

Maestro-2 PCI SOUND CARD

Configuration and Hardware USER MANUAL

December 1998

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1. DESCRIPTION

“Maestro-2 D20”, “Maestro-2 H30”, and “Maestro-2 J90A/B” are new audio adapters that provide the next generation of PCI audio performance to the PC market. The adapters not only meet the new demands of advanced PC audio applications but also enable the integration of a complete multimedia subsystem on a single adapter. The adapter functionality and interfaces are compliant with all major industry standards, including SoundBlaster Compatible, PC'97, Windows_ 95 Direct Sound, Windows_ Sound System and PCI 2.1 bus specification.

1.1. Features

- ⇒ 500-MIPS-equivalent processor performance to accelerate multi-stream PC audio.
- ⇒ HRTF 3D positional audio under DirectX. 5.0
- ⇒ Proprietary Wave Cache technology
- ⇒ AC-3 speaker virtualization.
- ⇒ AC '97 CODEC interface
- ⇒ Up to 20-bit ADC/DAC audio resolution.
- ⇒ Distributed &PC/PCI DMA, Compaq/Intel serial IRQ support and transparent DMA.
- ⇒ 3.3V power supply; 5V-input tolerant.
- ⇒ Supports up to 12 GPIO pins.

System Interface

- Complies with Microsoft ACPI 1.0 and PPMI 1.0 (D0~D3).

Hardware interface

- MPU-401 interface with FIFO.
- High performance Game Port.
- General-purpose I/O Port.
- Communication interface.
- Programmable Audio CODEC Interface.
 - AC '97 CODEC interface.*
 - Other 16 to 20-bit CODECs.*
 - Secondary CODEC interface.*

