

ASUS[®] PCI-AS300
SCSI/Audio MediaBus Card

USER'S MANUAL

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CONTENTS

Hardware Setup - SCSI/Audio

I. INTRODUCTION	1
The PCI-AS300 SCSI/Audio MediaBus Card	1
How this manual is organized	1
Item Checklist	1
II. FEATURES	2
PCI-AS300 Features	2
System Requirements:	2
Layout and Connectors of the PCI-AS300	2
CD-Audio Connector Pin Definitions	2
III. INSTALLATION	3
Installation Steps	4
1. Jumpers	4
Audio Adapter Amplifier	5
Audio Adapter Base I/O Addresses	5
2. Install the Expansion Card	6
3. Connect Cables	6
Audio Cables	6
SCSI Cabling	6
SCSI Cable Limits:	6
SCSI Types	7
Connecting Cables	7
4. SCSI ID Numbers & Termination	8
SCSI ID Numbers	8
SCSI Termination	8
5. Configuring the SCSI Adapter	9
The SCSISelect Configuration Utility	9
Configure/View Host Adapter Settings	10
SCSI Disk Utilities	10
Operating System Support	10
CE Compliancy	11
Troubleshooting	12
Cannot Boot from your SCSI Disk Drive	12

CONTENTS

IV. ADAPTEC SCSI SELECT	15
Configuring the SCSI Adapter	15
Configure/View Host Adapter Settings	15
SCSI Disk Utilities	15
IV. ADAPTEC EZ-SCSI UTILITY	17
Quick Start Instructions	17
Windows95 or WindowsNT	17
Windows 3.x	17
DOS	17
Troubleshooting Tips	18
SCSI Device Troubleshooting	18
Windows95/WindowsNT Troubleshooting	18
Information for DOS/Windows 3.1x Users	21
DOS and Windows3.1x Device Drivers	21
DOS and Windows3.1x ASPI Managers	21
DOS Formatting Utilities	22
Low-level Formatter (scsifmt)	22
Formatter and Partitioner (afdisk)	23
V. Adaptec System Drivers	84 pages
Creative Labs ViBRA 16C Audio	1
User's Notice	2
Manual Information	3
Installation CD	3
Installation CD Contents	3
VI. Audio Driver Installation	3
VII. Win95 Audio Driver	4
Configuration Manager	5
Creative PnP Configuration Manager (CTCM)	5
VIII. Win3.1x Audio Driver	5
Audio Drivers	7
Environment Variables	11
SOUND Environment variable	11
BLASTER Environment Variable	11
MIDI Environment Variable	12
Maximum Recording Rates for the Audio Hardware	12

FCC & DOC COMPLIANCE

Federal Communications Commission Statement

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- 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 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 manufacturer's 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:

- Re-orient or relocate the receiving antenna.
- Increase the separation 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 for help.

WARNING: The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

I. INTRODUCTION

The PCI-AS300 SCSI/Audio MediaBus Card

This is a brief guide on how to configure and install the PCI-AS300 adapter card in your system. The card is a composite SCSI adapter and 16-bit audio card that uses the ASUS MediaBus expansion slot. The MediaBus slot is a composite slot comprised of a 120-pin 5-volt PCI local bus slot and a 72-pin ISA slot extension. On the PCI-AS300, the SCSI adapter part of the card connects to the PCI slot and the audio card portion connects to the ISA slot extension.

How this manual is organized

This manual is divided into the following sections:

- I. INTRODUCTION** - This opening page.
- II. FEATURES** - Information and specifications concerning the PCI-AS300.
- III. INSTALLATION** - Instructions on setting up the PCI-AS300.
- IV. AUDIO DRIVERS** - Instructions on setting up the audio drivers.

Item Checklist

Please check that your package is complete. If you discover damaged or missing items, please contact your retailer.

- PCI-AS300 MediaBus adapter
- 50 Pin ribbon cable
- 68 Pin ribbon cable
- This user's manual
- 1 CD containing SCSI & audio drivers and utilities
- 1 diskette containing SCSI drivers for WinNT
- 1 diskette containing SCSI drivers for SCO Unix, Unix Ware

II. FEATURES

PCI-AS300 Features

SCSI:

- PCI Ultra SCSI produced by the Adaptec AHA7880 SCSI Chipset
- Supports 8-bit Fast SCSI with up to seven devices via a 50-pin ribbon cable connector
- Supports 16-bit Wide SCSI with up to 15 devices via a 68-pin cable connector
- Firmware configuration utility allows easy reconfiguration.

Audio:

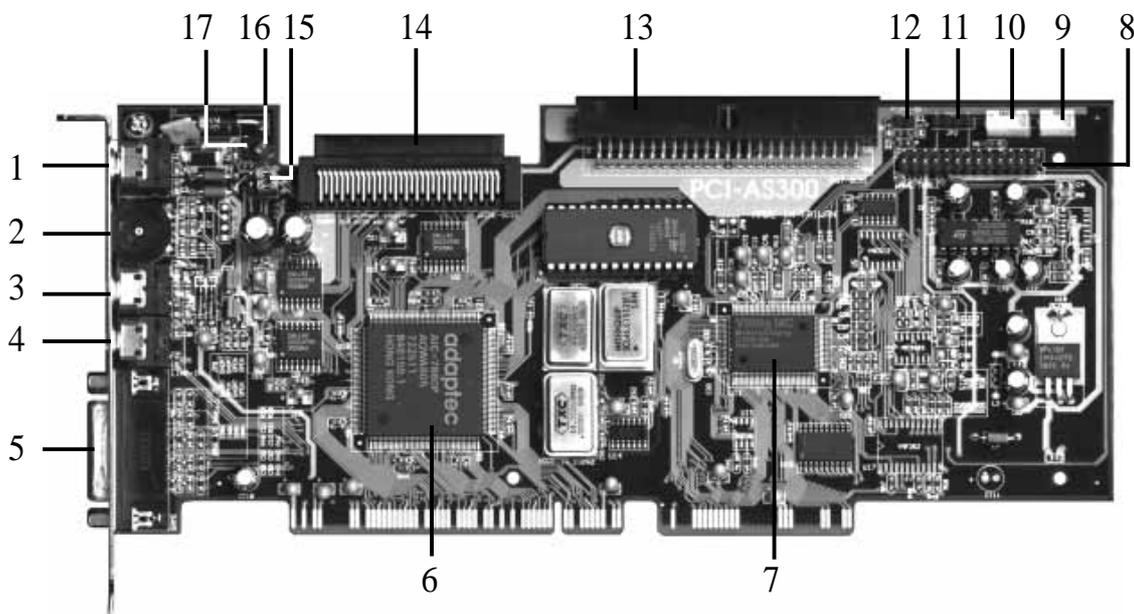
- Creative Labs ViBRA 16C PnP Audio Chip
- Full Duplex Supports
- 16-bit or 8-bit PCM 5KHz to 44.1KHz
- Wave Table Upgradeable
- Connections for Sony, Panasonic, and Mitsumi CD-ROM audio.
- Connections for MIDI, audio input/output, microphone input
- Software Includes:
 - DOS and Window 3.1 Drivers
 - Windows 95 Driver
 - Wave Editor
 - Wave OLE
 - Quick CD
 - Mixer Control

