

USER MANUAL

PCI - SOUND CARD

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FCC
Version 1.0

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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.

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 Sound Blaster Compatible, PC'97, Windows 95 Direct Sound, Windows Sound System and PCI 2.1 bus specification.

1.1. Features

Baseline Features

- ⇒ SoundBlaster® and SoundBlaster Pro® compatibility
- ⇒ Professional, studio-quality, 64-voice wavetable synthesis
- ⇒ Analog/digital gameport and MPU-401-compatible UART
- ⇒ Windows® 95 drivers and installation
- ⇒ 3.3V operation, 5V compatible
- ⇒ Advanced power management
- ⇒ 128-pin PQFP package

Advanced Features

- ⇒ PCI bus master with 48-channel DMA interface
- ⇒ DirectSound acceleration
- ⇒ MMX-accelerated A3D Interactive audio
- ⇒ AC'97 CODECs supported
- ⇒ High-quality sample rate converter
- ⇒ Digital mixer and volume control
- ⇒ NT 4.0 drivers, WDM streaming, and USB ready
- ⇒ Sound coprocessor port

Hardware interface

- ⇒ *PCI Bus controller* - PCI V2.1 compliant with power management extensions
- ⇒ *AC'97 CODEC Port* - AC'97 controller or conventional CODEC support
- ⇒ *Game port* - Windows/real-mode DOS support, Digital DirectInput acceleration
- ⇒ *MPU-401 port* - The MPU-401 - compatible serial port provides GM 1.0 compatibility

PCI Sound Card

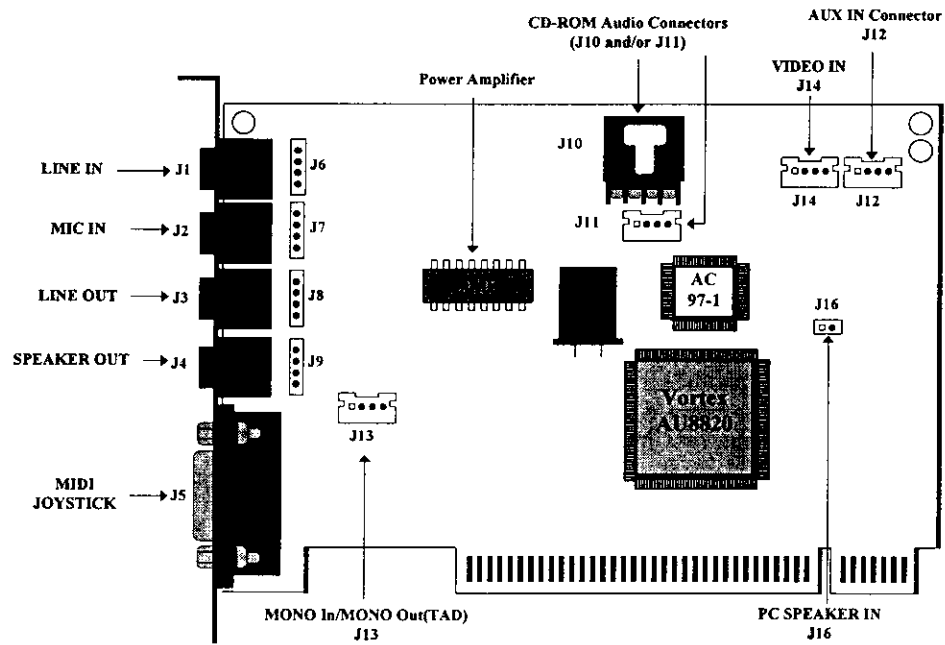
Built-in 2-channel Power Amplifier

- 2.5 Watt per channel output (6 Watt option).

Software Compatibility

- Fully SoundBlaster® and SoundBlaster Pro®2V 3.02 compatible.
- Windows® Sound System hardware register compatible.
- Windows® 95, Direct Sound, Microsoft™ Active X, AdLib compatible.
- OPL2/3 FM Synthese

1.2. Card Figure



1.3. Connectors

This PCI Sound Card includes up to six (seven) internal connectors, four external Jack Ports, one external MIDI/ Joystick connector, one VIDEO IN connector, one MONO IN/MONO OUT (TAD) connector, one and one AUX IN connector.

1.3.1. External Connectors:

- J1:** ø 3.5mm Phone Jack for **LINE IN**.
- J2:** ø 3.5mm Phone Jack for **MIC IN**.
- J3:** ø 3.5mm Phone Jack for **LINE OUT**.
- J4:** ø 3.5mm Phone Jack for **SPEAKER OUT**.
- J5:** Connector for **MIDI/JOYSTICK**.