Wavetable Synthesis

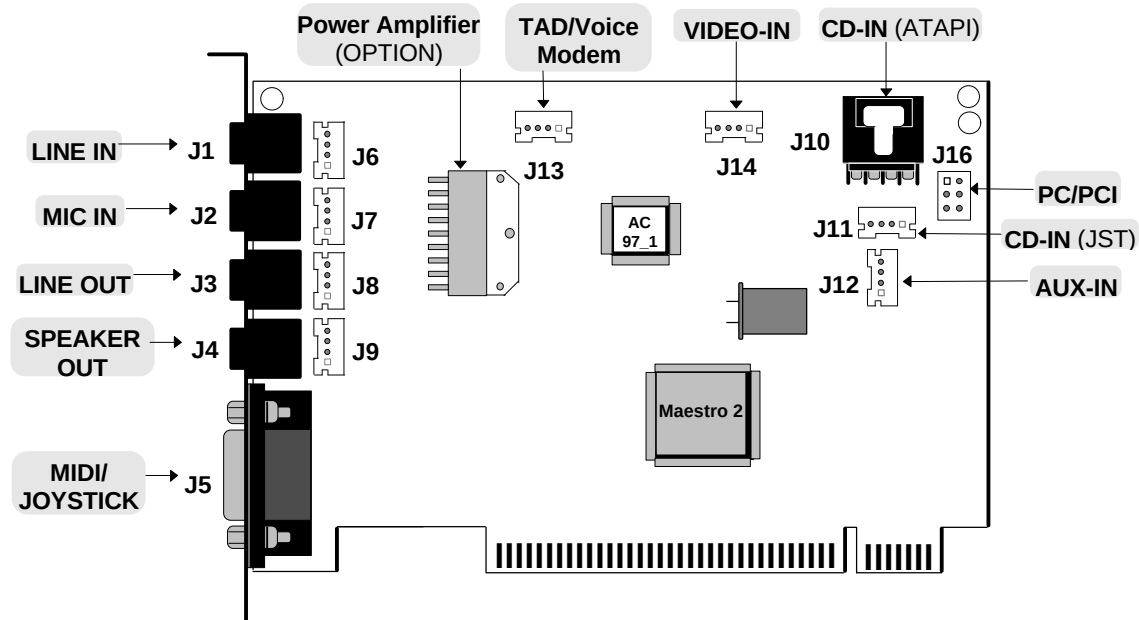
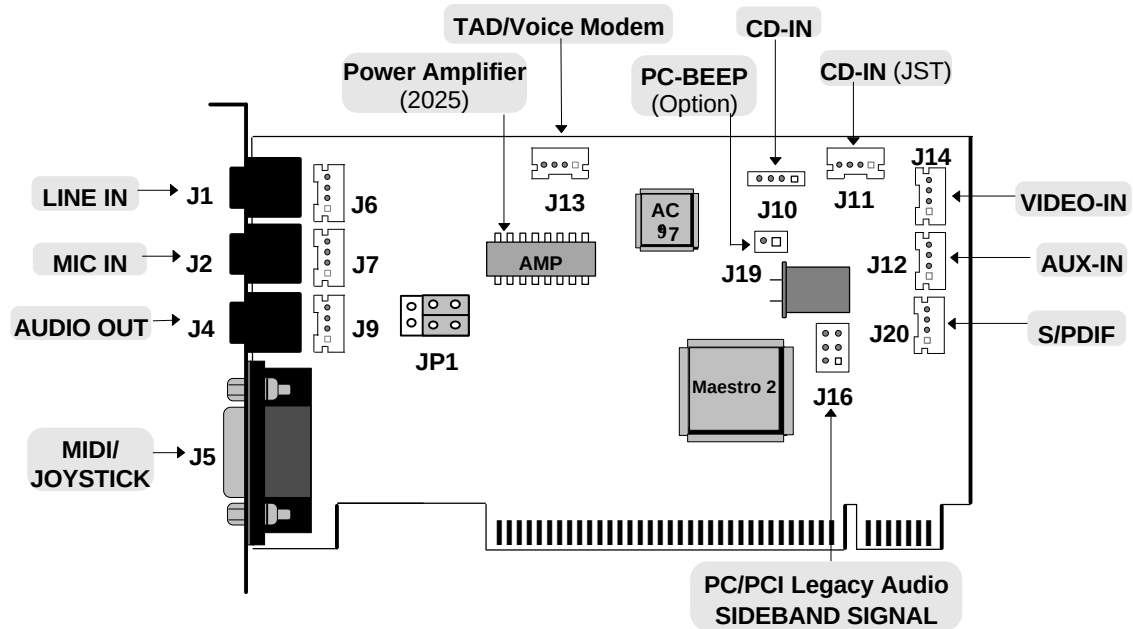
- Programmable effects including Reverb, Chorus, Flange, Echo, Treble, Bass and 3D spatial enhancement.
- 64-voice wavetable synthesis.

Built-in 2-channel Power Amplifier (optional)

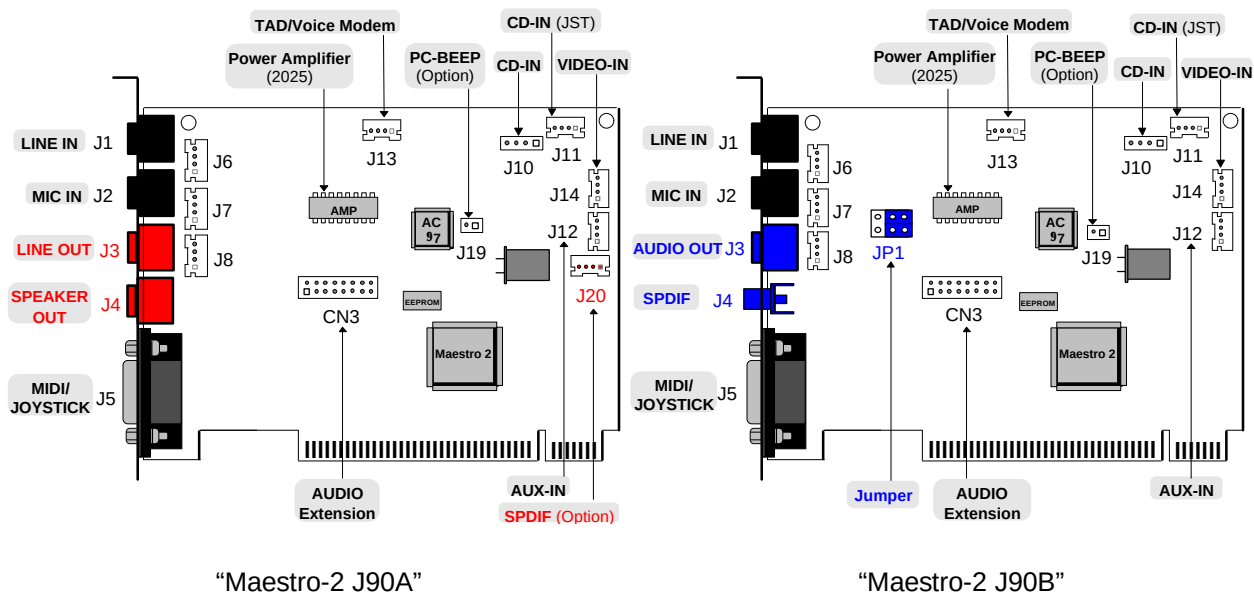
- 2.5 Watt per channel output, (TEA 2025).
- 6 Watt per channel output, (TDA 1517).

