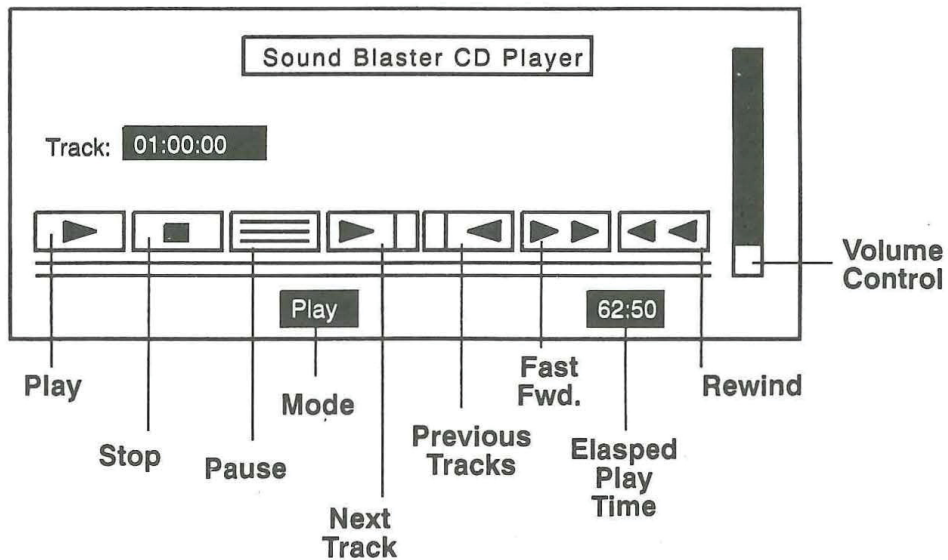

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(Suggested parameters are included in the documentation that comes with your CD-ROM drive.)

Once you have correctly loaded the two drivers, you can then run the compact disc player.

To run CD Player:

1. Type **CDPLYR** and press **Enter**



Sound Blaster CD Player Control Screen

The CD player control screen is displayed with current track information, time current track has played, current operation and disk volume.

The icon control buttons operate the various functions of the compact disc player. You can execute these functions with either the keyboard or mouse. To move between controls, use the **Arrow** keys and press the **Enter** key to start the operation. While you move from control to control, the button is highlighted and current operation displayed.

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All control buttons are symbolized by icons. Each function is used as the name suggests. Refer to chart for more detailed explanation.

Control	Description
Play	Starts the CD player. If already started, this will restart current track.
Stop	Stops the CD player .
Pause/Continue	Pauses the CD player until selected again to continue playing.
Next Track	Moves the CD player to the next track. If the disc's last track is encountered, it moves to the first track .
Previous Track	Selects the previous track. If the first track is encountered, it plays the final track.
Fast Forward	Fast-forwards the player by a 16 second count. If the end of disc is encountered, the function is ignored.
Rewind	Rewinds the player by a 16 second count. Function is ignored if the beginning of the disc is reached.
Volume	The volume control is controlled by a vertical bar at the right hand side. To change volume, move the control with the UP or DOWN keys until you reach the desired volume. With the mouse, simply select the right or left button. Right increases volume, left decreases.

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SBP-MIX & SBP-SET MIXER INPUT AND VOLUME CONTROL

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SBP-SET & SBP-MIX

Two programs are provided to control and select input sources and volume levels.

- ▶ **SBP-MIX** this is a memory resident program for setting volume controls of the Sound Blaster Pro.
- ▶ **SBP-SET** this program controls the selection of sources, filters and volume from the DOS command line.

Mixer Control

The Sound Blaster Pro mixer lets you control the volume of the following:

- ▶ **Master**—the overall volume of each source.
- ▶ **Voice**—the digitized sound volume.
- ▶ **FM Music**—the synthesized music volume.
- ▶ **CD**—the Compact Disk volume
- ▶ **Line-In**—the Audio Line-In volume

To install the program into memory:

1. Type **SBP-MIX** and press **Enter**.
2. To activate the installed SBP-MIX press **ALT** key and then the **1** key.
3. To remove the program from the memory type **SBP-MIX /u**.