System Requirements:

- ASUS motherboard with MediaBus revision 2.0

III. INSTALLATION

Layout and Connectors of the PCI-AS300



- | | |
|-------------------------------|---------------------------------------|
| 1. Speaker out | 10. Mitsumi CD Audio Input |
| 2. Volume Control | 11. Sony CD Audio Input |
| 3. Microphone Input | 12. PCSpeaker Input |
| 4. Line Input | 13. 8-bit Fast SCSI 50 pin connector |
| 5. Game Port / MIDI connector | 14. 16-bit Wide SCSI 68 pin connector |
| 6. Adaptec SCSI 7880 Chipset | 15. Amplifier Enable / Disable Jumper |
| 7. Creative Labs 16C Chipset | 16. SCSI Activity LED |
| 8. Wave Table Upgrade | 17. External LED |
| 9. Panasonic CD Audio Input | |

CD-Audio Connector Pin Definitions

PANASONIC	SONY	MITSUMI
1 Left Signal	1 Right Signal	1 GND
2 GND	2 GND	2 Left Signal
3 Right Signal	3 GND	3 GND
-----	4 Left Signal	4 Right Signal

PC Speaker In PC Speaker Out

1 Mono Signal	1 Right Signal
2 GND	2 GND
-----	3 Left Signal
-----	4 GND

III. INSTALLATION
(Precautions)

III. INSTALLATION

Installation Steps

Before using your computer, you must follow the six steps as follows:

1. **Set the card's jumpers**
2. **Install Expansion Card**
3. **Connect device cables**
4. **Configure SCSI ID numbers and termination**
5. **Setup the oncard SCSISelect Utility if you need to change the defaults**
6. **Setup the BIOS Software.**

1. Jumpers

Some hardware settings are made through the use of jumper caps to connect jumper pins (JP) on the card. The jumper settings will be described numerically such as [----], [1-2], [2-3] for no connection, connect pins 1&2, and connect pins 2&3 respectively. Pin 1 for our cards is always on top  or on the left  when holding the connectors to the left. A "1" is written besides pin 1 on jumpers with three pins. The jumpers will also be shown graphically such as  to connect pins 1&2 and  to connect pins 2&3. Jumpers with two pins will be shown as  for short (On) and  for open (Off). For manufacturing simplicity, the jumpers may be sharing pins from other groups. Use the diagrams in this manual instead of following the pin layout on the board. Settings with two jumper numbers require that both jumpers be moved together. To connect the pins, simply place a plastic jumper cap over the two pins as diagramed.

WARNING: Computer motherboards and components contain very delicate Integrated Circuit (IC) chips. To protect the motherboard and other components against damage from static electricity, you should follow some precautions whenever you work on your computer.

1. Unplug your computer when working on the inside.
2. Hold components by the edges and try not to touch the IC chips, leads, or circuitry.
3. Use a grounded wrist strap before handling computer components.
4. Place components on a grounded antistatic pad or on the bag that came with the component whenever the components are separated from the system.

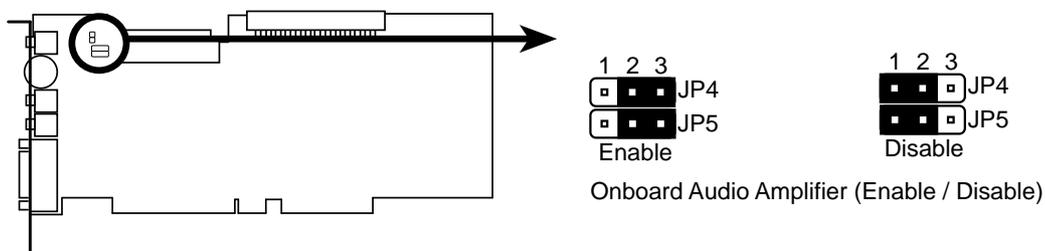
III. INSTALLATION

Audio Adapter Amplifier

You can Enable or Disable the audio adapter's amplifier feature using the following jumpers. If you plan on connecting unamplified speakers to the card, enable the amplifier. If you will use self-amplified speakers, disabling the amplifier on the card will improve the sound quality.

Audio Adapter Amplifier Selector (JP4, 5)

<u>Amplifier</u>	(Def)	
	<u>Enable</u>	<u>Disable</u>
JP4	[2-3]	[1-2]
JP5	[2-3]	[1-2]



Audio Adapter Base I/O Addresses

I/O addresses (or I/O address range) are areas of memory used by your computer's microprocessor to distinguish among various peripheral devices connected to your system when sending or receiving data. There are several such devices on your audio card. These devices are listed with their factory default I/O addresses.

I/O Address occupied by the Audio Card.

I/O Address Range	Usage
200H to 207H	Game Port
220H to 233H	Audio Interface
330H to 331H	MPU-401 UART MIDI Interface
388H to 38BH	FM Music Synthesizer

III. INSTALLATION

2. Install the Expansion Card

1. Unplug your computer. Open the system case and remove the slot cover for the expansion slot you wish to use.
2. Align the connectors and insert the card into the expansion slot firmly, making sure that the connectors are evenly inserted.
3. Install the card's mounting bracket to the system's case.
4. Attach SCSI cables from your internal SCSI devices and the audio cable from your CD-ROM.
5. Close your system case and power on your computer in order to setup the software.

3. Connect Cables

Once the card is installed in your system you should connect the cables for whatever devices you want to attach to the card. These divide into two types, CD-ROM audio cables and SCSI bus cables.

Audio Cables

As noted on the card diagram, there are connections for three types of CD-ROM audio cables. If you have a CD-ROM installed in your system, connect it to the appropriate connector. Note that many drives manufactured by vendors other than the three noted have audio cables that are compatible with one of these three connectors. Review the documentation that came with the drive for further information.

SCSI Cabling

The card has two SCSI cable connectors, one for 8-bit Fast SCSI and the other for 16-bit Wide SCSI. SCSI devices must be connected in a direct line forming a "bus" with no branching.

SCSI Cable Limits:

<u>SCSI TYPE</u>	<u>Cable Length Limit</u>
Single-ended SCSI	6 meters (19.7 feet)
Fast Single-ended SCSI	3 meters (9.8 feet)

WARNING: This adapter is for "Single-Ended" SCSI devices only. Do not connect "Differential" SCSI devices to this adapter.

III. INSTALLATION

SCSI Types

<u>Type</u>	<u>Specifications</u>	<u>Ultra</u>
SCSI	5MB/sec (8bit)	N/A
Fast SCSI (II)	10MB/sec (8bit)	20MB/sec
Wide SCSI (III)	20MB/sec (16bit)	40MB/sec

Connecting Cables

1. When you connect a SCSI cable to this card, you must align the cable so that the Pin 1 side of the cable connector is at the Pin 1 side of the cable connector on the card. The two SCSI connectors use different cables. The Fast SCSI connector connects to a 50-pin flat ribbon cable. The Pin 1 side of the ribbon cable is marked with a colored edge and the Pin 1 side of the connector on the card is labelled on the card. The Wide SCSI connector connects to a cable that has a connector which can only be attached to the card in one orientation, making the Pin 1 matchup automatic.
2. After you connect the cables to the host adapter, review the subject of SCSI identification (ID) numbers and termination covered in Section 4. Make sure that all devices you connect to the SCSI adapter have different ID numbers and that only the SCSI adapter and the last SCSI device on each bus is terminated.
3. Connect a cable between the host SCSI adapter and an internal SCSI device installed in your system. If there is more than one device, connect the additional devices with additional cables. You can connect up to seven devices to the Fast SCSI bus and fifteen devices to the Wide SCSI bus.

