conflicts in Windows 95/98:

1. Click the Start button, point to Settings, and then click Control Panel.
2. In the Control Panel window, double-click the System icon.
3. In the System Properties dialog box, click the Device Manager tab.
4. Under the Sound, Video And Game Controllers entry, select the conflicting audio card driver—indicated by an exclamation mark (!)—and click the Properties button.
5. In the Properties dialog box, click the Resources tab.
6. Make sure that the Use Automatic Settings check box is selected, and click the OK button.
7. Restart your system to allow Windows 95/98 to reassign resources to your audio card and/or the conflicting device.

Note: You can also refer to the Troubleshooting section in the Help file of Windows 95/98.

Problems in DOS

The system stops responding during voice output.

There is conflict between the audio card and another card.

To resolve the conflict:

- Same as for Windows 95/98 in the previous section.

Problems in Windows NT 4.0

A Service Control Manager error message appears with one or more other error messages at system restart.

This occurs after you remove an audio card from your computer after you have successfully installed Sound Blaster Live! cards. The drivers of the removed audio card cannot find the card.

To solve this problem:

1. Log on to your computer as Administrator.
2. Click the Start button, point to Settings, and then click Control Panel.
3. Double-click the Multimedia icon, and then click the Devices tab.
4. In the list, remove from under these entries
 - Audio Devices
 - MIDI Devices And Instrumentsthe items other than

- Audio for Creative SB Live!
- MIDI for Creative SB Live!
- MIDI for Creative S/W Synth

5. Click the OK button to close the dialog box.
The drivers are removed.

Problems with Encore DVD Player

The Encore DVD Player is not launched when a DVD disc is inserted into the drive.

To solve this problem:

1. In the Windows system tray, right-click the Disc Detector icon, and then click Properties.
2. On the General tabbed page of the Creative Disc Detector dialog box, make sure that Enable Disc Detector check box is selected.
3. Click the Players tab.
4. Select the DVD Disc entry and then click the Select Player button.
5. In the Players Properties dialog box, click the Browse button.
6. Browse to C:\Program Files\Creative\PC-DVD Encore and double-click the entry **ctdvdply**. The Name box now displays the entry ctdvdply.
7. Click the OK button twice to close.

Now when you double-click the Disc Detector icon, the Encore DVD Player is launched.

Technical Support

We are committed to giving you the best product as well as the best technical support. Please enter the following information in the table below and have it ready when you contact Technical Support.

- The model and serial numbers of your card and other devices.
- Error message on the screen and how it came about.
- Information on the adapter card that conflicts with your card.
- Hardware configuration information such as the base I/O address, IRQ line, or DMA channel used.
- Type and version of your operating system, e.g., DOS 6.0, Windows 3.1x, Windows 95 or Windows 98.

Note: Please ensure to retain your purchase receipt plus all packaging and contents until such time that all components of the product are functioning to your satisfaction. They will all be required in the unlikely event that your product needs to be returned to Creative.

Before contacting 'Creative Technical Services', please ensure that you have read Appendix D, 'Troubleshooting'.

For quick and easy reference, it is advisable that you write down the following numbers of your card and other hardware devices, if installed in your system in Table E-1 and Table E-2.

Table E-1: Model and Serial Numbers of your hardware.

Hardware	Model Number	Serial Number
CD-ROM Drive		
Audio Card*		
Video Card		
Fax/Modem		
MIDI Device		
Others:		

*See label on underside of card

Table E-2: Hardware Configuration Information.

Hardware	Base I/O Address	IRQ	DMA
CD-ROM Drive			
Audio Card			
Video Card			
Fax/Modem			
MIDI Device			
Others:			

Inside Europe

See 'Creative Technical Services' section for contact numbers.

Through CompuServe

To serve you better, we have created a Creative Labs Forum on CompuServe. Through this forum:

- You will have direct access to our company representatives who will be there to answer your questions.
- You will be part of an interactive community of Creative's product users. Here you can share experiences and ideas and also seek solutions to problems.
- We will also keep you up-to-date on the latest product information, software updates, and fixes to common problems.
- We will also welcome your recommendations and suggestions for new products and for improving our products in future releases.