Changing the Hot-Key

The default hot-key to activate SBP-MIX is **Alt 1**. You can change the hot-key by entering the format: **SBP-MIX [/khotkey]**. The parameter **/k** specifies the new hot-key. A hot-key consists of a shift status key and a number key on the main keyboard.

The shift status key can be any of the following:

- ▮ **SHIFTL**—left shift key
- ▮ **SHIFTR**—right shift key
- ▮ **ALT**—alternate key
- ▮ **CTRL**—control key

The number key is the number key from 1 to 9 on the main keyboard. For example, to specify the control key and 9 as the new hot-key, type **SBP-MIX /kCTRL9**.

SBP-MIX Menu

When you press the hot-key, SBP-MIX will pop-up at the DOS prompt or from any program.

Note: SBP-MIX will not pop-up from programs that take over the keyboard interrupt. In case this happens, you need to use SBP-SET to make settings before running programs that take over the keyboard interrupt.

After activating SBP-MIX from text-mode, you can make selections using either the keyboard or a mouse from the following menus:

Card reset	FM channel
Master volume	ADC channel
VOC volume	ADC input test on/off
LINE volume	Stereo on/off
CD volume	Exit
MIC volume	
FM volume	

Make a selection by moving the menu bar or by placing the cursor (pointer) on the selected function and pressing the left button on the mouse. From the keyboard, use the **Up** and **Down Arrow** keys and press **Enter**. The right mouse button or **ESC** cancels the selection.

After making a selection from the main menu, an option menu is displayed. You highlight and select the option using the mouse or keyboard.

SBP-MIX in Graphic Mode

When activating SBP-MIX from the graphic mode, you will not get a full set of controls. Instead, functions are displayed only at the bottom line of the screen.

You select a function using the **Up** and **Down Arrow** keys and set the mixer parameter for that function using **Left** and **Right Arrow** keys.

One limitation in the graphic mode is that, you can control only the main volume of the mixer—there are no individual left and right volume controls.

SBP-SET

Using this program you can select and mix sound from different sources, choose filters and control individual volumes. You make selections and settings from the DOS command line.

To run:

1. Type **SBP-SET [/switches]** and press **Enter**.

Switches	Description
/Q	Specifies the quiet screen mode. When selected, all other messages are suppressed except for error messages.
/R	Returns all settings to original defaults.
X:nn	Sets microphone volume. nn is a range from 0 to 7. The default is 0 .
/ADCF:xx /ADCS:xx	Selects the recording filter cut-off frequency. xx is LOW or HIGH . The default is LOW . Selects recording source. The default is MIC . xx is one of the followings: MIC —Microphone CD —CD LINE —Line-in
/ANFI:ON/OFF	Selects the recording filter. ON records using a filter. OFF records without the filter. The default is ON .
/DNFI:ON/OFF	Selects output filter option. ON sends voice output through filter. OFF bypasses the filter. The default is ON .
/VOLUME:l,r	Sets the left and right volume levels of: M —Master volume FM —FM volume VOC —Voice volume LINE —Line-in volume

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	<p>Volume levels range from 1 to 15 for l (left) and r (right) volume. The default volume for Master, FM and Voice is 9, for Line-in it is 0.</p> <p>Example: Setting left volume to 7 and right volume to 9 for Line-in is entered as: /LINE:7,9</p> <p>You can set volume at any time using the above parameters, or you can place a command in your AUTOEXEC.BAT file to set a volume level suitable to your sound system.</p> <p>Example: Putting the following line in your AUTOEXEC.BAT file to sets the Master volume to level 12, Digitized Voice to level 14, FM music volume to level 12 and Line-in volume to level 12: SBP-SET /M:12,12 /VOC:14,14 /FM:12,12 /LINE:12,12</p>
/CD:nn	<p>Sets CD volume. nn ranges from 0 to 15. The default level is 0. There are no left and right volume controls for the CD.</p>

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WINDOWS APPLICATION JUKEBOX MIXER CONTROL

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WINDOWS 3.0 APPLICATIONS

JUKEBOX

MIXER CONTROL

For Windows 3.0 owners, we have included two Sound Blaster Pro application programs to let you *see* and *hear* how easily Sound Blaster and Sound Blaster Pro integrate with Windows. If you are interested in developing Windows 3.0 applications, by using Windows SBK (Sound Blaster Developer Kit), you can add the impact of Sound Blaster Pro audio to your programs. We have also included a program called SETUP to help you set the Sound Blaster Pro settings in the WIN.INI file.

