PAM-0050S

High Performance

Pentium PCI Mainboard

User's Guide

Edition 1.13

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WARNING

For the system to operate normally, please make sure JP0 of the mainboard is set as below. Refer to Fig. 4 in this manual for the location JP0.

If JP0 is opened or shorted to 2-3, no CMOS data can be retained.

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CHAPTER 1

INTRODUCTION

The motherboard is designed to support the latest PCI (Peripheral Component Interconnect) local bus standard. It is developed around the pentium microprocessor (P54C) with 64-bit access to data transfer, and integrated with the I/O chip (W83877F), Sound System (ESS1868), VGA Controller (SiS 5596), and PCI IDE Master/Slave Controller (SiS 5513) to form a high performance and cost-effective computer system.

1.1 GENERAL SPECIFICATION

Processor

?? Intel Pentium P54C series, P55C series.
?? Cyrix 6x86, Cyrix 6x86L; AMD-K5 and AMD-K6 series 64-bit microprocessor.
?? The mainboard can run with following speeds:
75, 90, 100, 110, 120, 133, 150, 166, 200 and 233 MHz

Chipset

?? SiS 5596 PCI, Memory and VGA Controller
?? SiS 5513 PCI System I/O
?? Winbond W83877F Super I/O Controller
?? ESS ES1868 Audio-Drive Sound Controller

Cache Size

?? Built in 256KB or 512KB Sychronized Pipelined Burst Mode SRAM to achieve the high Pentium system performance.

2

Main Memory

?? Mainboard can decode the DRAM space up to 512MB, possible memory configurations are from combination of 256K*36 to 16M*36 double side SIMM module (32-bit non-parity 72-pin SIMM module also available).
?? Support both Fast Page Mode and Extended Data Output (EDO) Mode DRAM Modules.
?? Hidden DRAM Refresh for higher system performance.

Graphics Controller

?? Built-in an enhanced 64-bit BITBLT graphics engine with VGA feature connector on board.
?? PCI 2.1 compliance, and PCI multimedia design Rev 1.0 support
?? Support DCI Drivers and Direct Draw Drivers.

Multi I/O

?? On board Multi-I/O supports two serial, one parallel ports and floppy drive controller.
?? Serial ports are 16550 Fast UART compatible.
?? Parallel port has EPP and ECP capabilities.
?? External PS/2 Mouse Cable is provided.
?? Optional PS/2 keyboard and PS/2 mouse connector is provided.
?? Optional IrDA or Fast IR is provided.

PCI IDE

?? On board supports PCI Master IDE Controller, two connectors support up to four IDE devices such as HDD, CD ROM drive and Tape Back-up drives, etc.
?? PCI Master IDE controller supports PIO Mode 3 and 4 devices, I/O data transfer rate can be up to 17Mb/s.

Sound Controller

?? Compatible with all major PC sound standards, including Sound Blaster? Pro, MPU-401 and Windows Sound System? .
?? Plug-and-Play support for Audio, Joystick, FM Controller, MPU-401.
?? Wave Audio support sample rates from 4KHz to 44KHz.
?? Full-duplex monophonic mode, half-duplex stereo mode.
?? Optional 3D stereo sound effect supported (for GOI-600D and GOI-600DW).
?? Optional wavetable support (for GOI-600DW).

System BIOS

?? Award/AMI BIOS (128KB Flash EPROM).

Slots

?? Four PCI slots
?? Three ISA slots

Board

?? 4 Layers

Form Factor

?? 220mm (W) x 270mm (L)

1.2 MAINBOARD COMPONENTS

This section gives a brief description of key components on the mainboard. Please refer to Fig. 1a and Fig. 1b for components location.