Compatibility

- Fully Sound Blaster_ and Sound BlasterPro_ compatible.
- Windows_ Sound System Hardware register compatible.
- Windows_ 95, Direct Sound, Microsoft Active X, AdLib compatible.

1.2. Card Figure for “Maestro-2 D20”**1.3. Card Figure for “Maestro-2 H30”**

1.4. Card Figure for “Maestro-2 J90A/B”



1.5. Connectors for “Maestro-2 D20”

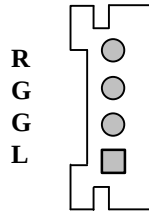
“Maestro-2 D20” includes up to ten internal connectors, four external Jack Ports, and one external MIDI/Joystick connector.

1.5.1. External Connectors:

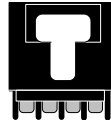
- J1: f 3.5mm Phone Jack for **LINE IN**
- J2: f 3.5mm Phone Jack for **MIC IN**
- J3: f 3.5mm Phone Jack for **LINE OUT**
- J4: f 3.5mm Phone Jack for **SPEAKER OUT**
- J5: Connector for **MIDI/JOYSTICK**

1.5.2. Internal Connectors:

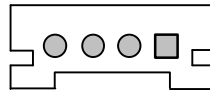
- J6: Internal Connector for **LINE IN**
- J7: Internal Connector for **MIC IN**
- J8: Internal Connector for **LINE OUT**
- J9: Internal Connector for **SPEAKER OUT**
- J10: Connector for **CD-AUDIO IN (ATAPI)**
- J11: Connector for **CD-AUDIO IN (JST)**
- J12: Connector for **AUX**
- J13: Connector for **TAD/VOICE MODEM**
- J14: Connector for **VIDEO-IN**
- J16: Connector for **PC/PCI Legacy Audio SIDEBAND SIGNAL**