By Fax

For fast and efficient Technical Support solutions, please use our telephone service in the first instance. If you decide to write or fax us then please send your correspondence

ONLY to our Ireland address. Please allow up to two weeks processing and postal time for a response. See 'Creative Technical Services' section for contact numbers.

AutoFax is a facility that allows you to obtain product and technical information through facsimile services. In Europe, use the following number: **+353 1 8203667**.

If You Have a Problem

Please retain all contents including packaging and proof of purchase until you are fully satisfied with product.

If you find that you have a problem with your Creative product and believe that it needs to be repaired or replaced, you should verify the purchase date and take the appropriate action as detailed below:

Less than 30 days since date of purchase

Should your store receipt indicate that the product is less than 30 days old, you have the option of calling Technical Support for assistance or returning the full product to the dealer/retailer for a replacement or credit (see Creative Technical Services section for contact numbers).

More than 30 days since date of purchase

First contact European Technical Support (see Creative Technical Services section for contact numbers) to establish the nature of the problem and details on our repair returns procedure. Creative Labs requires that all returns for repair/replacement must first be issued with an authorisation number.

Returning a product for repair

- ❑ Contact Technical Support to receive your authorisation number for repair/replacement of product. The authorisation number is only valid for 90 days, after which you must call Technical Support to obtain a new authorisation number.
- ❑ Creative Labs will dispatch a pre-paid returns shipment package with instructions on how to return the product for repair.
- ❑ On receipt of the packaging, you should insert only the faulty hardware item in question and mail it to the Creative address printed on the package provided.
- ❑ Upon receipt of the faulty item, Creative Labs will process your request and arrange return.
- ❑ Before mailing your package please ensure the authorisation number is clearly quoted on the outside of the packaging.

Note: Creative may replace or repair the product with new or reconditioned parts, and the faulty parts will become the property of Creative. The warranty period for your repaired/replacement item is 90 days from the date of shipment from Creative, or what is left on the original item's warranty, whichever is longer.

To avoid tariffs when shipping a product to Creative Labs from outside the E.U., you must complete the relevant customs documentation before shipping the product (please allow 30 days).

Limited Warranty

Creative Labs (Ireland) Limited (“Creative”) warrants to you, the original purchaser only, that the hardware product will be free of defects in materials and workmanship for a period of two years after the date of purchase, or such other period as may be expressly specified by Creative or required by applicable law (“Warranty Period”).

Creative’s entire liability and your remedy will be, at Creative’s sole discretion, the repair or replacement (with the same or similar model) of any hardware or accompanying item(s) not meeting the “Limited Warranty” explained above that is returned to Creative’s authorised distributor or dealer during the Warranty Period with a copy of your receipt.

What this warranty does not cover

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Specifically, this warranty does not cover failures of the product which result from accident, abuse, misuse, alterations (by persons other than Creative or its authorized repair agents), moisture, corrosive environments, shipping, high voltage surges, or abnormal working conditions. This warranty does not cover normal wear and tear. You are specifically advised to take a backup copy of any software provided with the Creative product for security purposes.

Note: This warranty gives you specific legal rights. You may have other rights which vary from country to country. Certain limitations in this warranty are not permitted by the jurisdiction of some countries, so some limitations here may not apply to you.

Creative Technical Services

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Technical Support Department,
Ballycoolin Business Park, Blanchardstown,
Dublin 15, Ireland.



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Belgium

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Germany and Eastern Europe

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Denmark

Tel :+45 3525 9498

Ireland

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BBS :+353 1 820 3818

Finland

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France

Tel :+33 1 39 20 04 21

Norway

Tel :+47 2305 0401

Spain

Tel :+34 (91) 66 25 116

Sweden

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Switzerland

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Portugal

Tel : 0800 8 53066

For all correspondence by fax please use the following number: +353 1 8205052
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Bitte senden Sie alle Faxmitteilungen an die folgende Nummer: +353 1 8205052
Inviare la corrispondenza via fax al numero: +353 1 8205052
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O nosso número de fax é: +353 1 8205052