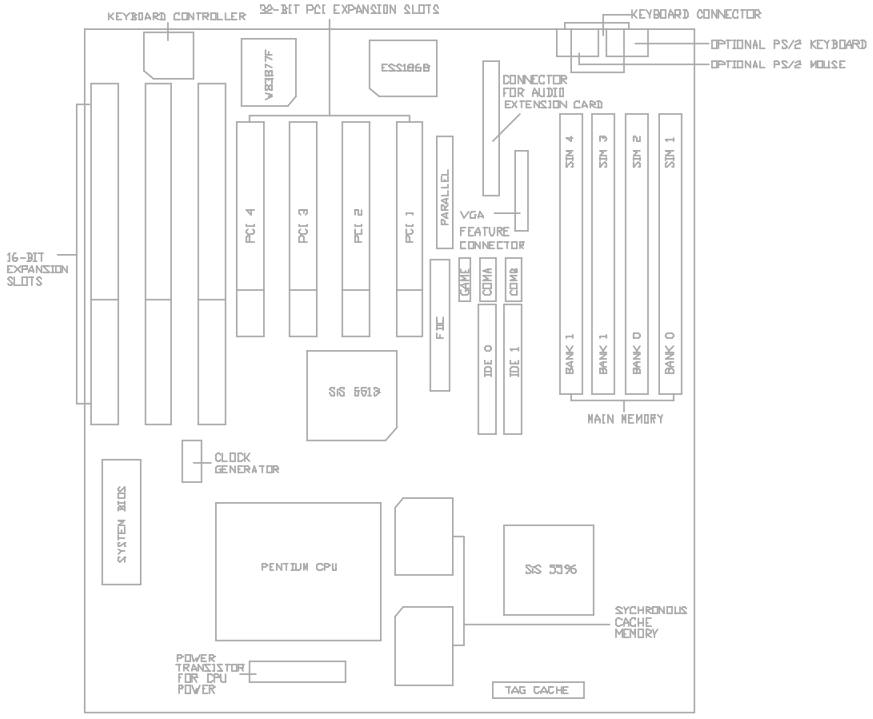


Fig. 1a Key Components of the Mainboard

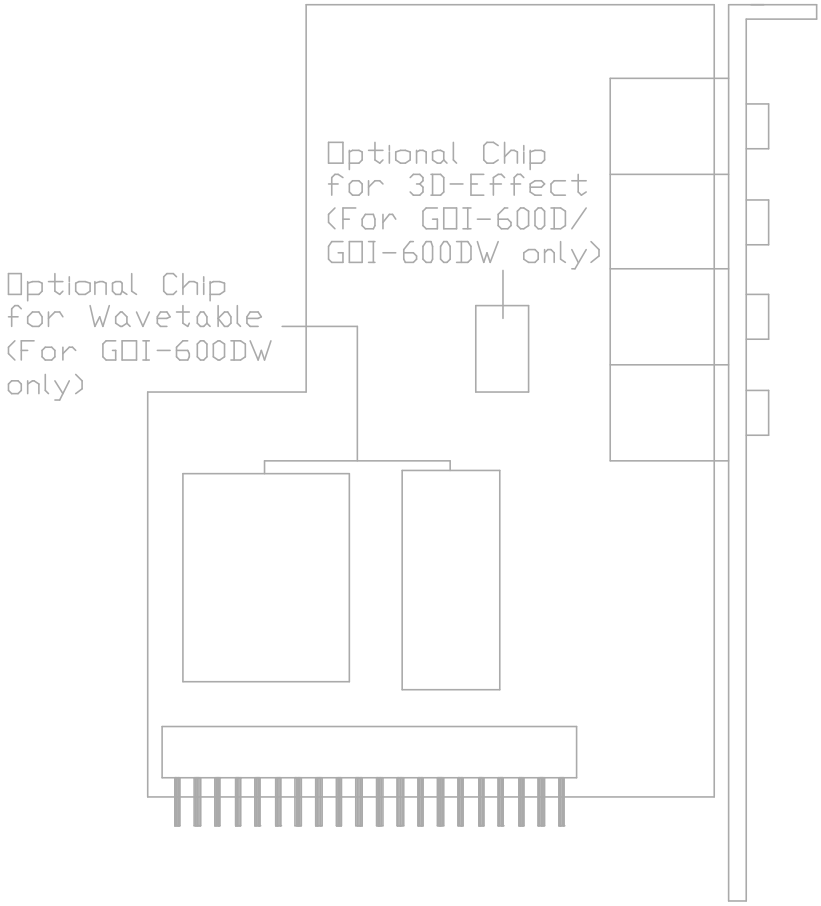


Fig. 1b Key Components of the Audio Extension Card (Optional)

CHAPTER 2 MEMORY CONFIGURATION

2.1 SYSTEM MEMORY

The mainboard lets user add system memory via SIMM sockets on the mainboard. On-board memory is located in two banks: Bank 0 - SIM1 & SIM2, and Bank 1 - SIM3 & SIM4.

Both single sided and double sided DRAM modules are supported. The mainboard can edcode the DRAM space from 8MB up to 512MB.

Bank 0 (SIM1/SIM2)	**Bank 1 (SIM3/SIM4)**
Single	None
None	Single
Single	Single
Single	Double
Double	Single
Double	None
None	Double
Double	Double

Table 1: Memory Configuration

Note: ***Single means single side SIMM.***
Double means double side SIMM.
The type of SIM1/SIM2 must be same.
The type of SIM3/SIM4 must be same.

Both 36 bits and 32 bits (non-parity) SIMM are supported, and user can install either 4/8/16/32/64/128MB SIMM (72-pin) in each SIMM socket. SIMM speed required for best performance depends on the CPU speed, which requires 70ns SIMM.

2.2 CACHE MEMORY CONFIGURATION

256KB or 512KB secondary cache system is built in with Pipeline Burst SRAM:

Cache Tag RAM Location: U7
Size of the Tag RAM: 16Kx8 or 32Kx8
Synchronous Pipeline Burst SRAM Location: U32, U33

Cache Size	Tag RAM (U7)	Data RAM U32, U33
256K	16Kx8 or 32Kx8	32Kx32
512K		64Kx32

Table 2: Secondary Cache Configuration

CHAPTER 3 JUMPER SETTINGS AND CONNECTORS

3.1 CPU TYPE

3.1.1 INTEL PENTIUM CPU

The pentium processors have different operation voltage. In order to using the CPU Voltage correctly, the following is the marking for identify the CPU type.

Fig. 2a CPU Description (Bottom Side)

Description :

X = Voltage Specification (S or V)
S = Standard Voltage (3.4V)
V = VRE 3.4 - 3.6V (3.5V)

Y = Timing Specification (S or M)

S = Standard EDS timings
M = Min Valid Delay Spec.

Z = Dual Processing Support (S or U)
S = Support DP/MP/UP
U = Not tested to support DP

3.1.2 INTEL PENTIUM w/ MMX? TECH (P55C) CPU

The Intel Pentium w/ MMX? Tech (P55C) CPU is offered with dual voltage supply - 2.8V for core and 3.3V (I/O) interface. The following is the marking for identify the CPU type. (The following diagram is provided as an example only. It does not necessarily indicate a valid product marking.)

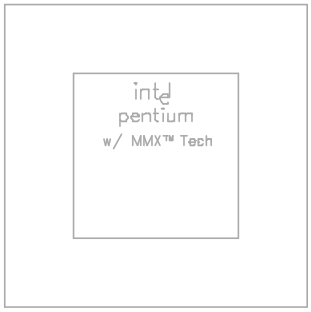


Fig. 2b CPU Description (Top Side)

	I/O Voltage	Core Voltage
Intel Pentium w/ MMX? Tech (P55C)	3.3V	2.8V

3.1.3 AMD-K6 CPU

The AMD-K6 CPU family require dual voltage power for operation. The AMD-K6-PR166 and AMD-K6-PR200 require a voltage of 2.9V for the core and 3.3V for the I/O. The AMD-K6-PR233 require a voltage of 3.2V for the core and 3.3V for the I/O. (The following diagram is provided as an example only. It does not necessarily indicate a valid product marking.)

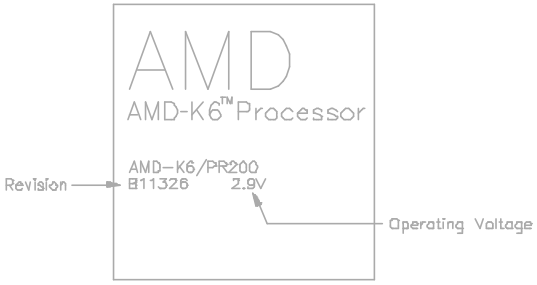


Fig. 2c CPU Description
(Top Side)

Operating Voltage	I/O Voltage	Core Voltage
2.9V	3.3V	2.9V
3.2V	3.3V	3.2V

3.1.4 AMD-K5 CPU

The AMD-K5 family CPU operates on different operation voltage depending on the CPU type. The operating voltage can be known through the marking on the surface of the CPU. (The following diagram is provided as an example only. It does not necessarily indicate a valid product marking.)