Naturally, running these programs requires Microsoft Windows 3.0 installed in your system. The programs included are:

- ▶ **Jukebox**
- ▶ **Sound Blaster Pro Mixer Control**
- ▶ **Setup**

Installation

Installation is relatively easy, however you need to follow the instructions closely. If you have any problem running these applications, check your installation.

Moving the DLL

The DLL (Dynamic-Link Library) is necessary for Windows applications. We have included the Sound Blaster DLL (SNDBLST.DLL). You should move the DLL to the Windows directory so you can use it with other Sound Blaster Pro Windows applications.

To move the DLL:

1. Change to the **\SBPRO\WINDOWS** subdirectory.
2. Copy **SNDBLST.DLL** to the **WINDOWS** directory (Normally this is in **C:\WINDOWS**).

3. Delete the **SNDBLST.DLL** file in the **\SBPRO\WINDOWS** subdirectory.

Setting the Windows Environment

To keep your Windows neat and to make Sound Blaster programs easier to find and execute, create a program group for your Sound Blaster Pro Windows 3.0 applications.

To create the program group:

1. Select the **File** menu of Windows **Program Manager** then select **New**.
2. Select **Program Group** in the dialog box
3. Type **Sound Blaster Pro** in the Description box and click on the **OK** button or press **Enter**. A blank window titled Sound Blaster Pro is displayed.
4. Select **File, New** and **Program Item**.
5. Type **JukeBox** in the Description box and type **C:\SBPRO\WINDOWS\JUKEBOX** in the Command Line box. You will see an icon representing JukeBox appear in the Sound Blaster Pro Window.
6. Repeat steps four and five, except this time type **Mixer** for the Description and enter **C:\SBPRO\WINDOWS\SBMIXER** in the Command Line. The Mixer icon is displayed.
7. Repeat steps four and five, except type **Setup** for the Description and enter **C:\SBPRO\WINDOWS\SETUP** in the Command Line. The Setup icon is displayed.

Note: These steps assume you have installed the programs in the C hard disk the **\SBPRO\WINDOWS** subdirectory.

Setting the WIN.INI Configuration

The WIN.INI file, normally found in the **WINDOWS** directory, contains information required by Windows to run applications correctly. To let Windows know the Sound Blaster Pro I/O, Interrupt and DMA channel settings, they need to be placed in the WIN.INI file. Since WIN.INI is an ASCII file, you can use a word processor or text editor to add the Sound Blaster Pro settings. The file must be stored in ASCII.

However, we have made it easier for you to change the WIN.INI file by including our Windows program, **SETUP**. Using this program, you can scan the current hardware configuration, enter settings, or have the program add the following defaults to the WIN.INI file:

```
[SoundBlaster]
Port=220
Int=7
DMA=1
```

Note: **Port** refers to the Sound Blaster Pro I/O address; **Int** is the DAC (Digital to Analog Converter) interrupt and **DMA** is the Direct Memory Access Channel.

If you have changed the jumper settings on the Sound Blaster Pro card, you need to change the WIN.INI file to match.

Selecting Auto Scan in SETUP lets you scan the current hardware configuration. You can then manually enter the I/O port address, interrupt and DMA channel settings. After verifying the settings, SETUP makes the necessary changes in the WIN.INI file.

