
Knowing Your Sound Blaster 16

Welcome to the next wave of multimedia computing! Fully Sound Blaster compatible, your audio card supports these features:

- ☐ Plug and Play (PnP) ISA specification version 1.0a
- ☐ Compression algorithms such as A-law, Mu-law, CTADPCM, and IMA-ADPCM
- ☐ Full-duplex operation
- ☐ Creative 3D Stereo Enhancement Technology

Read this leaflet to know the components and settings of your audio card. Read the *Getting Started* manual to find out how to install and use your new audio card.

Checking System Requirements

Your card requires at least:

- ☐ An Intel Pentium or AMD K5 90MHz computer with a VGA or SVGA card installed
- ☐ 4 MB RAM
- ☐ 7.5 MB free hard disk space
- ☐ Windows 95 or Windows 3.1 with DOS 5.0 and a Plug and Play (PnP) configuration manager

On the Audio Card

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

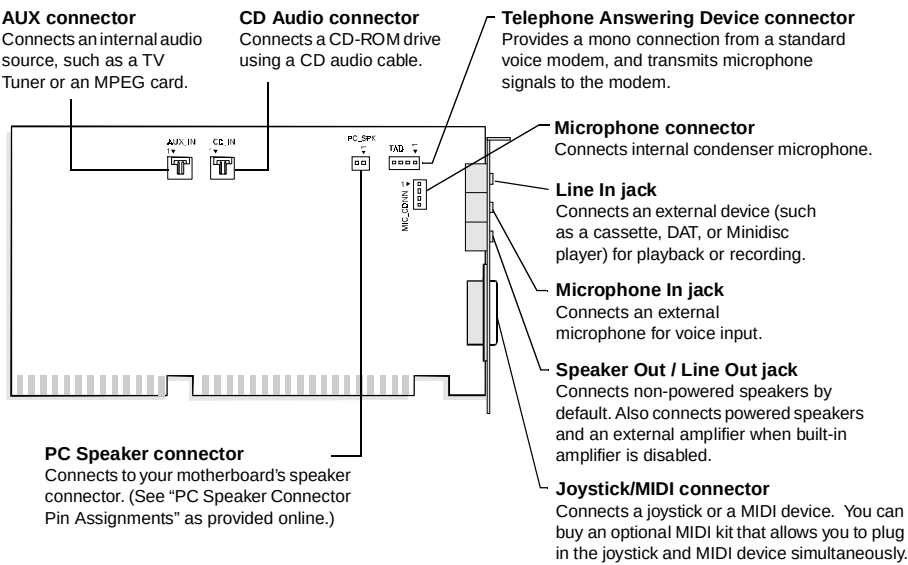


Figure 1: Jacks and connectors on your audio card.

Changing Audio Card Settings

This section is organized as follows:

- ☐ Changing Hardware Resource Settings
- ☐ Enabling/Disabling Creative 3D Stereo Enhancement
- ☐ Enabling/Disabling Full Duplex Operation
- ☐ Enabling/Disabling Joystick Interface
- ☐ Enabling/Disabling the Built-in Amplifier

Changing Hardware Resource Settings

The following tables list the possible default settings for devices on your card. When necessary (for example, when there is a hardware conflict), you may change one or more of these settings. For details, see Appendix A, “Understanding the Installation” in *Getting Started*.

Table 2: *Input/Output (I/O) addresses.*

Device	Default I/O Address Range
Audio interface	220H to 22FH
Game/Joystick interface	201H
MPU-401 UART MIDI interface	330H to 331H
Stereo music synthesizer	388H to 38BH

Table 3: *Interrupt request (IRQ) line assignments.*

Device	Default IRQ Line
Audio interface	5

Table 4: *Direct memory access (DMA) channel assignments.*

Usage	Default DMA Channel
First DMA channel	1
Second DMA channel	3

Table 5: *BLASTER environment variables.*

Parameter	Preferred Value
Axxx	A220
Ix	I5
Dx	D1
Hx	H1
Pxxx	P330
Tx	T6

Enabling/Disabling Creative 3D Stereo Enhancement

The Creative 3D Stereo Enhancement (3DSE) effect allows you to eliminate speaker crosstalk which occurs when two speakers are placed close to each other. With this effect enabled, mono and stereo sounds produced by your speakers will have increased depth and breadth.



If your speakers or another device has 3D sound technology, do not activate the feature in both devices. 3D Stereo Enhancement, with another 3D sound technology, may distort audio output.

To enable or disable 3DSE in Windows 95:

1. Start Creative Mixer. Click the Start button, point to Programs, point to the Sound Blaster menu, and click Creative Mixer.
2. To view the title bar, click anywhere in the Creative Mixer window. On the system menu, click Input/Output Settings.
3. To enable 3DSE, select the 3D Stereo Enhancement check box. To disable the effect, clear the check box.

To enable or disable 3DSE in DOS/Windows 3.1:

1. Exit to DOS if you are in Windows 3.1.
2. At the DOS prompt, change to the directory containing your audio software; for example, C:\SB16.
3. Type MIXERSET and then press ENTER to display the control panel.
4. To enable the effect, select the 3DSE check box. To disable the effect, clear the check box.

Enabling/Disabling Full Duplex Operation

Full duplex on your audio card is useful for audio conferencing and telephone applications. It allows you to simultaneously playback and record audio data by using the same sampling rate for both.



For details on full duplex constraints, refer to the online *User's Guide*.

To enable or disable full duplex in Windows 95:

1. Click the Start button, point to Settings, and click Control Panel.
2. In the Control Panel window, double-click the System icon.
3. In the System Properties dialog, click the Device Manager tab.
4. Double-click Sound, Video And Game Controllers.