III. INSTALLATION

4. SCSI ID Numbers & Termination

You must set the SCSI identification numbers and properly terminate the SCSI bus before you can use the adapter and any peripherals connected to it.

SCSI ID Numbers

Each device on a SCSI bus must have a unique identification number. All SCSI devices have some means of setting the ID number for the device. The SCSI adapter must also have an ID number. The default number for the PCI-AS300 is 7. You should use this unless you know there is a specific need to change it. Consult the documentation for any other SCSI devices to see how to set their ID numbers. The recommended numbers are:

SCSI Host Adapter:	7 (Default)
SCSI Hard Disk Boot Device:	0
2nd SCSI Hard Disk:	1

Devices connected to the 8-bit Fast SCSI bus can have numbers from 0 to 7. The 16-bit Wide SCSI bus allows numbers from 0 to 15. SCSI devices vary in how they set the ID number. Some use jumpers, others have some kind of selector switch. Refer to the documentation for any devices you install for details on how to set the SCSI ID number.

SCSI Termination

Both ends of the SCSI bus must be terminated in order for the bus to operate properly. Since this card only supports internal devices, the SCSI adapter must be at one end of the bus and must be terminated. The device on the other end of the bus daisy chain must also be terminated.

Since this card supports two SCSI buses, the card termination can be set up to terminate either one or both buses. The WIDE SCSI bus is divided into "Low" and "High" bytes, the Low part being equivalent to the 8-bit Fast SCSI bus. If you will use both SCSI connectors, you must change the default setting. The required settings are shown in the chart below.

<u>Connector/Bus Used</u>	<u>Low</u>	<u>High</u>
50-pin connector only	ON	ON (Default)
68-pin connector only	ON	ON (Default)
50-pin & 68-pin connector	OFF	ON

III. INSTALLATION

To terminate the other end of either SCSI bus, you will need to refer to the documentation for the device at the end of the bus for information on how to terminate the device. Many devices use either jumpers or a switch to set termination. Others use resistor modules that must be removed to unterminate the device. It is critical that the last device, and only the last device be terminated in order of all of the devices on the bus to operate correctly. This card supplies termination power to the SCSI bus for devices that need it.

5. Configuring the SCSI Adapter

You probably will not need to change the default configuration of the PCI-AS300 SCSI adapter. In the event that you do need to, a configuration utility, *SCSISelect*, is stored on the card. This menu driven utility allows you to control the configuration of both the SCSI adapter and its interaction with devices connected to it.

After you have installed and connected devices to the card, reassemble your system according to the instructions in your system documentation. Once your system is assembled, turn on your computer. You should see a SCSI BIOS banner message listing connected devices and their ID numbers. If everything is working properly, you can go ahead and use your system. If you need to change the SCSI adapter configuration on the PCI-AS300, or if you want to customize the control settings for an individual SCIS device on the bus, you can run the *SCSISelect* configuration utility.

The SCSISelect Configuration Utility

To access *SCSISelect*, press <CTRL A> when you boot the computer, or when you see the BIOS banner message listing the attached devices. The *SCSISelect* screen will come up. Instructions on how to move the cursor and select options are at the bottom of the program window. You can select either Configure/View Host Adapter Settings or SCSI Disk Utilities.

III. INSTALLATION

Configure/View Host Adapter Settings

If you select the first option, the configuration screen will display. Pressing F6 at this level will load the adapter's default settings. To make a change, select an option and press Enter to display a list of possible settings for that option. To abandon changes after you have made them, press <ESC> and then choose **No** when a message appears asking if you will accept the changes made.

SCSI Disk Utilities

The SCSI Disk Utilities option displays information on SCSI IDs 0 through 15, listing all devices on the bus including non-disk devices. When you select a device from the list and press the <ENTER> key, another window pops up giving you the option of selecting one of two sub-utilities, Format Disk or Verify Media. These utilities are used for hard disk drives only and will have no effect on other non-disk SCSI devices.

Format Disk is a SCSI low-level format utility. In general, SCSI hard disks have already been low-level formatted when you get them, so you generally should not need to use this.

Verify Media scans the selected drive media for defects, notifies you of any found and gives you the option of reassigning bad blocks so that data will not be written to them. Doing this before you start using a disk is a good idea.

Operating System Support

The PCI-AS300 supports both DOS/Windows under MS-DOS 5.0 and up, allowing you to connect up to seven hard disk drives. You can use the supplied Adapted EZ-SCSI Windows utility to enable using non-disk SCSI devices such as scanners, tape drives, or CD-ROM drives. It also allows mounting and removing removable media such as CD-ROMs and support for more than eight hard disks under MS-DOS 5.0 or later and more than two hard disks under earlier versions.

In addition, this card supports operating systems other than DOS, including Novell NetWare, OS/2, OS/2 Warp, Windows NT, SCO Unix, and Unix Ware. You can refer to the card's software documentation for more information on this.

III. INSTALLATION

CE Compliancey

In order to comply with CD specifications, a core must be added to any cable that is connected to the "Game Port."



CE Compliant Ferrite Core



Wind the cable around the core one time as shown and press the sides of the core together until it locks.



III. INSTALLATION
(CE Compliancey)

III. INSTALLATION

Troubleshooting

In the event that you have problems getting the PCI-AS300 installed and working properly, make sure that:

- all the SCSI devices are turned on.
- all the cables connects the SCSI devices in a series.
- all the SCSI devices have a unique ID number on that BUS
- the last SCSI device is terminated.
- the BIOS setup correctly identifies the PCI part of the MediaBus slot

Cannot Boot from your SCSI Disk Drive

If you have any non-SCSI hard disk drives installed in your system, the master non-SCSI drive will be seen as the boot drive. If there are only SCSI drives installed in your system and will not boot from the primary drive, check the following:

- Make sure that all hard disk type entries in the BIOS Setup utility's CMOS setup are set to "None" or "No Drives Installed."
- Make sure the boot drive's SCSI ID is set to 0
- Check that the drive has been properly formatted for the operating system you are using and that the operating system is installed.

If none of the above solves the problem, back-up the drive and try using the *SCSISelect* utility to perform a low-level format and verification and then set an active partition for the operating system you are using and format the drive using your operating system's format command.

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SCSI/Audio MediaBus Card

USER'S MANUAL
Adaptec SCSI Drivers & Utilities

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IV. ADAPTEC SCSI SELECT

Configuring the SCSI Adapter

Access the SCSI BIOS by holding down both **CTRL** and **A** keys when you see the BIOS banner message listing the driver name and the attached devices. For example:

Adaptec AIC-7880 Ultra/Wide W BIOS v1.24
(c) 1996 Adaptec, Inc. All Rights Reserved.