To run setup:

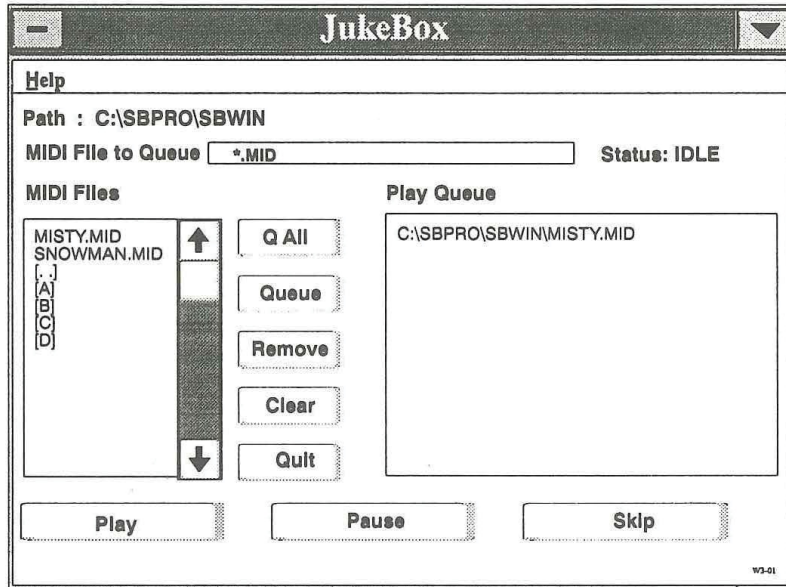
1. Double click on the **Setup** icon in the Sound Blaster Pro window.
2. When the dialog box appears, select the card you have installed: Sound Blaster or Sound Blaster Pro.
3. When the I/O port dialog box appears, the default will be selected. If it has not been changed, select OK. If the setting is not correct a message box will appear telling you that the setting is incorrect and return you to the dialog box.
4. Make or leave the default setting on the Interrupt and DMA settings.

JukeBox

JukeBox plays MIDI files. (Files with extension .MID). This program provides a demonstration of the Sound Blaster Pro in the Windows 3.0 environment. The program was written using the Microsoft Windows Development Kit and the Sound Blaster Developer Kit (SBK for Windows).

JukeBox uses the same conventions as most Windows applications. You can use the mouse, or the keyboard to make selections. You can double click with the left mouse button to select files or change directories. Without a mouse you can use the **Tab** key to move from option to option. When the desired function is highlighted, press the **Enter** key to execute this operation. You can also use the **Alt** key and the underlined character to select menu items.

The MIDI files list displays any file with the .MID extension. We have included some sample files for you to play with. The Play Queue box is where you place the MIDI files to play. The MIDI files are played in the order they appear. You can skip or remove a file at any time.



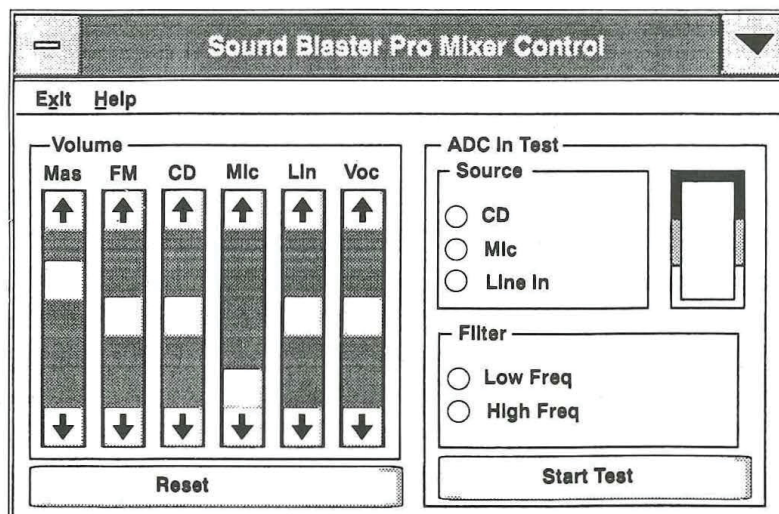
Button

Button	Description
Q All	Pressing this button places all MIDI files in the Play Queue.
Queue	This button is used to place a selected MIDI file in the Play Queue. Select (highlight) a file and then press the Queue button. MIDI files can be placed in the Play Queue in any order. You can place a file in the Play Queue by double clicking on the file in the MIDI files box.
Remove	This removes a file from the Play Queue. Select a file in the Play Queue and press the Remove button. If a file is not selected, the first file is removed.