CREATIVE
CREATIVE LABS

Operating Hours/Heures d'ouverture/Öffnungszeiten/ Ore d'ufficio/Horario de oficina/Openingstijden/Horário de abertura

EUROPE

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Mo-Fr	:	Geschäftszeiten	Sa, So & gesetzl. Feiertage	:	Geschlossen
Lunedì-venerdì	:	Orario d'ufficio	Sabato, domenica e festivi	:	Chiuso
Lunes- Viernes	:	Horario de oficina	Sábados, domingos y festivos	:	Cerrado
Maandag-Vrijdag	:	Kantooruren	Zat.-Zon. & Nationale Feestdagen	:	Gesloten
Segunda a sexta-feira	:	Horário de expediente	Sábado, domingo e feriados	:	Fechado

AutoFax & CompuServe



AutoFax is a facility that allows you to obtain product and technical information through facsimile services. In Europe, use the following number: +353 1 820 3667.

At the CompuServe prompt, Type **Go Blaster** and press <Enter>.



AutoFax est un des services vous permettant d'obtenir des informations relatives aux produits ainsi que des informations techniques par télécopie. En Europe le numéro AutoFax est le suivant : +353 1 820 3667

A l'invite de CompuServe, tapez **Go Blaster** et appuyez sur <Entrée>.



Mit dem AutoFax-Service erhalten Sie Informationen über Produkte und technische Informationen per Fax. Rufen Sie in Europa die folgende Faxnummer an: +353 1 820 3667

Geben Sie in der CompuServe-Befehlszeile **Go Blaster** ein, und drücken Sie <Eingabe>.



AutoFax è un sistema che consente di ottenere informazioni tecniche e commerciali sui prodotti mediante fax. Per l'Europa, il numero di fax è +353 1 820 3667.

Al prompt di CompuServe, digitare **Go Blaster** e premere <Invio>.



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Escriba **Go Blaster** y pulse la tecla <Intro> tras el indicativo de CompuServe.



Met AutoFax kunt u productinformatie en technische informatie opvragen via de fax. Gebruik hiervoor in Europa het volgende nummer: +353 1 8203667.

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Internet

To receive technical support via the Internet, please e-mail: support@CREATIVE-LABS.CO.UK Web Site
<http://www.cle.creaf.com>
<ftp.cle.creaf.com>

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For questions concerning this Agreement, please contact Creative at the address stated above. For questions on product or technical matters, contact the Creative technical support center nearest you.

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Accordingly nothing in this Agreement shall prejudice any rights that you may enjoy by virtue of Sections 12, 13, 14 or 15 of the Irish Sale of Goods Act 1893 (as amended).

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This Agreement is governed by the laws of the Republic of Ireland. The local language version of this agreement shall apply to Software acquired in the EU. This Agreement is the entire agreement between us, and you agree that Creative will not have any liability for any untrue statement or representation made by it, its agents or anyone else (whether innocently or negligently) upon which you relied upon entering this Agreement, unless such untrue statement or representation was made fraudulently.

... TEXT CONTINUED FROM INSIDE FRONT COVER.



SPEAKER CONFIGURATION GUIDE

There are several ways to configure your speaker system for the best Environmental Audio experience. Below are some of our recommendations:

- **Cambridge SoundWorks PCWorks™ FourPointSurround - Ideal Companion**

This four-channel speaker system is the Best Companion to Sound Blaster Live! that money can buy. It lets you enjoy the best Environmental Audio experience. Simply select the '4-speaker' option in the Speaker Configuration settings under Sound Blaster Live!'s AudioHQ application.