<<< Press <Ctrl><A> for SCSISelect(TM) Utility! >>>

The SCSISelect screen will come up. Instructions on how to move the cursor and select options are listed on the bottom of the program windows. You can select either **Configure/View Host Adapter Settings** or **SCSI Disk Utilities**.

Configure/View Host Adapter Settings

Host Adapter SCSI Termination.....Low ON/High ON

- When using 50-Pin connector only, choose “Low ON/High ON” (Default)
- When using 68-Pin connector only, choose “Low ON/High ON” (Default)
- **When using both 50-Pin & 68-Pin, choose “Low OFF/High ON”**

Select the default of “Low ON/High ON” and press Enter, then use the up and down arrows to make your new selection and press Enter. Press ESC to go back to the Options menu. Press ESC again and select Yes to exit the program.

SCSI Disk Utilities

The SCSI Disk Utilities option displays information on SCSI IDs 0 though 15, listing all devices on the bus including non-disk devices. When you select a device from the list and press Enter key, another window appears giving you the option of selecting one of two sub-utilities, **Format Disk** or **Verify Media**. These utilities are used for hard disk drives only and will have no effect on other non-disk SCSI devices.

Format Disk - is a SCSI low-level formatting utility. In general, SCSI hard drive have already been low-level formatted when you get them, so you generally should not need to use this function.

Verify Media - scans the selected drive media for defects, notifies you of any found and gives you the option of reassigning bad blocks so that data will not be written to them. This is only necessary if you suspect that your SCSI disk drive has a problem.

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IV. ADAPTEC EZ-SCSI UTILITY

Welcome to Adaptec EZSCSI® 4.00e Adaptec EZSCSI gives you what you need to use your SCSI devices most effectively with Windows®95 and WindowsNT™. You can also use Adaptec EZSCSI on computers running DOS, Windows®3.1x, or Windows for Workgroups3.1x.

Quick Start Instructions

First, install SCSI devices (see the hardware documentation for details). Then follow the instructions for your operating system software in one of the following sections. We recommend that after you install Adaptec EZSCSI you run SCSTutor to learn more about the features of SCSI.

Windows95 or WindowsNT

If you want to install Windows95 or WindowsNT on a new computer system, you may not be able to access your SCSI CDROM drive at first. (Usually, you install Windows95 and WindowsNT from a CDROM disc.) To gain access to your CDROM drive, follow the DOS Quick Start instructions. Then reboot your computer and follow these instructions:

- 1 Install Windows95 or WindowsNT version 3.51 or above, and start it running on your computer.
- 2 Insert the installation CD into your CD-ROM drive.
- 3 Double click **My Computer** and your **CD drive** icon.
- 4 Double click **SCSI\EZSCSI** folder and **Setup.exe**
- 5 Follow the instructions that appear on the screen.

Windows 3.x

- 1 Install Windows3.1x or Windows for Workgroups3.1x and start it running on your computer.
- 2 Insert the installation CD into your CD-ROM drive.
- 3 Double click **File Manager** and your **CD drive** icon.
- 4 Double click **SCSI\EZSCSI** folder and **Setup.exe**
- 5 Follow the instructions that appear on the screen.

DOS

- 1 Install DOS6.x or above and start it running on your computer.
- 2 Insert the installation CD into your CD-ROM drive.
- 3 Change to your CD ROM drive letter.
- 4 Change to the **SCSI\EZSCSI** folder and run **Install.bat**
- 5 Follow the instructions that appear on the screen.

IV. ADAPTEC EZ-SCSI UTILITY

Troubleshooting Tips

SCSI Device Troubleshooting

Review this checklist if your newly-installed SCSI disk drives, CDROM drives, and other devices do not seem to work properly:

- Be sure that termination is correctly set for all devices on the SCSI bus, as described in your host adapter documentation.
- Be sure there are no hardware conflicts such as devices in your computer trying to use the same interrupts (IRQs) or DMA channels.
- Be sure the cables connecting the external and internal SCSI devices and the host adapter are attached securely. Also be sure the pin-1 orientation is correct for internal cables. See the host adapter documentation for more information.
- Be sure that each SCSI device connected to the host adapter has a unique SCSI ID.
- Be sure CD-ROM drives and other SCSI devices are attached to a power source and are turned ON.

Windows95/WindowsNT Troubleshooting

What is a miniport driver, and how do I make sure that the miniport driver is installed correctly?

Miniport drivers are a new kind of 32bit protect mode device driver used by Windows95 and WindowsNT to control host adapters and other kinds of devices. Windows95 and WindowsNT include a set of miniport drivers for various types of SCSI host adapters. The host adapter miniport driver is automatically installed and configured during Windows95 and WindowsNT installation if your host adapter is already installed. To make sure the driver is installed correctly in systems running Windows95, open the Control Panel, double-click on System, and click the Device Manager tab. Then double-click the SCSI Controllers icon; you should see the model name of the SCSI host adapter(s) installed in your system.

What if there is no SCSI controllers icon under Device Manager, or the model name of the SCSI chipset does not appear under Device Manager?

If the SCSI controllers icon or your host adapter's model name do not appear, open Control Panel and double-click the Add New Hardware icon. Let Windows search for the host adapter by selecting Yes on the second screen of the Add New Hardware Wizard.

If Windows does not detect the host adapter, run the Add New Hardware Wizard again. This time, select No on the second screen of the wizard, then select SCSI controllers on the next screen. Select the name of your host adapter when it appears.

IV. ADAPTEC EZ-SCSI UTILITY

If the name of your SCSI chipset does not appear, you may be able to find its miniport driver on the Windows95 CD-ROM. Follow these steps:

- 1 Place the Windows95 CD-ROM in your CDROM drive and run the Add New Hardware wizard.
- 2 Select No on the second screen, and select SCSI controllers on the next screen.
- 3 Click on the Have Disk button, then click the Browse button.
- 4 Look in the \drivers\storage directory of the CDROM and select the name of your SCSI host adapter if it appears.

What if a yellow exclamation point or a red X appears in Device Manager in front of my host adapter?

This means there is some kind of resource problem. First, see if the names of any host adapters appear that are not actually installed in your computer. If so, select the name and click Remove. If a red X appears in front of your host adapter name, remove all the host adapter references under SCSI Controllers and run Add New Hardware, as described in the previous question/answer. If a yellow exclamation point appears in front of your host adapter name, the resources that the driver uses probably do not match the resources used by the hardware. Double-click the host adapter name, then click on the Resource tab. Deselect the Use automatic settings box and edit the resources (Interrupt Request, Direct Memory Access, etc.) so they match those used by the host adapter. If the problem still remains, there is probably a hardware resource conflict between the host adapter and other hardware in your computer. You can fix this by changing the hardware resource settings. (See your hardware documentation.)

What do I need to do if I want to use another host adapter?

- 1 Open the Control Panel, double-click on System, and click the Device Manager tab.
- 2 Double-click the SCSI Controllers icon, select the name of the old host adapter, and click Remove.
- 3 Turn OFF the computer and physically remove the currently installed host adapter.
- 4 Install the new host adapter according to the instructions in the hardware documentation.
- 5 Turn the computer ON. If the new host adapter supports Plug and Play, Windows will install and configure it automatically. Otherwise, run Add New Hardware to make sure the new driver is loaded.