Clear	Press this button to clear all files from the Play Queue box.
Quit	Quits the program.
Play/Stop	This button starts and stops the JukeBox playing songs in the Play Queue. The name on the button changes to reflect the current mode. To play, a file must be in the Play Queue. When the song is finished playing, the file will disappear from the Play Queue.
Pause/Continue	Press this button to pause the JukeBox at the current song. The button will change to say Continue . The JukeBox will remain paused until Continue button is pressed.
Skip	This skips to the next song in the Play Queue.

SBMixer

SBMixer lets you control individual volumes from different sources and lets you test input levels of Analog to Digital Conversion (ADC) sound. Using Windows, you can run SBMixer the same time as JukeBox. You can actually use JukeBox to play music in the background while using the microphone to sing along with your favorite song.



Moving Around SBMixer

Moving around SBMixer is simple—use the mouse or keyboard to select or highlight options. Use mouse or **Tab** key to move from option to option. Use the **Up** and **Down Arrow** keys to move the scroll bars.

Volume Controls

Available are:

- ▶ **MAS** - The Master volume control.
- ▶ **FM** - FM Music
- ▶ **CD** - CD Player
- ▶ **Mic** - Microphone - default is 0.
- ▶ **Lin** - Line In
- ▶ **Voc** - Voice

Buttons

- ▶ **Reset** - Resets all volumes to their default levels.
- ▶ **Start Test** - Starts the input source test

ADC In Test

The ADC In Test lets the user see a graphic representation of sound level from a selected source.

To test:

1. Select source
2. Select filter
3. Press the Start Test button.

When sound is heard, a bar will appear in the box next to the Source box. This bar will reflect sound level changes.

Filters

Selecting either the high or low frequency filter is a matter of individual taste. Play around with filter selection to see what sounds better to you.

APPENDIX A

GENERAL SPECIFICATIONS

Sound Capabilities:

22 voices of FM music - Two sets of FM music chips
Frequency Modulation sound generation for realistic sounds

Each set of FM chips (one on Left channel, one on Right channel)
consists of :

Two modes: Nine sounds or Six melody sound and Five rhythm
sounds

supported by numerous games and entertainment software

Stereo Digitized voice channel (2 x 8 bit DAC)

Provide output of sound sampled from the real world - speech,
special effects, animal sounds, thunderstorm can be easily reproduced
on these stereo DAC channels.

▮ programmable variable sampling rate 4KHz to 44.1 KHz

DAC Transfer modes :

- ▮ Direct mode - direct single byte transfer by CPU
- ▮ DMA mode - No CPU intervention/overhead required

▮ compression schemes :

8 bit data , no compression

2 to 1 data compression: 4bit ADPCM, hardware decompression

3 to 1 data compression: 2.6bit ADPCM, hardware decompression

4 to 1 data compression: 2bit ADPCM, hardware decompression

Built-in Digital/Analog Mixer

Software programmable digital/analog mixer

Mixing Inputs each with digital volume control (log scale)

- ▶ Stereo DAC - 8 levels
- ▶ FM Music - 8 levels with steering
- ▶ CD-Audio - 8 levels
- ▶ Line-In - 8 levels
- ▶ Microphone - 4 levels
- ▶ Master Vol - 8 levels

Built-in stereo power amplifier

Max output : 4 watts per channel, 4 ohms stereo outputs
stereo headset connector, drives any kind of speakers, portable
speakers or headsets directly.

Built-in Manual Master Volume Control

Voice Input (Digital Sampling) Capability

8 bit stereo A-D conversion of sound signal

- ▶ variable sampling rate : 4KHz to 44.1KHz

ADC transfer modes:

- ▶ Direct mode
- ▶ DMA mode - no CPU intervention required

Built in microphone jack and amplifier with auto-gain control

For direct input (sampling) of sound/speech from the real world
through standard microphone.