1.3.2. Internal Connectors:

- J6:** Internal Connector for **LINE IN**.
- J7:** Internal Connector for **MIC IN**.
- J8:** Internal Connector for **LINE OUT**.
- J9:** Internal Connector for **SPEAKER OUT**.
- J10:** Connector for **IDE CD-ROM AUDIO IN. (ATAPI)**
- J11:** Connector for **IDE CD-ROM AUDIO IN. (JST)**
- J12:** Connector for **AUX IN**.
- J13:** Connector for **MONO IN/MONO OUT (TAD)**.
- J14:** Connector for **VIDEO IN**.
- J16:** Connector for **PC SPEAKER IN. (OPTION)**

1.3.3. Audio Connectors:

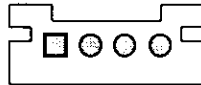
J10: CD-Audio
ATAPI



L G G R

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

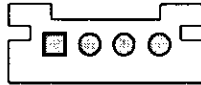
J11: CD-Audio
JST



G L G R

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

J12: AUX IN



L G G R

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

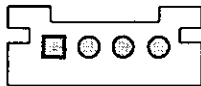
J13: TAD*



1 2 3 4

1 MONO IN
2 GROUND
3 GROUND
4 MONO OUT

J14: ext. VIDEO IN



L G G R

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

J16: PC SPEAKER IN



1 2

1: SPEAKER IN
2: +5V

* Telephone Answering Device

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 **J3** or **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. QUICK START

1. Remove any existing Vortex drivers from previous installations.
2. Install the Vortex hardware.
3. Install the Vortex Windows 95 drivers, Microsoft DirectX 5.0, and Vortex demonstration applications.

In most cases, you will be able to insert the card into your computer, insert the Installation CD-title into the CD-ROM drive, and follow the on-screen prompts for complete system installation.

3.2. DEVICE DRIVER INSTALLATION

3.2.1. Device Driver Installation Under Windows® 95

If you have older drivers in your system, please uninstall them first, as described in Section 3.2.2 on page 8.

1. Power on the system, placing the Installation CD-title in the CD-ROM drive.
2. Windows 95 displays the message "New Hardware Found" and starts the driver installation.
3. If Windows prompts you to provide the drivers for the PCI multimedia audio device, choose "Driver Disk Provided by Manufacturer" and select the installation CD-title's root ("") directory.
4. You may also be asked to insert the Windows 95 CD during the install process.

<p><i>Note: Some Windows 95 versions (OSR2) do not show this prompt. Instead, they ask whether to search the diskette and CD-ROM drives for the appropriate drivers.</i></p>

Installed drivers may include Vortex PCI audio, Vortex wavetable, Vortex mixer, DOS modem port, Vortex gameport interface, Vortex MPU401 interface, and Vortex Sound Blaster emulation.

Depending on the version of Windows 95 and the configuration of the system, you may be prompted to provide several file locations. Here are the CDs and directory locations for which you may be prompted:

Vortex Installation & Driver Disk
Vortex Application Setup \Setup

Windows NT Installation Disk.....\WINNT
Voyetra Audio Station.....\ASTATION

<p>NOTE: <i>You may be asked to reboot several times during installation. Reboot when asked. Additional software will continue to load when Windows restarts, until all components have been installed.</i></p>
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3.2.2. Uninstalling Device Drivers Under Windows® 95

For driver releases prior to 1.0, please run the UNINSTAL.BAT file as described in the previously distributed install guide. For driver releases 1.0 and later, you can use the following procedure:

1. Open the Windows 95 Device Manager (right-click on "My Computer" and select "Properties").
2. Open the "Multifunction Adapters" tree and select "Vortex Multifunction PCI Platform"
3. Press the "Remove" button at the bottom of the Device Manager window pane.
4. The drivers are now removed from memory, but are still on the hard disk.
To delete the files from the hard disk:
 - a. Open the Windows 95 control panel's "Add/Remove Programs" applet.
 - b. To remove the drivers, double-click "Aureal Vortex". A Vortex uninstaller application starts.
 - c. To remove the demo applications, double-click "Aureal Vortex Applications". There is no need to reboot the computer.

3.2.3. Windows® NT Installation

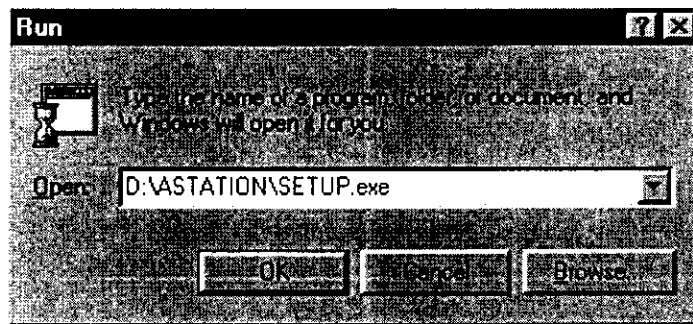
Follow the procedure described in the README.TXT file located in the Installation CD-title's WinNT directory.

3.3. Application Software Installation

3.3.1. *AudioStation* Installation Under Windows® 95

If you would like to install the application software which we have provided for Windows®95, please follow the steps as described below:

1. Please insert the installation CD-title into your CD-ROM drive D or E. Assuming drive D is used, type **D:\ASTATION\SETUP.EXE** in the command line of the RUN dialog box and click on the OK push button.



2. Follow the on-screen instructions and you should be able to install the application software easily.

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