IV. ADAPTEC EZ-SCSI UTILITY

If I am running under Windows95, do I need lines for the Adaptec real mode ASPI drivers and mscdex in my config.sys and autoexec.bat files?

Usually, you do not need to use these real mode ASPI drivers, because the new Windows miniport drivers support most SCSI host adapters and SCSI devices. However, you need to load the drivers (including mscdex, if you have a CDROM drive) if any of the following is true:

- You are running in MSDOS mode
- You are using a scanner or another SCSI device with config.sys- or autoexec.bat-based drivers, such as HP's sjix.sys
- You have an older model SCSI-1 CDROM drive that Windows95 does not support
- You are using a CD-Recorder drive (however, some newer models of CD-Recorder drives can use the embedded Windows miniport drivers)

To install the Adaptec EZSCSI DOS drivers, click the Start button and select **Restart the computer in MS-DOS mode**. When the DOS prompt appears, follow the Quick Start instructions for DOS.

My CDROM drive doesn't work properly under Windows95.

Some older models of SCSI CDROM drives are not compatible with the embedded Windows95 CDROM driver. You can add support for the CDROM drive by doing the following:

- 1 Click the Start button and select Restart the computer in MS-DOS mode.
- 2 When the DOS prompt appears, follow the Quick Start instructions for DOS.
- 3 When you are finished running Adaptec EZSCSI for DOS, find the file named cdttd.vxd in the windows\system\iosubsys directory and rename it cdttd.sav.

My CDROM drive shows up as more than one icon under My Computer.

The mapping between mscdex, which runs in real mode, and the Windows95 CDROM driver does not match. You can correct this in one of two ways:

- Comment out the line that loads mscdex.exe in the autoexec.bat file.
- Change the /L switch on the line that loads mscdex.exe in the autoexec.bat file so it assigns the CDROM drive the next highest logical drive letter after the hard disk drives.

IV. ADAPTEC EZ-SCSI UTILITY

Information for DOS/Windows 3.1x Users

The following information may be useful if you install Adaptec EZSCSI on a computer running DOS, Windows 3.1x, or Windows for Workgroups 3.1x.

NOTE: The Windows95/WindowsNT Troubleshooting section on page 6 describes a few situations when you may need to use the DOS/Windows3.1x drivers and ASPI managers under Windows95 or WindowsNT.

DOS and Windows3.1x Device Drivers

Device drivers are software programs that enable your computer to communicate with SCSI devices such as hard disk drives, CDROM drives, and scanners. Each kind of device requires a different device driver. Adaptec EZSCSI includes several DOS/Windows3.1x device drivers that are copied to your hard disk during installation. Adaptec EZSCSI adds command lines to your config.sys and autoexec.bat files to load these device drivers if it finds these kinds of devices on your computer.

To learn more about the Adaptec EZSCSI device drivers, including their command line option information, see the online Adaptec EZSCSI Online Reference, a Windows Help application.

DOS and Windows3.1x ASPI Managers

ASPI (Advanced SCSI Programming Interface) managers are software programs that enable the SCSI device drivers, your host adapter, and your SCSI devices to communicate with each other. ASPI managers are written for a specific operating system, such as DOS, and a specific family of Adaptec host adapters.

Adaptec EZSCSI includes several ASPI managers for DOS/Windows3.1x. When you install Adaptec EZSCSI on these operating systems, it detects what kind of host adapter is installed in your computer and automatically configures your system with the correct ASPI manager. To learn more about these ASPI managers, including their command line option information, see the Adaptec EZSCSI Online Reference, a Windows Help application.

IV. ADAPTEC EZ-SCSI UTILITY

DOS Formatting Utilities

Adaptec EZSCSI includes several DOS-based formatting utilities:

Low-level Formatter (scsifmt)

Use the DOS-based scsifmt utility for low-level formatting of SCSI hard disk drives, removable media, Floptical[®] drives, and magneto-optical drives. You can also use it to scan a disk device for surface defects before you store data on it.

Run scsifmt from the DOS prompt, not from the Windows MSDOS prompt. Before you run it, be sure the disk devices you want to format are connected to the host adapter and that they are powered. Then follow these steps:

1. Change to the directory where scsifmt.exe is located (usually c:\scsi), type scsifmt at the DOS prompt, and press Enter.

NOTE: If you are formatting a SCSI disk device that supports more than one LUN (for example, Iomega's Bernoulli dual multdrive) type scsifmt / L at the command line.

2. When the first screen appears, read it and press Enter to continue. (Press F1 at any time to view Help.) Information about your SCSI disk devices appears on the screen.
3. Use the arrow keys to move the highlight bar to a disk device you want to format or verify, then press Enter.
4. When the next screen appears, select either Format or Verify (to verify that the disk is free of surface defects), then press Enter.

WARNING: Back up important data before you format the disk device! A low-level format erases all data from the disk.

5. If you select Format, confirm that you want to format the disk, then wait while the disk device is formatted. This may take a long time if the disk is large.
If you select Verify, you can press Esc at any time to stop the verification process. (This does not damage the disk.) If the utility finds bad blocks on the disk, it displays information about them. You can reassign the bad block(s) to prevent data from being stored there.
6. Repeat steps 3, 4, and 5, as needed, to format or verify other disk devices. When you are finished, press Esc to exit.

IV. ADAPTEC EZ-SCSI UTILITY

Formatter and Partitioner (afdisk)

Use the DOS-based afdisk utility to partition and format SCSI hard disk drives, Floptical drives, and magneto-optical drives. You can also use afdisk to remove DOS and non-DOS partitions from a disk drive and to format removable media in standard hard disk format, OS/2 floppy format, or DOS V (Japanese) format.

NOTE: Use afdisk only if the disk device is not controlled by the host adapter BIOS—that is, if the host adapter does not have a BIOS or if its BIOS is not enabled. If the disk device is controlled by the host adapter BIOS, use the DOS fdisk utility to partition and format the disk device. (See the MSDOS documentation.)

Run afdisk from the DOS prompt only, not from the Windows MSDOS prompt. Before you run it, be sure the disk devices you want to format and partition are connected to the host adapter and that they are powered. Then follow these steps:

1. Change to the directory where afdisk.exe is located (usually c:\scsi), type afdisk at the DOS prompt, and press Enter.

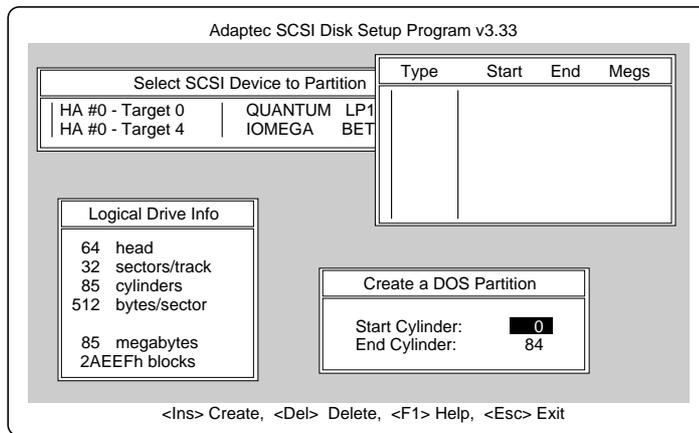
Information about your SCSI disk devices appears on the screen. (The number that appears after Target is the device's SCSI ID.)