1.5.3. Audio Connectors:**J6/J7/J8/J9:**

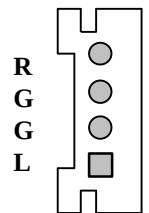
L: LEFT CHANNEL SIGNAL
 G: GROUND
 R: RIGHT CHANNEL SIGNAL

J10: CD-Audio-In
ATAPI

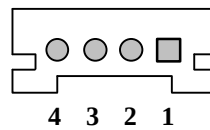
L: LEFT CHANNEL SIGNAL
 G: GROUND
 R: RIGHT CHANNEL SIGNAL

J11: CD-Audio-In
JST

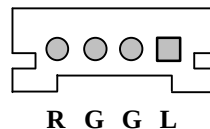
L: LEFT CHANNEL SIGNAL
 G: GROUND
 R: RIGHT CHANNEL SIGNAL

J12: AUX-In

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

**J13: TAD/
Voice Modem**

1 PHONE
 2 GROUND
 3 GROUND
 4 MONO OUT

J14: VIDEO-IN

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

1.6. Connectors for “Maestro-2 H30”

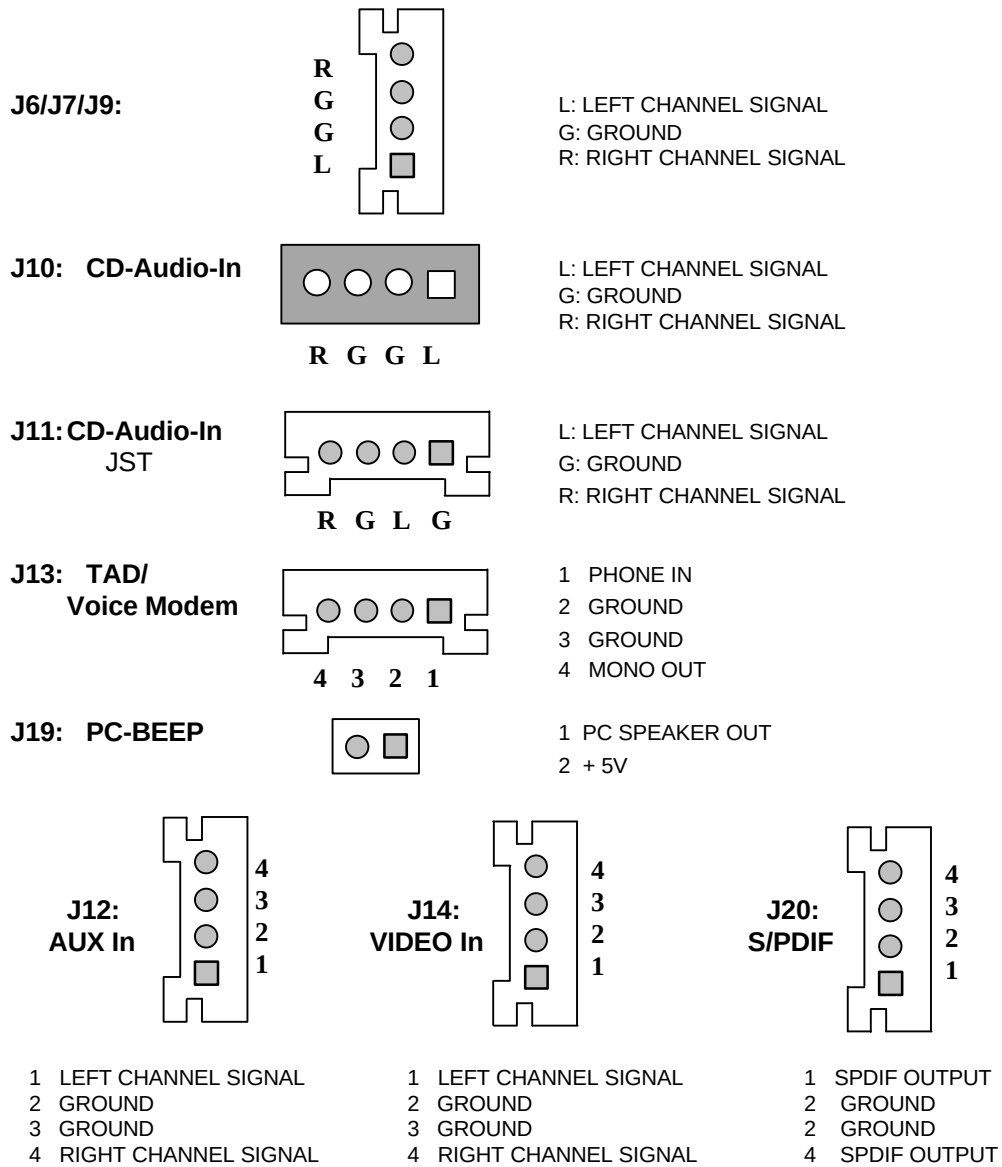
“Maestro-2 H30” includes up to twelve internal connectors, three external Jack Ports, and one external MIDI/ Joystick connector.