Input selectable by software from :

- ▶ Microphone input (mono)
- ▶ Line input (mono or stereo)
- ▶ CD audio input (mono or stereo)

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CD-ROM Interface

Built-in CD-ROM AT-BUS type interface.

Joystick Port

Standard "Game I/O port" built-in (15 pin D-sub connector) connects any standard IBM compatible joystick (analog)

MIDI Interface

Built-in MIDI interface, for connection to MIDI instruments or keyboards.

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APPENDIX B

I/O Address Selection

The Sound Blaster Pro uses 24 consecutive I/O addresses. There are 2 choices of I/O Base address.

Base Address	I/O Addresses used
220H	220H to 237H
240H	240H to 257H

I/O Address Map

200H - 207H :	Game port	(read/write)
Base + 0H :	Left FM music Status Port	(read only)
Base + 0H :	Left FM music Register Address Port	(write only)
Base + 1H :	Left FM music Data Port	(read only)
Base + 2H :	Right FM music Status Port	(read only)
Base + 2H :	Right FM music Register Address Port	(write only)
Base + 3H :	Right FM music Data Port	(read only)
Base + 4H :	Mixer chip Register Address Port	(write only)
Base + 5H :	Mixer chip Data Port	(read/write)
Base + 6H :	DSP Reset	(write only)
Base + 8H :	FM music Status Port	(read only)
Base + 8H :	FM music Register Address Port	(write only)
Base + 9H :	FM music Data Port	(read only)
Base + 0AH :	DSP Read Data	(read only)
Base + 0CH :	DSP Write Data or Command	(write only)
Base + 0CH :	DSP Write Buffer Status (Bit 7)	(read only)
Base + 0EH :	DSP Data Available Status (Bit 7)	(read only)
Base + 10H :	CD-ROM data register	(read/write)
Base + 11H :	CD-ROM status register	(read only)
Base + 12H :	CD-ROM reset register	(write only)
Base + 13H :	CD-ROM enable register	(write only)
388H	FM music Status Port	(read only)
388H	FM music Register Address Port	(write only)
389H	FM music Data Port	(read only)

Connector Pin Assignment

PC Speaker connector		
PIN	SIGNAL	I/O
1	+5V	IN
2	SPK	IN

CD IN connector		
PIN	SIGNAL	I/O
1	GROUND	IN
2	CD LEFT CHANNEL	IN
3	GROUND	IN
4	CD RIGHT CHANNEL	IN

APPENDIX C

Quick Reference for Problem Solving

Help for Installation

Read this if you have problems installing Sound Blaster Pro. (Refer to: **Common Problems Encountered**)

When installing the Sound Blaster Pro Card, beware of possible hardware conflicts with other adaptor cards.

Each adaptor card may contend for various CPU resources, there are three possible sources of hardware conflicts :

- ▮ DMA channel conflict
- ▮ IRQ (Interrupt Request) lines conflict
- ▮ I/O address conflict

In the case of Sound Blaster Pro, it uses :

- ▮ DMA Channel 1 by default, for its digitized voice input/output DMA operations.
- ▮ Interrupt default at IRQ 7 (used for voice/MIDI operations) Jumper selectable at IRQ 2, IRQ 10, IRQ 5 and IRQ 7
- ▮ I/O address : 220H - 237H as default. Jumper selectable at : 220H and 240H. FM music chip also uses addresses 388H and 389H. Joystick port uses the standard address of 200-207H

DMA Conflict

The DMA channel used by the Sound Blaster Pro is selectable from 0,1 and 3. It can share a DMA channel with other adaptor cards, provided that these cards can also share DMA channels.

Other cards using DMA channels can have their DMA channels selectable. We suggest that you change the others cards' DMA Channel to either Channel 0 or Channel 3, if a conflict occurs.