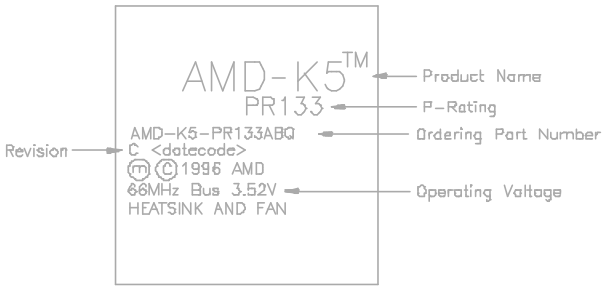


Fig. 2d CPU Description (Top Side)

3.1.5 CYRIX 6x86 CPU

The Cyrix 6x86 has different nominal voltage depends on different lot. Please refer to the CPU marking.

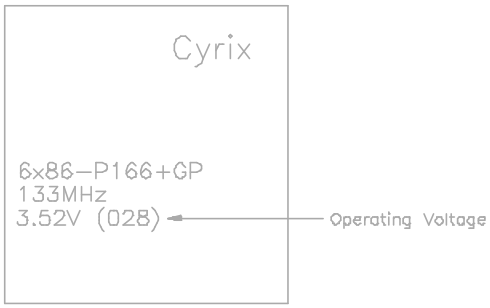


Fig. 2e CPU Description
(Top Side)

Marketing	Recommended Nominal Voltage
3.3V or 3.52V	3.52V
028	3.52V
016	3.3V
Blank	3.52V

3.1.6 CYRIX 6x86L CPU

The Cyrix 6x86L has different I/O and core voltage. Please refer to the CPU marking.

Fig. 2f CPU Description (Top Side)

	I/O Voltage	Core Voltage
Cyrix 6x86L CPU	3.3V	2.8V

3.2 SETTING THE JUMPERS

The table below summaries the functions and settings of each jumper of the motherboard.

Function		Jumper Settings
CPU Voltage Selection	3.3V Single Voltage CPU For P54C, P54CT	JP1: short JP11: open JP12: open S1: short S2: short S3: short
	3.5V Single Voltage CPU For P54C-VRE, AMD-K5, Cyrix 6x86	JP1: open JP11: open JP12: open S1: short S2: short S3: short
	3.3V (I/O)/2.8V (core) Dual Voltage CPU For P55C, Cyrix 6x86L	JP1: shrot JP11: open JP12: short S1: open S2: open S3: open
	3.3V (I/O)/2.9V (core) Dual Voltage CPU For AMD-K6-PR166/PR200	JP1: shrot JP11: short JP12: open S1: open S2: open S3: open
	3.3V (I/O)/3.2V (core) Dual Voltage CPU For AMD-K6-PR233	JP1: shrot JP11: open JP12: open S1: open S2: open S3: open
To be continued...		

Table 3A: Jumper Setting

Function		Jumper Settings
CPU Speed Selection	For 75MHz Intel Pentium, AMD-K5-PR75 CPU	JP2: 1-2 short JP3: 1-2 short S4: short S5: short S6: open
	For 90MHz Intel Pentium, AMD-K5-PR90 and AMD-K5-PR120 CPU	JP2: 1-2 short JP3: 1-2 short S4: short S5: open S6: open
	For 100MHz and 233MHz Intel Pentium, AMD-K6-PR233, AMD-K5-PR100 and AMD-K5-PR150 CPU	JP2: 1-2 short JP3: 1-2 short S4: open S5: short S6: open
	For 100MHz Cyrix 6x86-P120+ CPU	JP2: 1-2 short JP3: 2-3 short S4: short S5: short S6: open
	For 110MHz Cyrix 6x86-P133+ CPU	JP2: 1-2 short JP3: 2-3 short S4: open S5: open S6: open
	For 120MHz Intel Pentium and Cyrix 6x86-P150+ CPU	JP2: 1-2 short JP3: 2-3 short S4: short S5: open S6: open
	For 133MHz Intel Pentium, AMD-K5-PR133 (REV C) and Cyrix 6x86-P166+ CPU	JP2: 1-2 short JP3: 2-3 short S4: open S5: short S6: open
To be continued...		

Table 3B: Jumper Setting

Function		Jumper Settings
CPU Speed Selection	For 150MHz Intel Pentium CPU	JP2: 2-3 short JP3: 2-3 short S4: short S5: open S6: open
	For 166MHz Intel Pentium, AMD-K6-PR166 and AMD-K5-PR166 CPU	JP2: 2-3 short JP3: 2-3 short S4: open S5: short S6: open
	For 200MHz Intel Pentium and AMD-K6-PR200 CPU	JP2: 2-3 short JP3: 1-2 short S4: open S5: short S6: open
On board Sound Chip Selection (Optional)	Enabled	JP13: short
	Disabled	JP13: open
Linear Burst Mode for Cyrix CPU	Linear Burst Mode	JP7: short
	Normal	JP7: open
Clear RTC CMOS Data	Normal	JP0: 1-2 short
	Clear	JP0: 2-3 short
System ROM Selection	5V Flash EPROM	JP5: 2-3 short
	12V Flash EPROM	JP5: 1-2 short

Table 3C: Jumper Setting

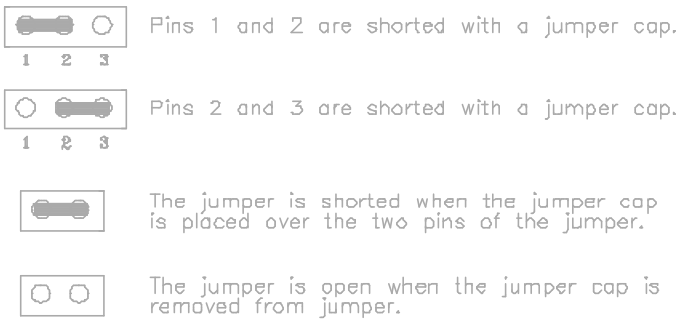
3.3 CONNECTION THE MOTHERBOARD

Once the mainboard have been fastened into the system case, the next step is to install the audio extension card and to connect the internal cables. The internal cables are wire leads with plastic female connectors that attach to the connectors. The mainboard connectors have varying numbers of pins and are the points of contact between the mainboard and other parts of the computer.