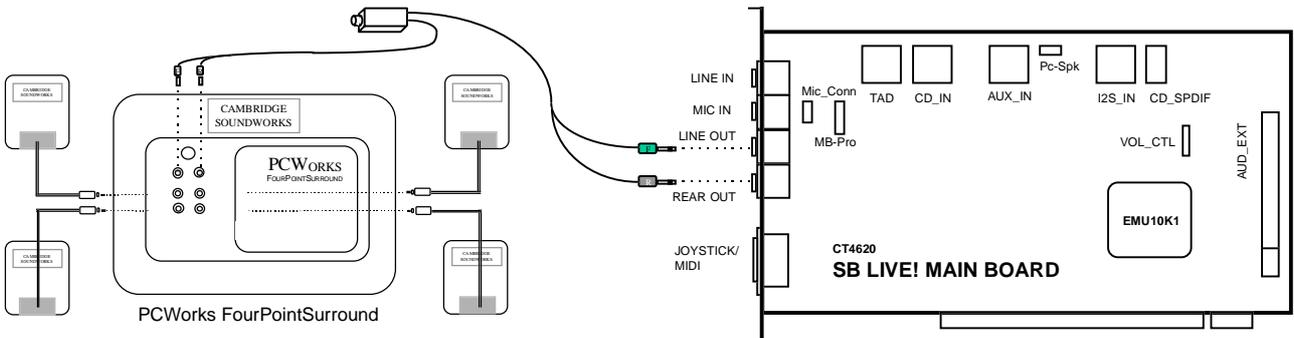


Figure 1: SB Live! connectivity to PCWorks FourPointSurround

- **Two Speakers or Headphones - Legacy speaker system**

Though not ideal, you can still experience Environmental Audio with two speakers or headphones. Simply select the '2-speaker' or 'headphone' option in the Speaker Configuration settings under Sound Blaster Live!'s AudioHQ application.

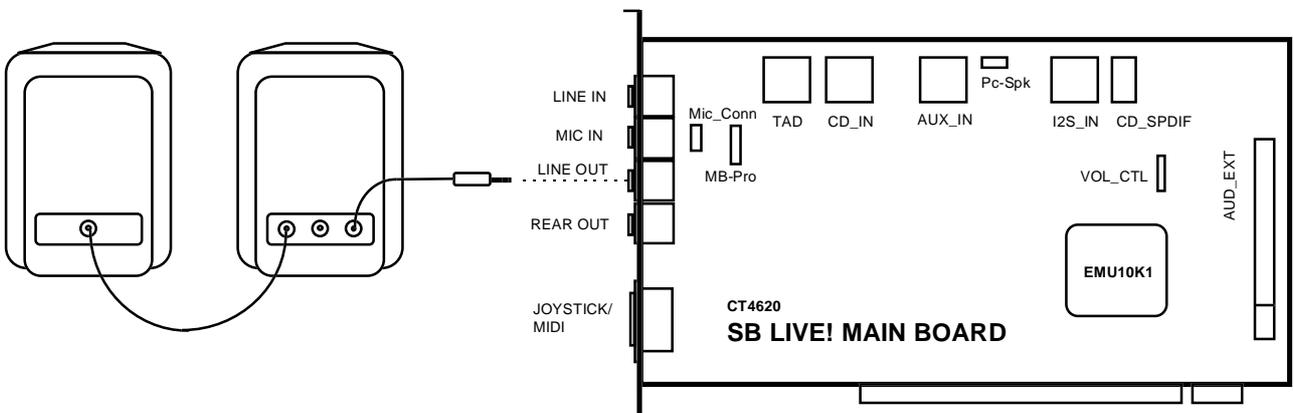


Figure 2 : SB Live! connectivity to legacy speaker system



SPEAKER CONFIGURATION GUIDE

- Upgrade your Speakers!**

If you already own a speaker system, it is highly recommended to add on more speakers for a multiple speaker system to enjoy the best Environmental Audio experience.

Existing Speaker System	Upgrade Option	What You'll Get
PCWorks™	PCWorks™	Cool Environmental Audio experience <i>(illustrated in Figure 3)</i>
SoundWorks®	SoundWorks®	Great Environmental Audio experience with good bass delivery
MicroWorks™	MicroWorks™	The Ultimate Environmental Audio experience with big sounds and real solid bass response!
SBS20, SBS50 or any powered two-speaker system	PCWorks™	Place the new PCWorks™ as your front speakers and your existing pair at the rear

