

# Analog Devices AD1889 PCI-Sound Card

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Configuration and Hardware

USER MANUAL

July 1998

## FEDERAL COMMUNICATIONS COMMISSION (F.C.C.) STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions : (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits of 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, there is no guarantee that interference will not occur in a particular installation, if this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

**NOTE:** 1. The use of a non-shielded interface cable with this equipment is prohibited.

**CAUTION:** Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

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# 1. DESCRIPTION

This is a new audio adapter that provides the next generation of PCI audio performance to the PC market. The adapter not only meets the new demands of advanced PC audio applications but also enables the integration of a complete multimedia subsystem on a single adapter. The adapter functionality and interfaces are compliant with all major industry standards, including the SoundBlaster Compatible, PC'97, Windows 95 Direct Sound, Windows Sound System and PCI 2.1 bus specification.

## 1.1. Features

### Chipset

- AD1889 + AC '97 CODEC (AD1819)

### System Interface

- 32 bit PCI Bus Master, PCI 2.1 compliant

### Hardware Interface

- MPU-401 UART mode compatible MIDI interface
- High Performance Game Port
- Programmable Audio CODEC Interface
- Support AC-1 Interface (AC-Link)
- 5V Power supply for I/O & internal core logic
- OPL3 compatible music synthesizer
- EE-PROM Interface (option)

### Wavetable Synthesizer

- Euphonics S/W Wavetable synthesizer including
- 128 voice XG Capital S/W Wavetable Synthesizer including

### Hardware Acceleration

- Direct Music Hardware Acceleration
- Direct Sound Hardware Acceleration

### Software Compatibility

- Fully Sound Blaster and Sound Blaster Pro compatible
- Direct Sound compatible

### Software Support

- WINDOWS 95/98
- WINDOWS NT

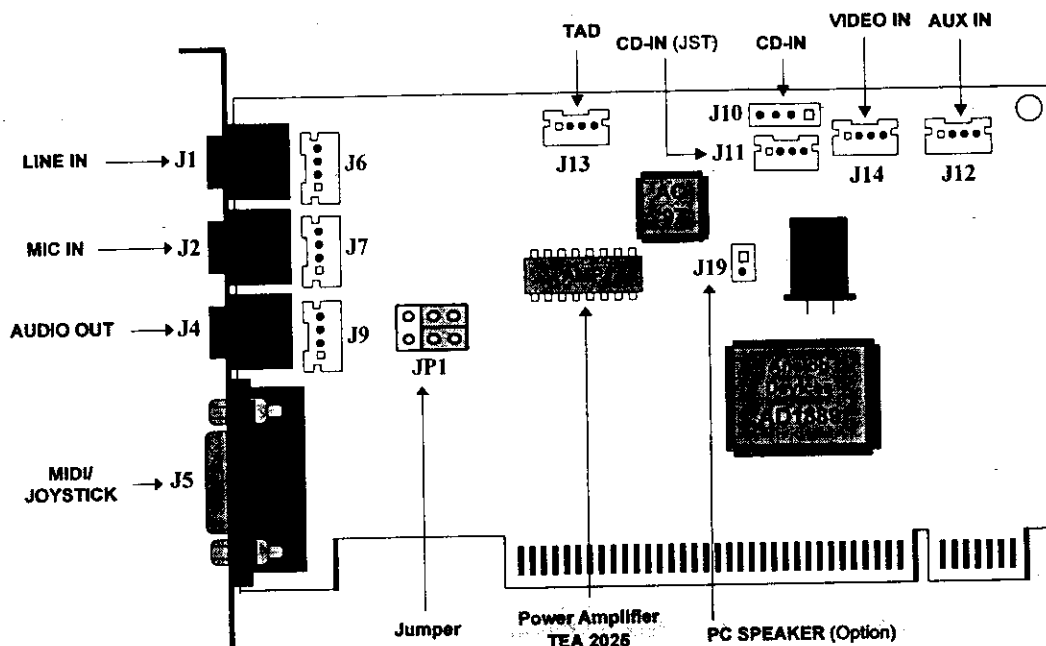
### Amplifier

- 2 Watt per channel output

### 3D Effect

- Direct Sound
- Euphonic Positional 3D
- PHAT Stereo 3D Stereo Enhancement

## 1.2. Card Figure



## 1.3. Connectors

This PCI Sound Card includes up to nine internal connectors, three external Jack Ports, one external MIDI/ Joystick connector, and one Jumper switch.

### 1.3.1. External Connectors:

- J1: ..... Ø 3.5mm Phone Jack for **LINE IN**.
- J2: ..... Ø 3.5mm Phone Jack for **MIC IN**.
- J4: ..... Ø 3.5mm Phone Jack for **AUDIO OUT**.
- J5: ..... Connector for **MIDI/JOYSTICK**.