A description of each connector and its connector pins follows. See Fig. 3a for the location of the connectors on the mainboard.

Note: Before making connectors on the board, make sure that power to the system is turned off.

3.3.1 JUMPER PRESENTATION



3.3.2 JUMPER CONVENTION OF THE MOTHERBOARD

Different colour of jumper caps (mini-jumpers) are used on the board to represent different usage of the jumpers:

Red : CPU Clock setting
Black: Other

3.3.3 CONNECTORS LOCATION

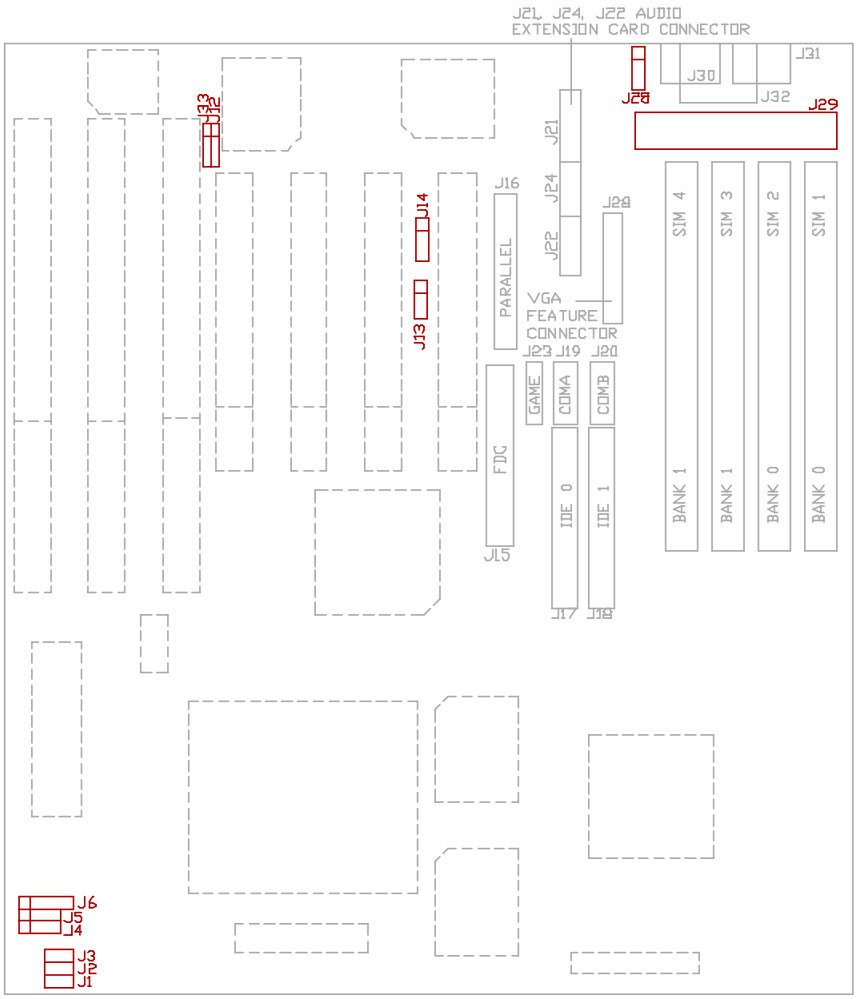


Fig. 3a Connector Location of the mainboard

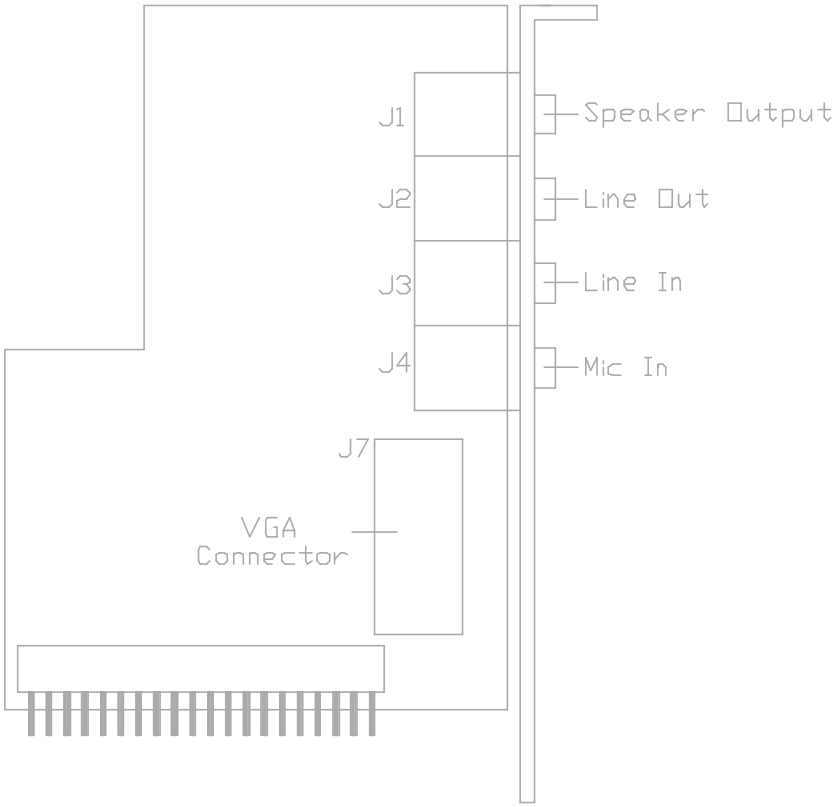


Fig. 3b Connector Location of the Audio Extension Card (Optional)

3.4 CONNECTORS OF MAINBOARD

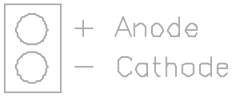
3.4.1 J1 - RESET SWITCH CONNECTOR

Attach the Reset switch cable to this connector. The Reset switch restarts the system.

J1	Description
	Reset
	Normal (default)

3.4.2 J2 - SUSPEND LED CONNECTOR

J2 is usually connected to a LED on front of the system case. If the system board select is in suspend mode, the LED will be off.