5. Select the Creative Sound Blaster entry for your audio card and click the Properties button.
6. In the Properties dialog, click the Settings tab.
7. To enable full duplex, select Allow Full Duplex Operation check box. To disable the operation, clear the check box.
8. Click the OK button.

To enable or disable full duplex in Windows 3.1:

1. Open the File Manager.
2. Locate the SYSTEM.INI file in your Windows directory.
3. Double-click the file; the file is opened in a text editor.
4. In the **[sndblst.drv]** section, locate the **FullDuplex=x** line.
To enable the feature, **FullDuplex=1**.
To disable it, **FullDuplex=0**.
5. Save the file and restart your system to update the drivers.

Enabling/Disabling Joystick Interface

The Gamepad Joystick interface on your audio card can be enabled or disabled in DOS/Windows 3.1 and Windows 95.

To enable or disable the interface in Windows 95:

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



After restarting Windows 95, the *only* indicator that the interface is disabled is the cleared Original Configuration (Current) check box or the selected Disable In This Hardware Profile check box.

To enable or disable the interface in DOS/Windows 3.1:

1. In Windows 3.1, exit to DOS and then change to the directory where your CTCM and CTCU programs are installed. The default directory is C:\CTCM. Type **CTCU** and press ENTER.
2. On the Menu of the Creative Plug and Play Configuration Utility screen, click PnP Cards.
3. In the List Of PnP Cards box, click the Creative Plug and Play card. In the List Of Devices box, click Gameport.
4. Click the Resources button. The Resources window displays the current resources assigned to the interface.
5. To enable the interface, clear the Disable check box. To disable it, select the Disable check box.
6. Click the OK button twice.
7. On the Menu, click Exit. Type the path of your Windows 3.1 directory (for example, **C:\Windows**) and press ENTER.
8. Restart your system for the change to take effect.

Enabling/Disabling the Built-in Amplifier

Your audio card includes a speaker out/line out jack that connects non-powered speakers by default. To connect powered speakers or an external amplifier, the built-in amplifier must first be disabled.



The built-in amplifier can deliver a maximum output power of four watts per channel to four-ohm speakers and two watts per channel to eight-ohm speakers. Do not play at maximum volume if your speakers cannot handle this power.

To enable/disable the built-in amplifier:

1. If your audio card is already installed, turn off the power to your computer and any connected devices. Remove the cover and then the audio card.
2. Enable or disable the amplifier according to the settings shown.

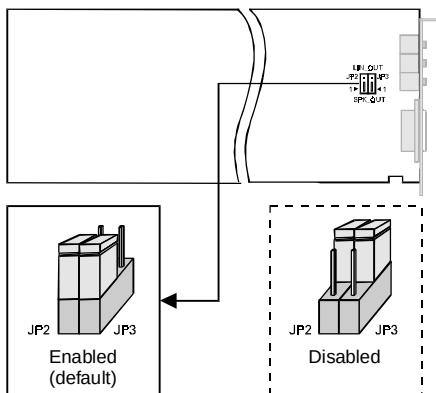


Figure 6: Enabling/Disabling the built-in amplifier.

General Specifications

Plug and Play

- ☐ ISA Specification version 1.0a compliant

Stereo Music Synthesizer

- ☐ 4-operator 11-voice or 2-operator 20-voice stereo music synthesizer
- ☐ Compatible with previous Sound Blaster music synthesizer chips

Stereo Digitized Voice Channel

- ☐ Full duplex
 - ☐ 16-bit and 8-bit digitizing in stereo and mono modes
 - ☐ Programmable sampling rates, 5 kHz to 44.1 kHz in linear steps
-  Your audio applications may support only selected ranges of sampling rates.

- ☐ First and Second DMA channels for audio recording and playback
- ☐ Dynamic filtering for digital audio recording and playback

Built-in Digital/Analog Mixer

- ☐ Mixes sources from digitized voice and inputs from MIDI devices, CD Audio, AUX, Line In, Microphone, and PC Speaker
- ☐ Selectable input source or mixing of various audio sources for recording

Volume Control

- ☐ Software volume control of Master Playback Volume, Master Recording Volume, Digitized Voice, and inputs from MIDI devices, CD Audio, AUX, Line In, Microphone, and PC Speaker
- ☐ Microphone level at 32 levels:
 - above 0 dB, it is in 3 dB steps
 - below 0 dB, it is in 1.5 dB steps
- ☐ All other sources at 32 levels in 1.5 dB steps
- ☐ Full software control of fade-in, fade-out, and panning effects

Built-in Stereo Power Amplifier

- ☐ Four watts per channel with four ohms stereo output
- ☐ Internal or External Audio Output Amplifier

3D Stereo Enhancement Technology

- ☐ Increased depth and breadth in perceived audio
- ☐ Enhances mono and stereo audio output
- ☐ Independent of speaker quality
- ☐ Independent of setup configuration (for example, placement and alignment of speakers with the listener)

MIDI Interface

- ☐ Built-in MIDI interface for connection to external MIDI devices

Declaration of Conformity

According to the FCC96 208 and ET95-19 documents,

Name: **Creative Labs Inc.**

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Milpitas, CA 95035,
United States
Tel: (408) 428-6600**

declares under its sole responsibility that the product

Trade Name: **Creative Labs**

Model Number: **CT4171**

has been tested according to the FCC / CISPR22/85 requirements 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.

**Compliance Manager
Creative Labs, Inc.
May 1, 1997**

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5,317,104; 5,342,990; 090,783; 4,649,783.