### 1.3.2. Internal Connectors:

- J6: ..... Internal connector for **LINE IN**. (optional)
- J7: ..... Internal connector for **MIC IN**. (optional)
- J9: ..... Internal connector for **AUDIO OUT**. (optional)
- J10: ..... Connector for **CD-AUDIO IN**.
- J11: ..... Connector for **CD-AUDIO IN**.
- J12: ..... Connector for **AUX IN**.
- J13: ..... Connector for **TAD/VOICE MODEM**.
- J14: ..... Connector for **VIDEO IN**.
- J19: ..... Connector for **PC SPEAKER**. (optional)

### 1.3.3. Audio Connectors:

J10: CD-Audio



L: LEFT CHANNEL SIGNAL  
G: GROUND  
R: RIGHT CHANNEL SIGNAL

J11: CD-Audio  
JST



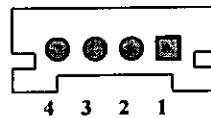
L: LEFT CHANNEL SIGNAL  
G: GROUND  
R: RIGHT CHANNEL SIGNAL

J12: AUX In



L: LEFT CHANNEL SIGNAL  
G: GROUND  
R: RIGHT CHANNEL SIGNAL

J13: TAD/Voice Modem



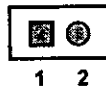
1 PHONE IN  
2 GROUND  
3 GROUND  
4 MONO OUT

J14: VIDEO IN



L: LEFT CHANNEL SIGNAL  
G: GROUND  
R: RIGHT CHANNEL SIGNAL

J19: PC BEEP



1 PC SPEAKER IN  
2 +5V

### 1.3.4. Audio Output Jumper Settings for JP1:

Audio	Setting
<b>SPEAKER OUT</b> with Power Amplifier (Default)	
<b>LINE OUT</b> without Power Amplifier	

## 2. HARDWARE INSTALLATION

### 2.1. Handling the PCI Sound Card

**WARNING:** *Static electricity can damage your equipment. Do not take the card out of its static protective bag until you are ready to work with it.*

Follow these precautions when handling the card:

- Before you open the static protective bag, touch it to a metal expansion slot cover on the back of your computer. This drains static electricity from the package and from your body.
- Do not touch any exposed printed circuitry after opening the package.
- Keep other people from touching the card. They might have a static-electricity build-up.
- Limit your movement. Movement causes a build-up of static electricity.

### 2.2. Installing the PCI Sound Card

**Step 1.** Turn off the system and all peripheral devices.

**Step 2.** Disconnect the power cord and all peripheral devices from the system.

**Step 3.** Remove the system cover and identify an unused PCI slot.

**Step 4.** Unscrew the slot cover plate, plug in the PCI Sound Card, and tighten it with the screw.

**Step 5.** If you have speakers or amplifiers, plug the cable into the **J4** Jack on the back of the Sound Card.

**Step 6.** Depending on what type of CD Audio cable you have connect **J10** or **J11** on the Sound Card and the Audio output at the back of the CD-ROM drive. Make sure pin 1 of **J10** or **J11** is connected to the leftmost pin of the CD-ROM Audio output.

**Step 7.** Put back the system cover, reconnect the system power cord and all peripheral devices. Check and make sure all connections are correct before you turn on the system.

## 3. SOFTWARE INSTALLATION

### 3.1. Software Contents

There is one Installation CD-title which comes with this package.

This CD-title includes the necessary device driver and Application Software for Microsoft Windows 95 operating system.

**NOTE:** Before installing the new device driver, please make sure you have uninstalled the previous ones. Any other remaining sound card drivers may interfere with the installation of the new device driver.

### **3.2. Device Driver Installation Under Windows® 95**

To install the device driver under Microsoft® Windows® 95, please follow the steps below:

1. After you have installed the PCI Sound Card, restart your Microsoft® Windows®95 operating system.
2. The "New Hardware Found" dialog box will display the message "PCI Multimedia Audio Device". Choose the option "Driver from disk provided by hardware manufacturer".
3. Insert your Installation CD-title into your CD-ROM drive D or E. Assuming your CD-ROM drive is D, type **D:\AD1889\Win95** in the command line of the "Install From Disk" dialog box.
4. Make sure the dialog box specifies the correct drive letter and click on OK. This will start the copying process.
5. Follow the on screen instructions and you should be able to install the device driver easily.

### **3.3. Application Installation Under Windows® 95**

To install the Software application under Microsoft® Windows® 95, please follow the steps below:

1. Start up your Microsoft® Windows® 95 operating system.
2. Click on the START button and choose the RUN item.
3. Please, insert the CD-title into your CD-ROM drive. Assuming your CD-ROM drive is D, type **D:\AD1889\SETUP.EXE** in the command line of the RUN dialog box.
4. Click on the OK push button and follow the on-screen instructions.
5. The Software application will be installed into your system.

Reference  
Version 1.0