Table 1 : Speaker upgrade options for users with existing speaker system

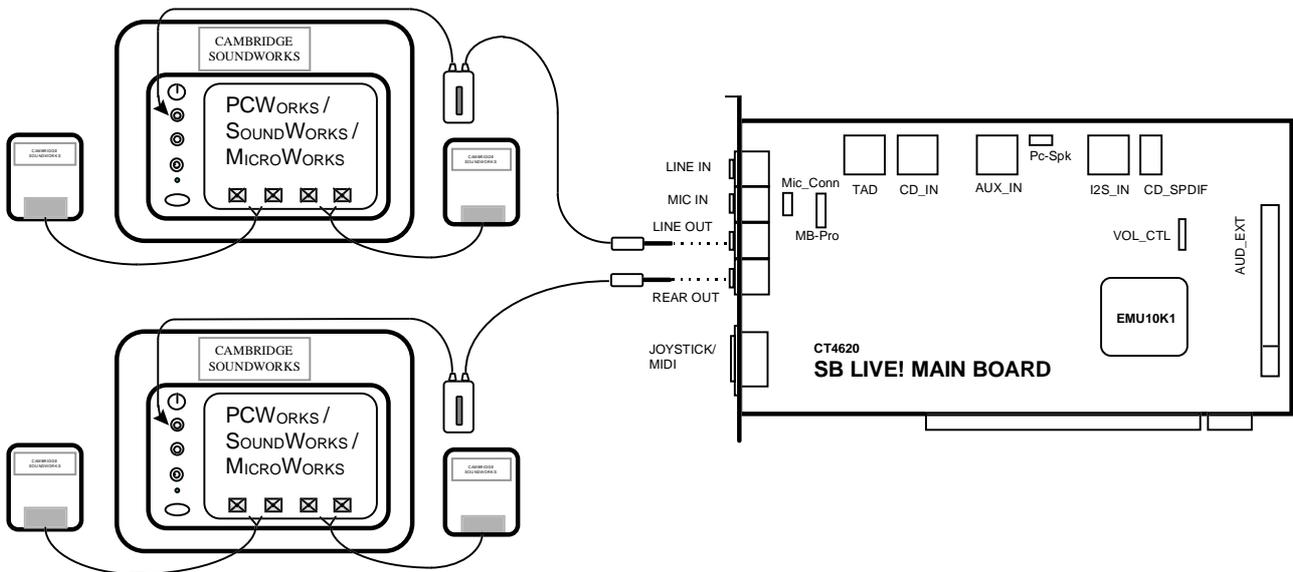


Figure 3 : Adding another pair of PCWorks to your existing PCWorks for cool Environmental Audio