Interrupt Line (IRQ) Conflict

The Sound Blaster Pro uses interrupt line IRQ7 as default. Some printer interface (LPT1:) snatch away the IRQ7 even though it never requires the interrupt.

In the rare case of interrupt conflict with another I/O card, you can change the interrupt of the Sound Blaster Pro to IRQ2 or IRQ5

(See Table 1 for the best IRQ line to use.)

We don't suggest using IRQ10, because there are too many existing software packages that do not allow the selection of IRQ10.

I/O Address Conflict

The possibility of conflict on the default I/O address of 220H is very small. We advise against changing this I/O port address. Changing from this default I/O address means that you have to re-install many software programs that support Sound Blaster Pro.

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Interrupt	AT Machines
IRQ 0	Used by system Timer
IRQ 1	Used by Keyboard
IRQ 2	FREE
IRQ 3	FREE (or COM Port 2)
IRQ 4	Use by COM Port 1
IRQ 5	FREE
IRQ 6	Used by Diskette Controller
IRQ 7	Default used by Sound Blaster Pro
IRQ 10	FREE

DMA Channels	AT Machines
DMA Channel 0	FREE
DMA Channel 1	Default
DMA Channel 2	Used by Diskette Controller
DMA Channel 3	FREE

Interrupt and DMA Assignment

If there is a conflict with another card in your system, we suggest you change the I/O port address of the other card. Remember to re-install the I/O port address for programs running on that card.

Common Problems Encountered

- PROBLEM** : TEST-SBP's Error 0400
- CAUSE** : Conflict on DMA Channel 1 with scanner card or network card, or other special cards that uses DMA channel 1.
- REMEDY** : Remove scanner card or network card (if you have one) and re-install its DMA to Channel 3. You need an AT machine to resolve this conflict. (see DMA CONFLICT)

Other cards that could possibly use DMA Channel 1 are: diskette COPY cards, SCSI cards or any special card. Remove these special cards one by one and run TEST-SBP to see if the error message disappears. If the error disappears, then the card that is just removed is in conflict with Sound Blaster Pro. Check the card's manual for re-installing its DMA.

- PROBLEM** : TEST-SBP's ERROR FOUND ON INTERRUPT
- CAUSE** : Conflict on IRQ7, your system uses up IRQ7
- REMEDY** : Remove Sound Blaster Pro from your system, and re-install its Interrupt jumper (refer "location of jumper" for more details) from IRQ7 to IRQ2 or IRQ5.
If you have used up IRQ2 and IRQ5 for some other card, you can try to look at IRQ7 again.

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If it is also used up, try to look for the jumper on your system board or Parallel I/O card that allows you to disable IRQ7 for LPT1:. You can consult the respective manual or your computer vendor on how to do this.

- PROBLEM** : Voice Recording too soft.
- CAUSE** : Microphone used is not sensitive enough.
- REMEDY** : Use a microphone that has a 600 ohm impedance and a sensitivity of -75 dB or better for good recording.
(As a rule of thumb, one that costs more than US\$30 should do the job. Remember to buy a 1/4 inch to 1/8 inch adaptor-jack if the microphone has a 1/4 inch jack) A condenser microphone would work well.
- PROBLEM** : Background static noise from the speakers.
- CAUSE** : Noisy power supply of the computer system.
- REMEDY** : Computer systems are well-known to be the greatest producers of electrical noise. Much care had been taken in the design of Sound Blaster Pro's built-in amplifier to reduce as much noise from the computer's power supply as possible. There are, however, some computer systems that simply produce too much noise. These noise are picked up and amplified to audible range when the power amplifier is set at a high volume. There is no good remedy here, except to turn down the volume control. If louder volume is desired, try to amplify using an external amplifier.

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PROBLEM : "No Interrupt vector available" error when running SBFMDRV.

CAUSE : All the DOS software interrupt vectors (INT 80H - 0BFH) are taken up by a resident program that is misbehaving.