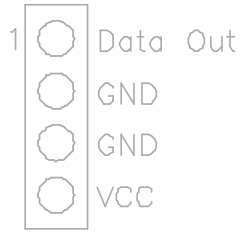


3.4.3 J3 - SMI SWITCH

J3 is for SMI Break Switch Setting. When J3 is trigger from OPEN to CLOSE and back to OPEN, the system would suspend immediately.

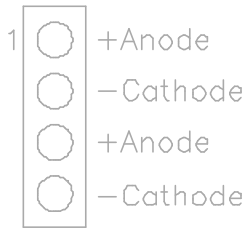
3.4.4 J4 - SPEAKER CONNECTOR

J4 is a four pin connector, which is used to connect with a speaker.



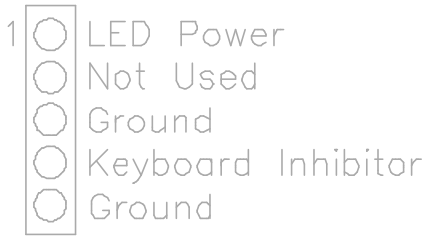
3.4.5 J5 - HDD LED CONNECTOR

J5 is usually connected to a HDD LED on front of the system case. If the HDD is in operation, the indicator lights during operation.



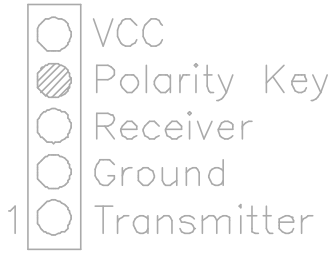
3.4.6 J6 - KEYLOCK CONNECTOR

J6 is a keylock connector that enables and disables the keyboard.



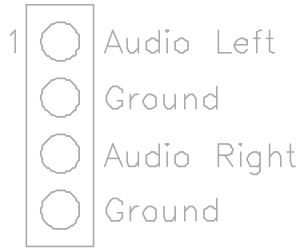
3.4.7 J12 - IrDA CONNECTOR

J12 is the IrDA connector that using the UART2 as interface for IrDA and HP SIR.



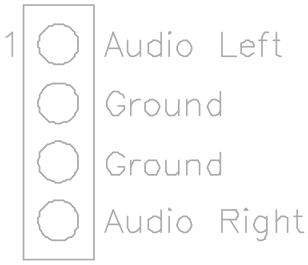
3.4.8 J13 - PANASONIC/MITSUMI CD ROM AUDIO CONNECTOR

J13 is a four pin connector, which is used to connect with the Panasonic or Mitsumi CD ROM audio output.



3.4.9 J14 - SONY CD ROM AUDIO CONNECTOR

J14 is a four pin connector, which is used to connect with the Sony CD ROM audio output.



3.4.10 J15 - FLOPPY DRIVE CONTROLLER

J15 is on the right hand side of PCI Slot 1, please refer to Fig. 3a for its location. This Floppy drive controller also supports 2.88M FDD format.

3.4.11 J16 - PARALLEL PORT

J16 is on the right hand side of PCI Slot 1, please refer to Fig. 3a for its location. Pin 1 is on the up left hand side.

3.4.12 J17 - PRIMARY IDE CONNECTOR

The bootable Hard Disk must connect to this Primary IDE Connector. J17 locates right to J15, please refer to Fig. 3a for its location.

3.4.13 J18 - SECONDARY IDE CONNECTOR

J18 locates right to J17, the primary IDE connector. Please refer to Fig. 3a for its location.

3.4.14 J19 - SERIAL PORT 1 (COMA)

Both COMA and B are 16550 fast UART compatible. J19 is located in between the PCI Slot and the SIMM socket, please refer to Fig. 3a for its location. Pin 1 is on the up left hand side.

3.4.15 J20 - SERIAL PORT 2 (COMB)

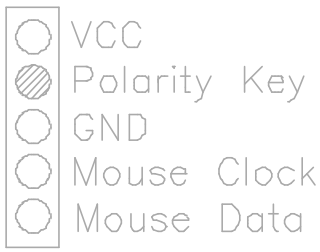
J20 is on the right hand side of J19, please refer to Fig. 3a for its location. Pin 1 is on the up left hand side.

3.4.16 J21, J22, J24 - AUDIO EXTENSION CARD CONNECTOR

J21, J22, J24 is a 2x20 pins female connector. Plug in the optional Audio Extension Card into this connector, and the video and audio output will give from the Audio Extension Card.

3.4.17 J28 - EXTENSION PS/2 MOUSE CONNECTOR

J28 is a five-pin connector with polarity key is located left side of the power connector J22. It is connected with the PS/2 mouse connector cable to extend the PS/2 mouse connector to the rear of the system case.



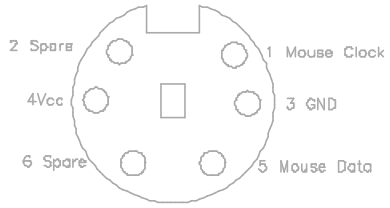
3.4.18 J29 - POWER SUPPLY CONNECTOR

The power supply connector has two six-pin male header connectors. Plug the dual connectors from the power directly onto the board connector.

Pin	Description
1	Power Good (Orange)
2	+5 VDC (Red)
3	+12 VDC (Yellow)
4	-12 VDC (Blue)
5	Ground (Black)
6	Ground (Black)
7	Ground (Black)
8	Ground (Black)
9	-5 VDC (White)
10	+5 VDC (Red)
11	+5 VDC (Red)
12	+5 VDC (Red)

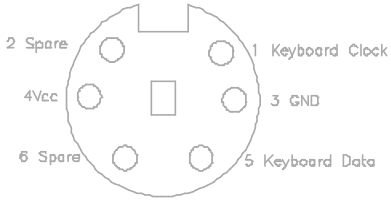
3.4.19 J30 - OPTIONAL PS/2 MOUSE CONNECTOR

An optional six-pin female mini DIN connector is located at the rear of the mainboard. Plug the jack on the PS/2 mouse cable into this connector.