SPEAKER CONFIGURATION GUIDE

Recommended connection guide for Sound Blaster Live! with PC-DVD Encore DXR2

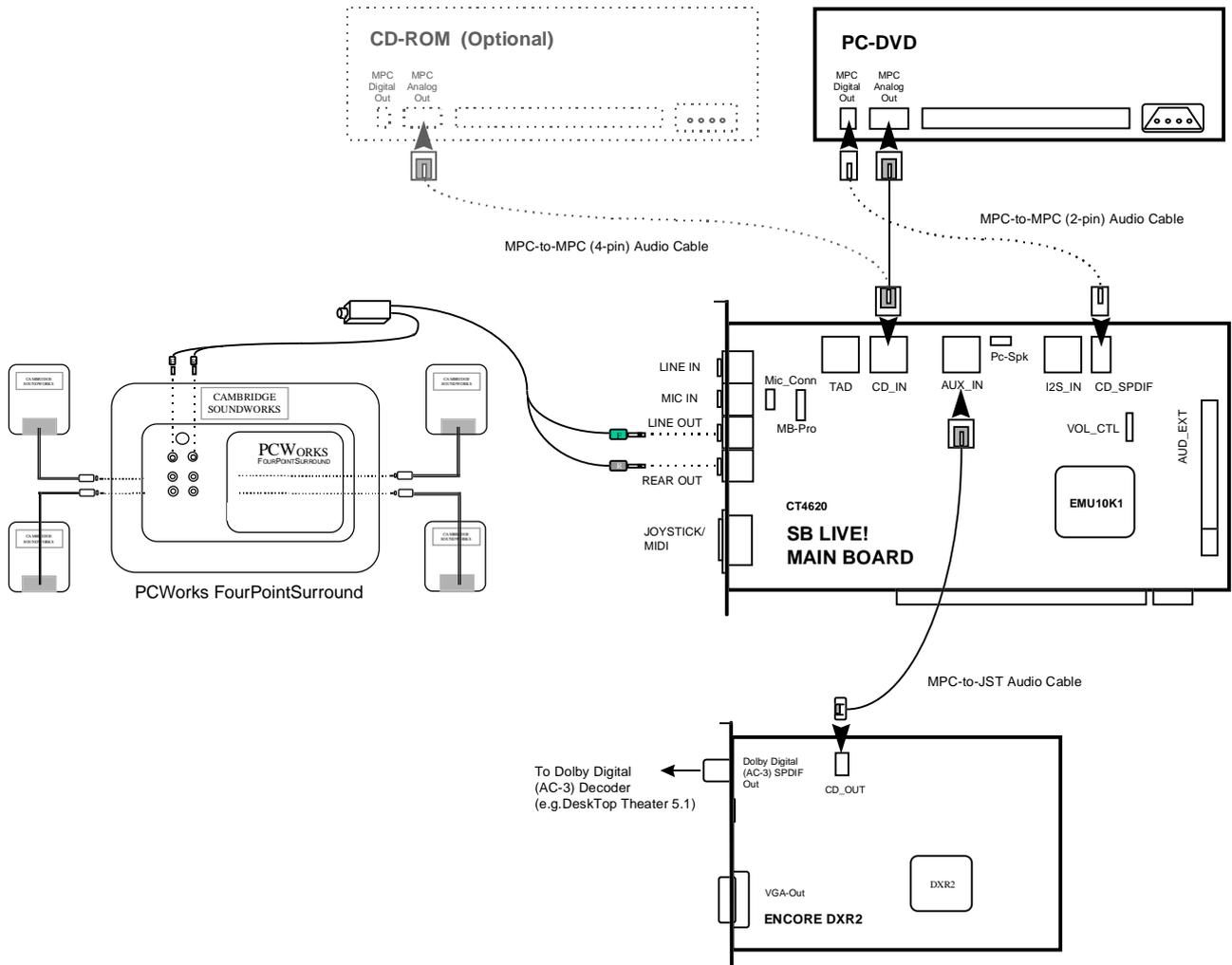


Figure 4 : Connection guide for SB Live! with PC-DVD Encore DXR2

It is recommended to connect the CD_OUT connector of your Encore DXR2 card to the AUX_IN connector of Sound Blaster Live!. In this case, when you are playing your DVD movies or games, make sure you turn on/enable the AUX Input in the SB Live! Mixer application within the AudioHQ program folder, as illustrated below.

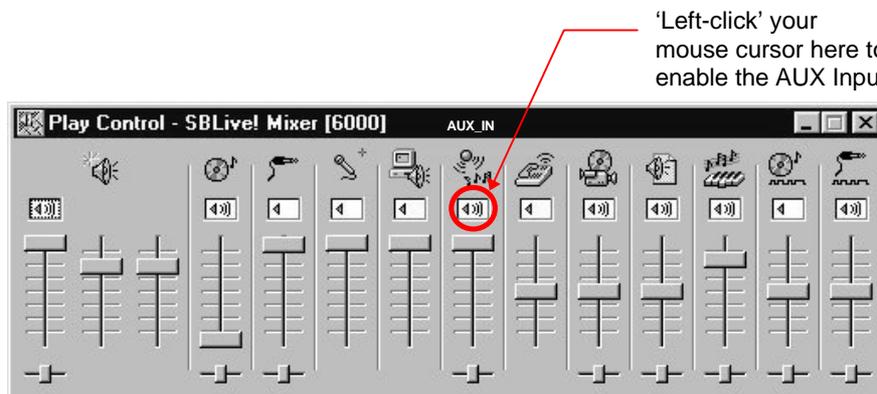


Figure 5 : Enable AUX Input for playing DVD movies or games