REMEDY : Most commonly, the misbehaving resident program is a DOS MENU resident program in your AUTOEXEC.BAT file. You can avoid problem with this kind of resident programs in the following ways:

- Boot the system again from a DOS diskette and then run SBFMDRV from the \SBPRO sub-directory to confirm that the problem is solved.
- During the booting process of the fixed disk, press Ctrl-Break to abort the AUTOEXEC file. Then run

\SBPRO\SBFMDRV

- Execute \SBPRO\SBFMDRV before running the misbehaving program in your AUTOEXEC file. i.e. insert the line \SBPRO\SBFMDRV before the misbehaving program. This might only solve some cases with a partially misbehaved program. With a badly misbehaved resident program, you might have to remove it from the AUTOEXEC totally.

PROBLEM : Joystick port not working

CAUSE. : Sound Blaster Pro's Joystick port conflicts with existing joystick port in the system.

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REMEDY : Take out the Sound Blaster Pro Card and remove the JOYSTICK ENABLE jumper (JP4). Use the joystick port in your system instead.

Note: Removing JP4 will not remove the MIDI function of the card. The MIDI pins are still active on Sound Blaster Pro's joystick port.

PROBLEM : Joystick not working properly in some programs.

REMEDY : This is a classic problem with PC's joystick port which uses the CPU timing to calculate joystick position. When a CPU is too fast and the program does not take good care of the change in CPU speed, the wrong calculation would cause the joystick port to move to its unusable range.

The Sound Blaster Pro adheres to this PC standard and hence would inherit the same problems. You could confirm that the joystick port is working if some programs can handle the joystick properly.

The possible remedy here is to switch the computer to its lowest possible speed.

PROBLEM : Sound Blaster Pro's MIDI port not compatible to Roland MPU 401.

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REMEDY : The Sound Blaster Pro complies with the International MIDI Association recommended standard. The MPU401 has some intelligence in its MIDI implementation. This intelligence could be easily emulated by a small driver routine in the PC. Hence, programs that run on the MPU401 cannot work directly on the Sound Blaster Pro. They must be modified by their respective software companies in order to run on the Sound Blaster.

Before buying any MIDI software, please ensure that they support Sound Blaster Pro.

PROBLEM : Computer hangs after running one of the Sound Blaster Pro program.

CAUSE : Conflict with other adaptor cards in the system.

REMEDY : To identify the possible conflicting card, remove all the non-essential cards one by one from the system; leaving only the essential cards : Diskette/Fixed Disk Controller Card and Video Adaptor Card in the system.

After each card is removed, run the same program that hangs the system. If problem is solved, then the last card removed has a possible conflict with Sound Blaster Pro. Try to determine whether it is a DMA conflict, Interrupt conflict or I/O address conflict by looking up the manuals of this card.

APPENDIX D

Connecting the PC Internal Speaker

You can connect the sound of the internal PC speaker to Sound Blaster Pro. However, due to the variations of internal PC speaker connections found in different PCs, you will need an experienced PC technician to do the job for you. You may want to seek the help of your computer dealer.

Procedures For PC Technicians only:

- ▶ Locate the PC speaker connections on the motherboard.
- ▶ Remove the connection to the internal PC speaker.
- ▶ From the motherboard, connect a wire from the +5Vdc pin of the speaker connector to pin1 of JP1 on the Sound Blaster Pro.
- ▶ Connect another wire from the Data out pin of the motherboard speaker connector to pin2 of JP1 on the Sound Blaster Pro.
- ▶ You will need to provide the suitable connection wires and sockets yourself.

DO NOT ATTEMPT TO FIX THE CONNECTION YOURSELF IF YOU ARE NOT SURE OR ELSE YOU MIGHT DAMAGE YOUR PC OR THE SOUND BLASTER PRO. CREATIVE LABS, INC. OR HER DISTRIBUTORS WILL NOT BE LIABLE FOR SUCH DAMAGES.

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APPENDIX E

Connecting CD-ROM Drive

The Sound Blaster Pro has a built-in CD-ROM Drive interface which can be connected to a Matsushita model CR-521 CD ROM Drive. Detailed connecting instructions and cable kits are provided when you purchase the CD-ROM Drive from Creative Labs. or its dealers.

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