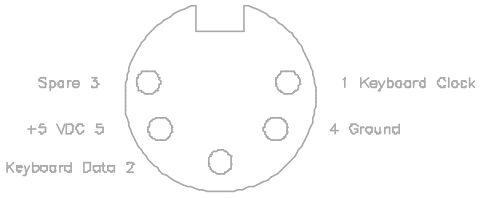
3.4.20 J31 - OPTIONAL PS/2 KEYBOARD CONNECTOR

An optional six-pin female mini DIN connector is located at the rear of the mainboard. Plug the jack on the PS/2 keyboard cable into this connector.



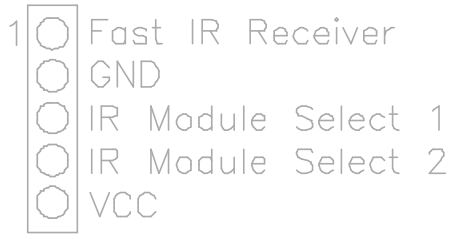
3.4.21 J32 - KEYBOARD CONNECTOR

A standard five-pin female DIN keyboard connector is located at the rear of the mainboard. Plug the jack on the keyboard cable into this connector.



3.4.22 J33 - OPTIONAL FAST IR CONNECTOR

J33 is a five-pin connector, which is used with J12 as fast IR Interface.



3.4.23 J23 - GAME PORT CONNECTOR

J23 locates left to J19, please refer to Fig. 3a for its location. Connect the game port cable to this connector.

3.5 CONNECTORS OF THE AUDIO EXTENSION CARD

3.5.1 J1 - SPEAKER OUTPUT

J1 is a stereo phone Jack connecotr to connect the speaker output.

3.5.2 J2 - LINE OUT

J2 is a stereo phone Jack connector for signal line out from the sound chip.

3.5.3 J3 - LINE IN

J3 is a stereo phone Jack connector for signal line in to the sound chip.

3.5.4 J4 - MIC IN

J4 is a stereo phone Jack connector for mircophone input to the sound chip.

3.5.5 J5 - VGA CONNECTOR

J5 is a 3 row 15 pins female D-type connector. It is used to connect to the VGA monitor.

3.6 GRAPHICAL DESCRIPTIONS OF JUMPER SETTINGS

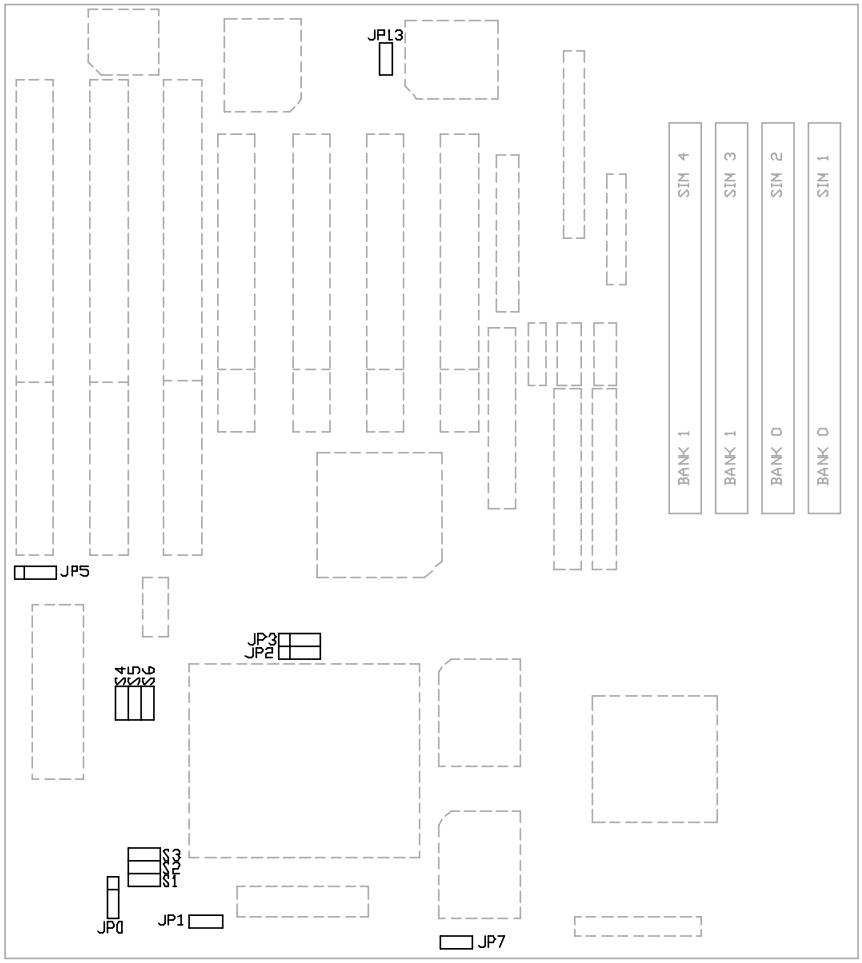
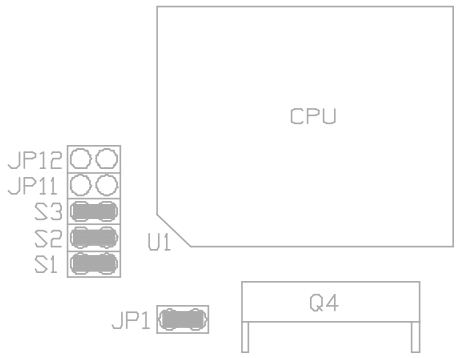


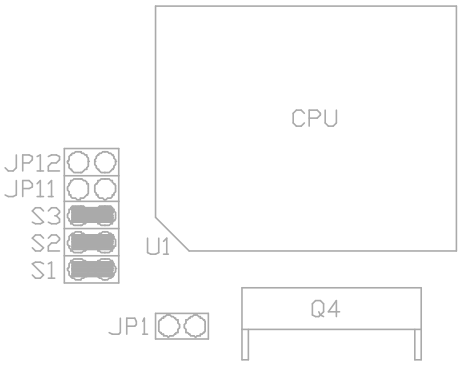
Fig. 4 Jumper Location

3.6.1 CPU VOLTAGE SELECTION FOR 2 TRANSISTORS INSTALLED IN Q4

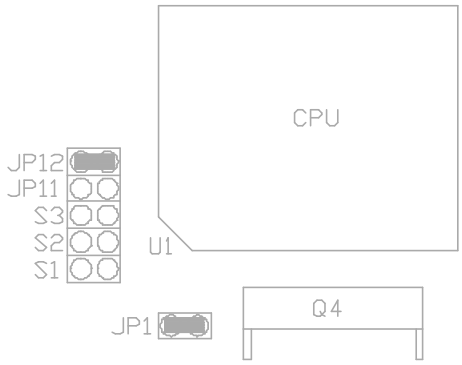
1. For 3.3V Sigle Voltage CPU: P54C, P54CT