2. Use the arrow keys to move the highlight bar to the disk device you want to partition, then press Enter.
 - If the selected disk device is controlled by the host adapter BIOS, you can view information about it but you cannot partition it with afdisk (Use the DOS fdisk and format utilities.)
 - If the selected disk device is unpartitioned, you must partition it before you can format it. To do this, follow the instructions on the screen. (Press F1 to see an explanation of the partitioning options.)

Information about the selected disk device appears in the lower left of the screen. Disks smaller than 1Gigabyte have 64 heads, 32 sectors per track, and cylinders equal to the number of MBytes of available capacity. Disks larger than 1Gigabyte have 255 heads, 63sectors per track, and one cylinder per 8MBytes of available capacity.

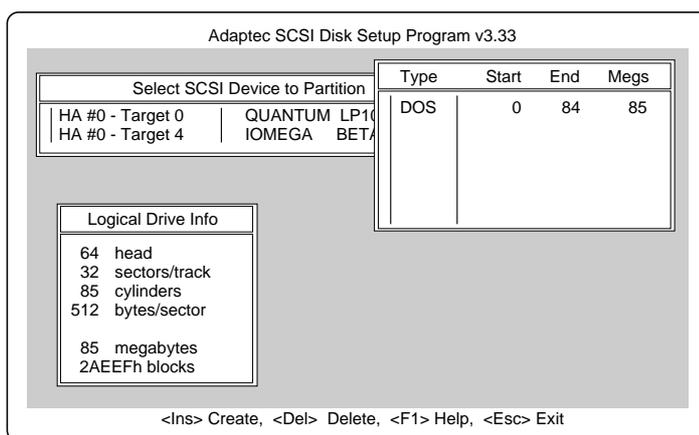
IV. ADAPTEC EZ-SCSI UTILITY

3. To create a new partition on the disk device, press Ins. A screen similar to this appears:



The Create a DOS Partition window suggests that you create one partition on the disk device, equal to its entire capacity. If this is what you want to do, skip to step 5.

4. To change the size of the partition, use the arrow keys to select Start Cylinder and End Cylinder, and type in the numbers you want. Partitions up to 2Gigabytes are supported.
5. When the number of cylinders is what you want, press Esc. When the confirmation prompt appears, select Yes and press Enter to create the partition. To create more partitions on the same disk device, repeat steps 3, 4, and 5. As you create partitions on the disk, they are added to the window at the upper right of the screen, as shown here:



6. Press Esc to return to the Select SCSI Device to Partition window. If you want to partition a different disk device, select the device from the list and repeat the earlier steps.
7. To quit afdisk, press Esc and select Yes to confirm that you want to quit.

ASUS[®] PCI-AS300
SCSI/Audio MediaBus Card

USER'S MANUAL
Creative Labs ViBRA 16C Audio

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VI. Audio Driver Installation

Manual Information

The following three sections contain information for the audio software portion of your product. The first section (pages 1-12) deals with **Audio Driver Installation** for *Windows 95 and DOS & Windows 3.1x*. The second section (70 pages) is the **Audio Software Manual** for *Windows 95*. The third section (86 pages) is the **Audio Software Manual** for *DOS & Windows 3.1x*.

Installation CD

This CD contains a collection of audio drivers and audio software applications for expansion cards with audio. To install the drivers, please follow the installation procedures in the manuals that came with this product. For additional information, go to the respective directories, and view the "README" files.

NOTE: The drivers were originally created for floppy diskettes. Please substitute your CD ROM drive letter (such as D:) and the corresponding directory names in place of any references to "A:" or "B:" floppy drives.

To use the audio under Windows 3.1x, you must install a Configuration Manager and audio drivers. The following is a list of the main directories used in this audio section:

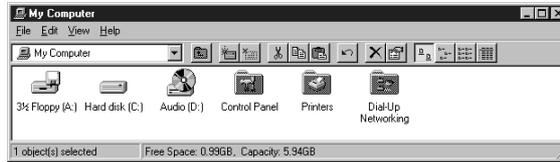
Installation CD Contents

\AUDIO\CTCM	Creative PnP Configuration Manager for DOS/Win3.1x (Run install.exe from DOS)
\AUDIO\WIN31	Audio Drivers & Applications for DOS & Win3.1x (Run install.exe from DOS)
\AUDIO\WIN95	Audio Drivers & Applications for Win95, no CTCM Double click the "SETUP" icon from Win95
\AUDIO\DISKS	Individual installation disks for above drivers
\AUDIO\DISKS\CTCM	Copy to 1.44MB 3.5" floppy disks if necessary)
\AUDIO\DISKS\WIN31\DISK1 & \DISK2	
\AUDIO\DISKS\WIN95\DISK1 & \DISK2	

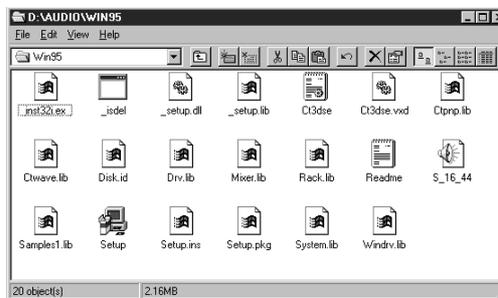
VII. Win95 Audio Driver

Procedures:

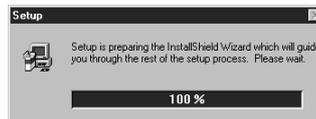
1. Insert the installation CD into the CD-ROM drive.
2. Double click on "My Computer" icon  to get the following group:



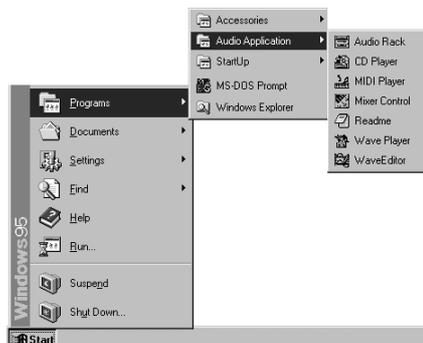
3. Double click on your CD-ROM drive  Audio (D:)
4. Double click on the "Audio" folder.
5. Double click on the "Win95" folder as shown here:



6. Double click on the "Setup" icon  and the setup program will begin running when the following is displayed:



7. Carefully follow the installation wizard displayed and click the "Next" buttons to continue through the installation process.
8. When installation is completed, you can run the audio utilities through the start menu as shown below:



VIII. Win3.1x Audio Driver

This section is for DOS and Windows 3.1x that requires manual installations of audio drivers.

Configuration Manager

In DOS and Windows 3.1x environments a program called the Configuration Manager must be installed in order for the Configuration Manager to do resource allocations for all ISA Plug and Play cards. The audio portion of this card uses 16-bit ISA specifications.