1.6.1. External Connectors:

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

1.6.2. Internal Connectors:

J6: Internal Connector for **LINE IN**
J7: Internal Connector for **MIC IN**
J9: Internal Connector for **AUDIO OUT**
J10: Connector for **CD-AUDIO IN**
J11: Connector for **CD-AUDIO IN (JST)**
J12: Connector for **AUX IN**
J13: Connector for **TAD/VOICE MODEM**
J14: Connector for **VIDEO IN**
J16: Connector for **PC/PCI Legacy Audio SIDEBAND SIGNAL**
(Option)
J19: Connector for **PC-BEEP** (Option)
J20: Connector for **S/PDIF** (Option)
JP1: Jumper for switching between **SPEAKER OUT/LINE OUT**

1.6.3. Audio Connectors:

1.6.4. Audio Output Jumper Settings for JP1:

Audio	Setting
SPEAKER OUT with Power Amplifier (Default)	
LINE OUT without Power Amplifier	

1.7. Connectors for “Maestro-2 J90A” and “Maestro-2 J90B”

“Maestro-2 J90A” includes up to eleven internal connectors, and five external Jack Ports.

“Maestro-2 J90B” includes up to ten internal connectors, and four external Jack Ports and one RCA Jack.

1.7.1. External Connectors:

J1:f 3.5mm Phone Jack for **LINE IN**

J2:f 3.5mm Phone Jack for **MIC IN**

J3:.....f 3.5mm Phone Jack for **LINE OUT (for Maestro-2 J90A only)**

f 3.5mm Phone Jack for **AUDIO OUT** (for Maestro-2 J90B only)

J4:f 3.5mm Phone Jack for **SPEAKER OUT (for Maestro-2 J90A only)**

f 3.5mm Phone Jack for **SPDIF OUT** (for Maestro-2 J90B only)

J5:Connector for **MIDI/JOYSTICK**

1.7.2. Internal Connectors:

J6:Internal Connector for **LINE IN** (optional)

J7:Internal Connector for **MIC IN** (optional)

J8:Internal Connector for **LINE OUT** (optional/ for Maestro-2 J90A only)

Internal Connector for **AUDIO OUT** (optional/for Maestro-2 J90B only)

J10:Connector for **CD-AUDIO IN**

J11:.....Connector for **CD-AUDIO IN** (JST)

J12: Connector for **AUX IN**

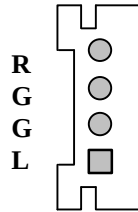
J13:.....Connector for **TAD/VOICE MODEM**

J14:.....Connector for **VIDEO IN**

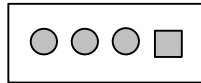
J20:.....Connector for **S/PDIF** (optional/ for Maestro-2 J90A only)

CN3.....Extension Connector for **6-Channel AUDIO OUT** (optional)

JP1:.....Jumper for switching between **LINE OUT/SPEAKER OUT**
(for Maestro-2 J90B only)

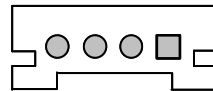
1.7.3. Audio Connectors:**J6/J7/J8:**
(optional)

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

J10: CD-Audio-In

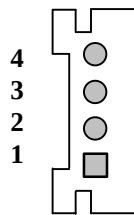
R G G L

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

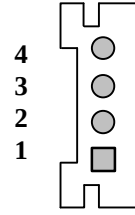
J11: CD-Audio-In
JST

R G L G

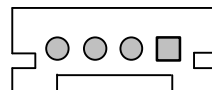
L: LEFT CHANNEL SIGNAL
 G: GROUND
 R: RIGHT CHANNEL SIGNAL