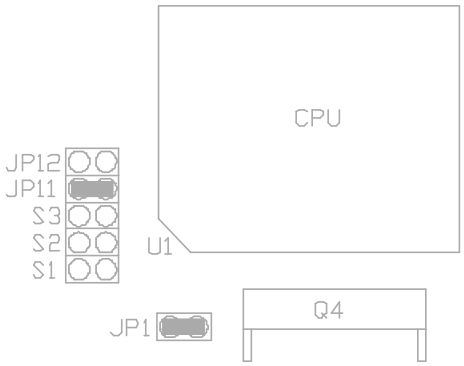
2. For 3.5V Single Voltage CPU: P54C-VRE, AMD-K5, Cyrix 6x86



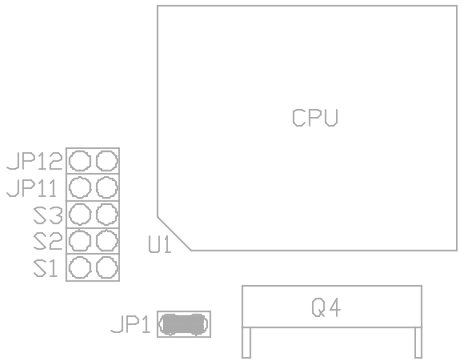
3. For 3.3V (I/O)/2.8V (core) Dual Voltage CPU: P55C, Cyrix 6x86L



4. For 3.3V (I/O)/2.9V (core) Dual Voltage CPU: AMD-K6-PR166/PR200

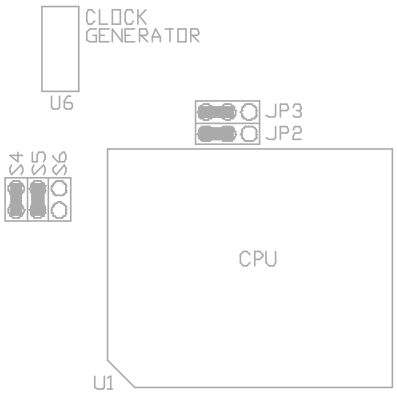


5. For 3.3V (I/O)/3.2V (core) Dual Voltage CPU: AMD-K6-PR233

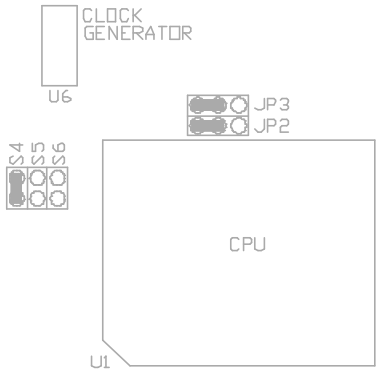


3.6.2 CPU SPEED

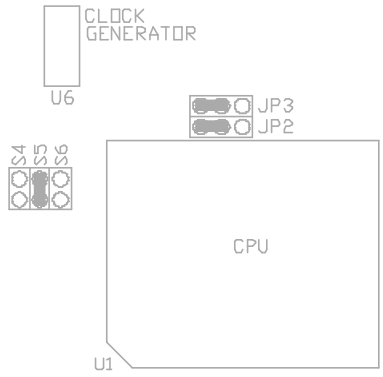
1. For 75MHz Intel Pentium and AMD-K5-PR75 CPU



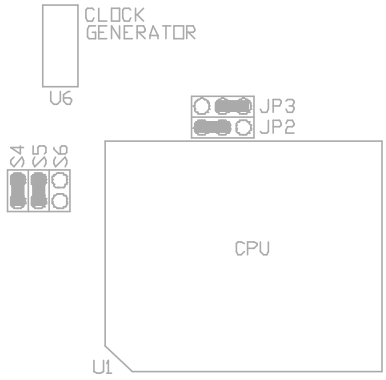
2. For 90MHz Intel Pentium, AMD-K5-PR90 and AMD-K5-PR120 CPU



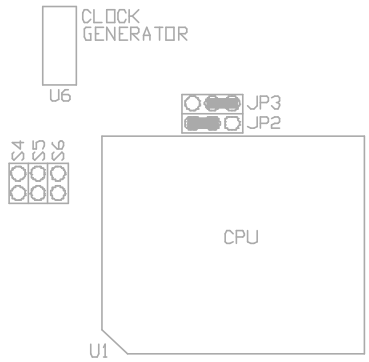
3. For 100MHz and 233MHz Intel Pentium; AMD-K6-PR233, AMD-K5-PR100 and AMD-K5-PR150 CPU



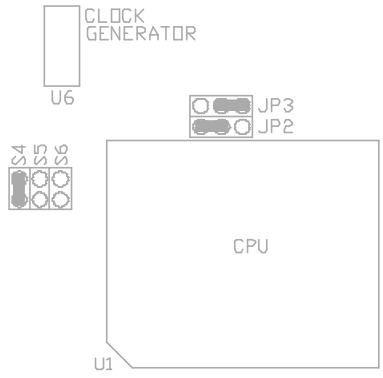
4. For 100MHz Cyrix 6x86-P120+ CPU



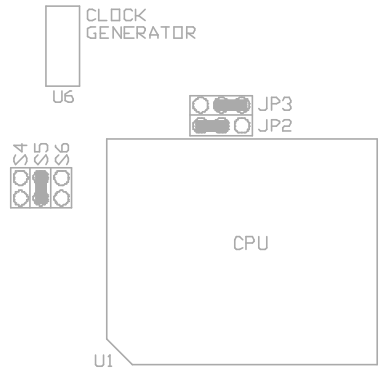
5. For 110MHz Cyrix 6x86-P133+ CPU



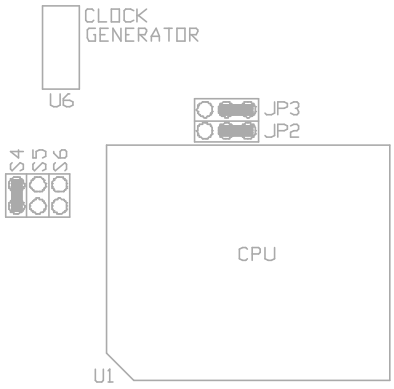
6. For 120MHz Intel Pentium and Cyrix 6x86-P150+ CPU