Creative PnP Configuration Manager (CTCM)

If you try installing the audio drivers first, the audio install program will not be able to find the PLUGPLAY\DRIVERS\DOS\ESCD.RF database file and give you the following message: "Configuration Manager not found. Please install the Configuration Manager before installing your Audio Software." "Press a key to continue." Pressing a key will send you back to the DOS prompt.

Run the Configuration Manager install under DOS prompt by typing:

```
D:          <ENTER>
CD AUDIO   <ENTER>
CD CTCM    <ENTER>
INSTALL    <ENTER>
```

The first screen shows:

The following path will be used for installing Configuration Manager programs.

Proceed using the settings shown

```
Configuration Manager Path : C:\CTCM
Microsoft Windows 3.1 Path : C:\WINDOWS
System Bootup Drive       : C:\
```

Press <ENTER> to continue, <F1> for help, or <F3> to exit.

VIII. Win3.1x Audio Driver

If you need to change the paths shown, you may push the down arrow key and press <ENTER> when highlighted. If your Windows directory is not detected, you need to change the path shown to your Windows directory. If you wish to change the Windows path some other time, you will have to run INSTALL from your Configuration Manager installation CD again.

You will get the following message after you press <ENTER>:

Welcome to the Configuration Manager installation program. This program installs Configuration Manager files onto your computer's hard disk. Before installing, please read the README file for the latest information. If you need more information before deciding on a certain option, you can always get help by pressing F1.

Press <ENTER> to continue, <F1> for help, <F2> for README, or <F3> to exit.

The following lines will be added to your system files:

C:\AUTOEXEC.BAT file

```
SET CTCM=C:\CTCM  
C:\CTCM\CTCU /S /W=C:\WINDOWS
```

C:\CONFIG.SYS file

```
DEVICE=C:\CTCM\CTCM.EXE
```

Press <ENTER> to continue, <F1> for help, or <F3> to exit.

A message will appear on the next screen:

Software installation completed.

The following files were modified and its original saved with B~K extension.

```
C:\CONFIG.SYS  
C:\AUTOEXEC.BAT
```

You must reboot in order for the newly edited CONFIG.SYS to be initiated. You may choose to exit to DOS by pressing <ENTER> but be sure to reboot on your own. A message "Please remember to REBOOT your system" will appear when exiting. Otherwise, press <F10> to automatically reboot your system.

VIII. Win3.1x Audio Driver

Audio Drivers

Now that your Configuration Manager is installed, you may now install the audio drivers by the following command at the DOS prompt:

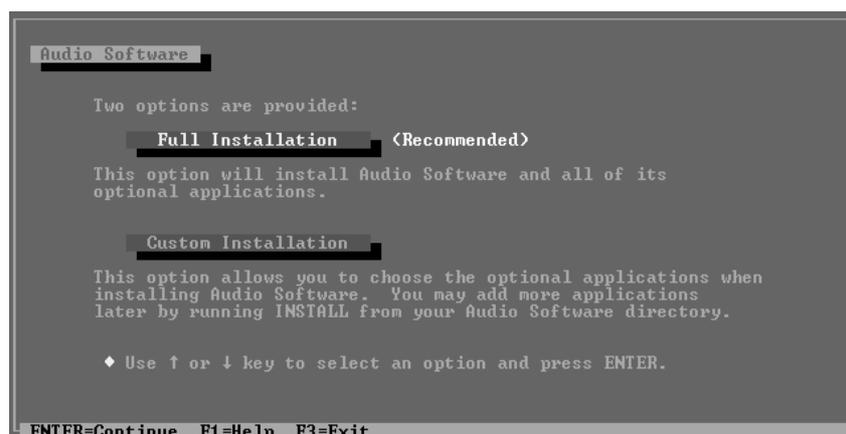
```
D:          <ENTER>
CD AUDIO   <ENTER>
CD WIN31   <ENTER>
INSTALL    <ENTER>
```

The following Audio Software Installation Screen will appear:



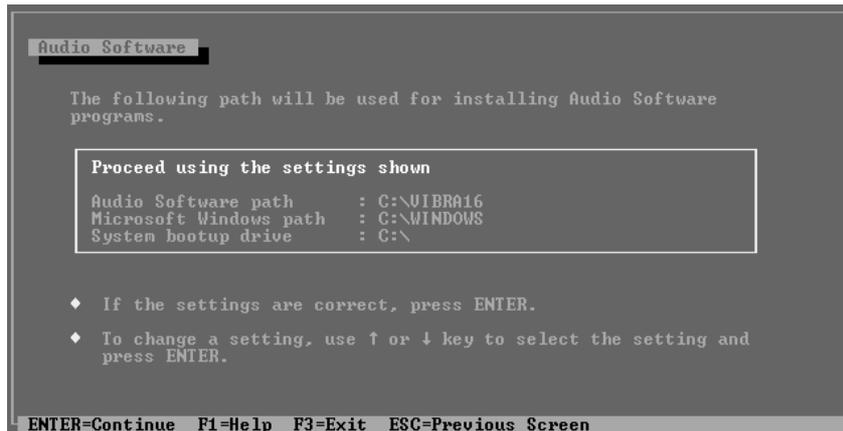
Win3.1x Audio Driver
(Audio Installation)

Follow the instructions and make your choice to learn more about INSTALL <F1>, view the README <F2>, quit <F3>, or install Configuration Manager <ENTER>.



VIII. Win3.1x Audio Driver

You may choose "Full Installation" to install all components or "Custom Installation" to toggle DOS: (1) Audio Samples (2) Readme and Common Q&A Files and WINDOWS: (1) WaveEditor (2) QuickCD. You can select Custom Installation if you are curious about its options and then go back to the previous screen by pressing <ESC>. Pressing <ENTER> at the above screen will show the installation paths. You may change the paths or press <ENTER> again if the paths are correct. Press <ENTER> to continue so that changes can be made to you system files.



You will be prompted that an addition will be made in your C:\AUTOEXEC.BAT and C:\CONFIG.SYS files. The typical PC will have these settings added to the system files:

C:\AUTOEXEC.BAT

```
SET BLASTER=A220 I5 D1 H5 P330 T6
SET SOUND=C:\VIBRA16
SET MIDI=SYNTH:1 MAP:E
C:\VIBRA16\DIAGNOSE /S /W=C:\WINDOWS
C:\VIBRA16\MIXERSET /P /Q
```

C:\CONFIG.SYS

```
FILES=40 (If less than 40 or does not exist)
```

If you wish to use the "Play" and "Record" utility located in \VIBRA16\ directory in DOS mode, you must also add the following two lines through "Custom Installation."

```
DEVICE=C:\VIBRA16\DRV\VIBRA16.SYS /UNIT=0 /BLASTER=A:220 I:5 D:1 H:5
DEVICE=C:\VIBRA16\DRV\CTMMSYS.SYS
```