**J12:**
AUX In

1 LEFT CHANNEL SIGNAL
 2 GROUND
 3 GROUND
 4 RIGHT CHANNEL SIGNAL

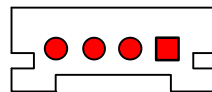
**J14:**
VIDEO In

1 LEFT CHANNEL SIGNAL
 2 GROUND
 3 GROUND
 4 RIGHT CHANNEL SIGNAL

**J13: TAD/
Voice Modem**

4 3 2 1

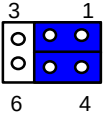
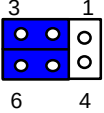
1 PHONE IN
 2 GROUND
 3 GROUND
 4 MONO OUT

J20: SPDIF-Out

4 3 2 1

1 SPDIF OUTPUT
 2 GROUND
 3 GROUND
 4 SPDIF OUTPUT

1.7.4. Audio Output Jumper Settings for “Maestro-2 J90B”:

Audio	Setting
SPEAKER OUT with Power Amplifier (Default)	
LINE OUT 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 **J3** or **J4** Jack on the back of the Sound Card.
- Step 6.** If you have a microphone, plug the respective cable into the **J2** Jack on the back of the Sound Card.
- Step 7.** Please plug the cable for your MIDI/Joystick device into the **J5** Jack on the back of the PCI Sound Card.
- Step 8.** 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 9.** 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 CD-title which comes with this package.

This CD-title includes the necessary device driver and Application Software Bundles ("Win95Rac") for Microsoft_ Windows_ 95 operating system.

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:\Maestro2\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. Installing the Device Driver for the first time under Windows_ 95 OSR2

To install the device driver under Microsoft_ Windows_ 95 OSR2 system, please follow the steps below:

- 1) After you have installed the PCI Sound Card, restart your Microsoft_ Windows_ 95 OSR2 operating system.
- 2) An "Update Device Driver Wizard" dialog box appears, showing you that an PCI Multimedia Audio Device has been detected by the system. Just click on the "Next" push button to continue the installation.
- 3) The next "Update Device Driver Wizard" dialog box informs you that the system cannot find the device driver. Please insert your installation CD-title into your CD-ROM drive and click on the "Other Location" push button.
- 4) The "Select Other Location" dialog box will ask you to specify the directory where the drivers are located. Please type **D:\Maestro2\Win95** in the command line and click on the OK push button, assuming your CD-ROM drive is D.
- 5) An "Update Device Driver Wizard" dialog box will inform you that the system has found the device driver. Please click on the "Finish" push button to continue.
- 6) An "Insert Disk" dialog box will ask you to insert the CD-title into your CD-ROM drive, please click on the OK push button.
- 7) The "Copying Files..." dialog box will appear. You are asked to specify the directory. Please type **"D:\Maestro2\Win95"** and click on the OK push button.
- 8) An "Insert Disk" dialog box may ask you to insert your Windows_ 95 CD-ROM into your CD-ROM drive. Just do it and click on OK.

- 9) A "Copying File" dialog box may ask you to locate the Windows directory, please locate it and click on OK.
- 10) You will see that Windows_ 95 is extracting the files from your Windows_ 95 CD-ROM. The Sound System driver and Game Port driver should be installed onto your Windows_ 95 OSR2 operating system.
- 11) Follow the on-screen instructions and you should be able to install the device driver easily.

3.4. Application Installation Under Windows_ 95

To install the Software application under Microsoft_ Windows_ 95 operating system, 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 installation CD-title into your CD-ROM drive. Assuming your CD-ROM drive is D, type **D:\Maestro2\Win95Rac\SETUP.EXE** in the command line of the RUN dialog box.
- 4) Click on the OK push button and follow the on-screen instructions. The Software application will be installed onto your system.

3.5. How to Play Games Under DOS Mode

If you want to play games under the DOS mode, please specify your drive letter first.

Assuming drive C is used, add the following line to your CONFIG.SYS file:

DEVICE=C:\AECU.SYS

After rebooting your system, please type the file name "MAESTRO.COM" under the root directory. For example: **"C:\MAESTRO.COM"**.

Follow the on-screen instructions to continue the program.

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Version 1.0