VIII. Win3.1x Audio Driver

```
Audio Software

The following lines will be added to your system files:

C:\AUTOEXEC.BAT file:
▶ SET BLASTER=a220 I5 D1 H5 P330 T6
▶ SET SOUND=C:\UIBRA16
▶ SET MIDI=SYNTH:1 MAP:E
▶ C:\UIBRA16\DIAGNOSE /S /W=C:\WINDOWS
▶ C:\UIBRA16\MIXERSET /P /Q

C:\CONFIG.SYS file:
▶ DEVICE=C:\UIBRA16\DRU\UIBRA16.SYS /UNIT=0 /BLASTER=A:220 I:5 D:1 H:5
▶ DEVICE=C:\UIBRA16\DRU\CTMMSYS.SYS
▶ FILES=40 <If it is less than 40 or does not exists>

♦ To Continue, press ENTER.

ENTER=Continue F1=Help F3=Exit
```

Certain older audio files may already exist in your Windows directory. If so, simply press <ENTER> to "Backup the original files" as shown here:

```
Audio Software

Backup Replace file: C:\WINDOWS\SYSTEM\MIDIMAP.CFG
34522 31-DEC-93 03:11:0
Skip With file: C:\UIBRA16\WINDRU\MIDIMAP.CFG
42250 19-JAN-93 01:00:0
Proceed

Note: If "Backup" is selected, the backup file will be
C:\WINDOWS\SYSTEM\MIDIMAP.C~G

Copying Audio Software drivers to your Windows directory
```

```
Audio Software

Backup Replace file: C:\WINDOWS\SYSTEM\CTL3D.DLL
14208 19-NOV-93 00:00:0
Skip With file: C:\UIBRA16\WINDRU\CTL3D.DLL
21008 16-NOV-93 00:00:0
Proceed

Note: If "Backup" is selected, the backup file will be
C:\WINDOWS\SYSTEM\CTL3D.D~L

Copying Audio Software drivers to your Windows directory
```

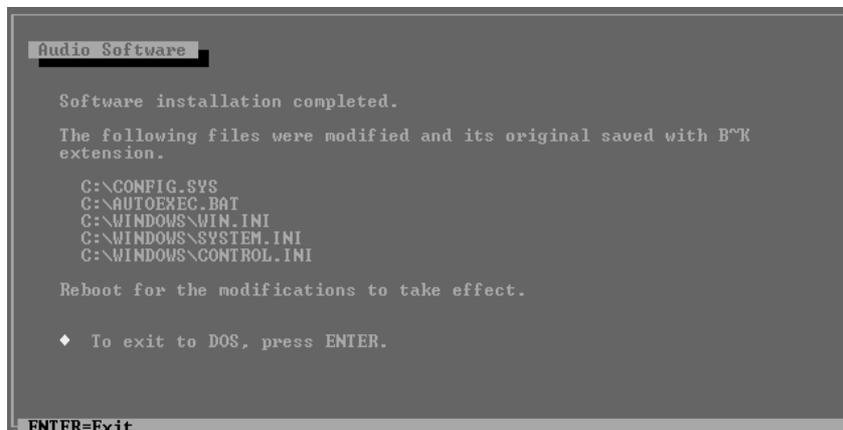
Win3.1x Audio Driver
(Audio Installation)

VIII. Win3.1x Audio Driver

The following files will then be saved with a .B~K extension in case you need to reference your original system file settings:

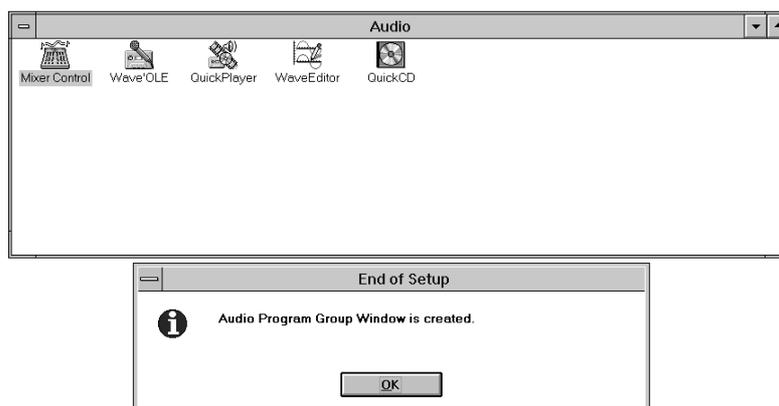
```
C:\CONFIG.SYS
C:\AUTOEXEC.BAT
C:\WINDOWS\WIN.INI
C:\WINDOWS\SYSTEM.INI
C:\WINDOWS\CONTROL.INI
```

You must reboot in order for the newly edited CONFIG.SYS to be initiated. You may exit to DOS by pressing <ENTER> and edit your CONFIG.SYS file and then reboot on your own. Otherwise, press <F10> to automatically reboot your system.



Win3.1x Audio Driver
(Audio Installation)

After your system is rebooted, enter Windows to see that the Audio Software is correctly installed. You should here a musical chime as you enter Windows 3.1x and see the following on your screen:



After this message above, your installation for Windows 3.1x is complete. From here on, you may refer to Section II and Section III for Audio Software usage.

VIII. Win3.1x Audio Driver

Environment Variables

There are three environment variables used to signify information of our audio hardware : SOUND, BLASTER and MIDI. These variables will be setup by SETPNP.EXE added in the AUTOEXEC.BAT during your audio software installation.

SOUND Environment variable

The SOUND environment variable specifies the directory location of audio drivers and software. You can type "SET" at the DOS prompt and see the following line for the setting of the SOUND environment variable:

```
SOUND=<path>
```

BLASTER Environment Variable

The BLASTER environment variable specifies the base I/O address, interrupt number and DMA channel hardware configuration of the audio hardware. You can type "SET" at the DOS prompt and see the following line for the setting of the BLASTER environment variable:

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

Where:

- A Specifies the audio hardware base I/O port
- I Specifies the interrupt request line
- D Specifies the Low DMA channel
- H Specifies the High DMA channel
- P Specifies the MPU-401 base I/O port
- T Specifies the card type

VIII. Win3.1x Audio Driver

MIDI Environment Variable

The MIDI environment variable specifies the MIDI file format used and where the MIDI data is sent to. The MIDI data can be sent to FM chips or audio hardware MIDI port. Generally, there are three MIDI file formats available in the market, General MIDI, Extended MIDI and Basic MIDI. You can type “SET” at the DOS prompt and see the following line for the setting of the BLASTER environment variable:

MIDI=SYNTH:<1/2> MAP:<G/E/B>

Where:

- SYNTH: 1 Specifies internal synthesizer (default)
 2 Specifies audio hardware MIDI port
- MAP: G Specifies General MIDI file format
 E Specifies Extended MIDI file format (default)
 B Specifies Basic MIDI file format

Maximum Recording Rates for the Audio Hardware

The sampling rate used for recording is largely influenced by your computer’s main processor. To obtain 16-bit digital audio using Windows, the following maximum recording rates are suggested.

SYSTEM	RECORDING RATE
386 and above	Stereo - 44KHz
	Mono - 44KHz
386 SX and below	Stereo - 22KHz
	Mono - 44KHz

To obtain optimal performance, try configuring the audio hardware to use a high DMA (Direct Memory Access) channel under Windows. Refer to your audio hardware Getting Started Manual for more information on setting up the sound card to use a high DMA channel.