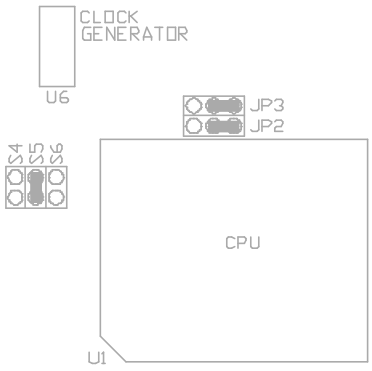
7. For 133MHz Intel Pentium, AMD-K5-PR133 (REV C) and Cyrix 6x86-P166+ CPU



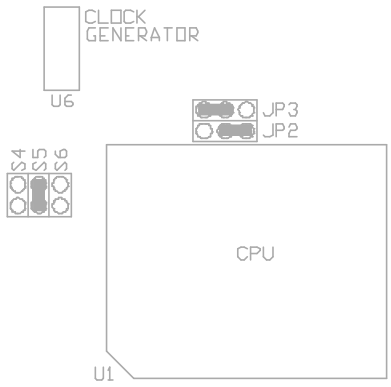
8. For 150MHz Intel Pentium CPU



9. For 166MHz Intel Pentium, AMD-K6-PR166 and AMD-K5-PR166 CPU

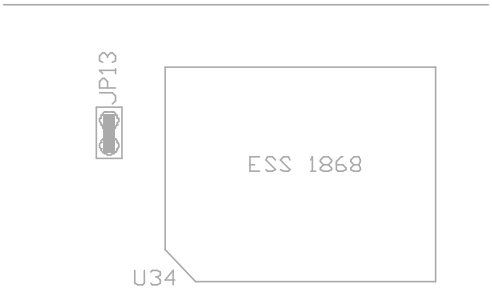


10. For 200MHz Intel Pentium and AMD-K6-PR200 CPU

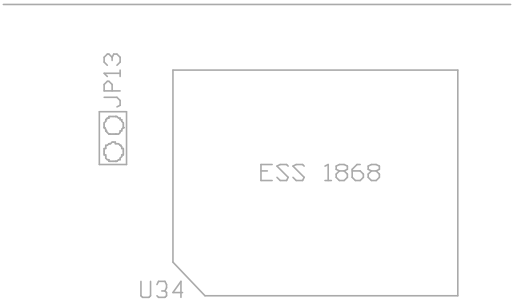


3.6.3 JP13 - ON BOARD SOUND CHIP SELECTION

1. Enable on board Sound Chip



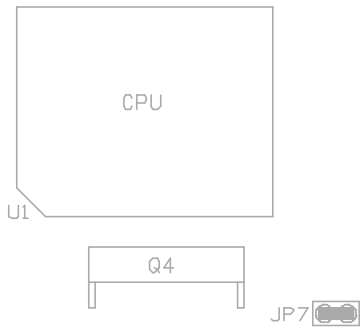
2. Disable on board Sound Chip



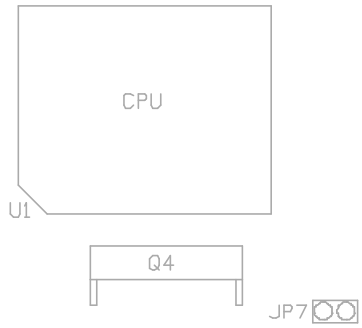
3.6.4 JP7 - LINEAR BURST MODE FOR CYRIX CPU

If Cyrix CPU is installed, JP7 have to shorted to select for Linear Burst Mode, and the option “Linear Burst” should be enabled in BIOS.

1. For Cyrix or IBM CPU:



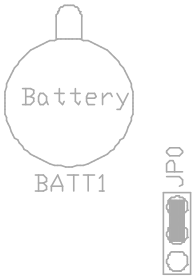
2. For non-Cyrix CPU:



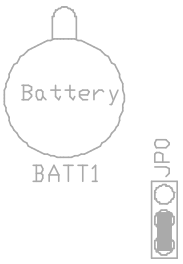
3.6.5 JP0 - DISCHARGE CMOS RAM

JP0 is used to clear the content of the CMOS Data in the Real Time Clock Chip.

1. Normal Mode

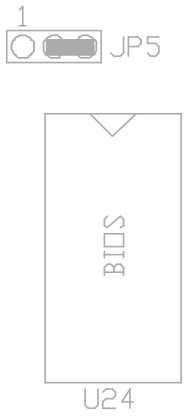


2. Reset Content of RTC

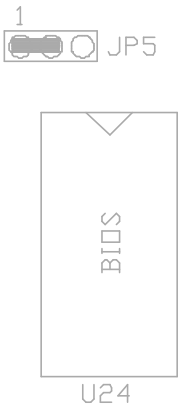


3.6.6 JP5 - VOLTAGE SELECT FOR SYSTEM ROM

1. 5V Flash EPROM as system ROM



2. 12V Flash EPROM as system ROM



CHAPTER 4 SOFTWARE INSTALLATION

In order to let the system board to work efficiently, a series of drivers have to installed according to the operating system used. The drivers are distributed by CD-ROM or by diskette. For CD-ROM version, users have to go through the **REDME.TXT** file on the CD-ROM root directory before installation. **(Caution: For Windows 95 user, it is very important to follow the procedures described in the *\DRIVERS\IDE\WIN95\REDADME.TXT*. To install the IDE driver.)**

For diskette version, please refer to the following section:

4.1 PCI IDE DRIVER INSTALLATION

Please refer to the **README.TXT** file in PCI IDE Driver Diskette for detail installation procedures to be used in various kind of operating system (DOS, Windows 3.1, Windows NT, OS/2 2.XX, Novel 3.1X/4.0X).

4.2 PCI VGA DRIVER INSTALLATION

(1) Set VGA Share Memory Size to “0.5MB”, “1MB”, “1.5MB” or “2MB” in BIOS Setup to configure the video memory size shared by the VGA controller.

(2) Install the PCI VGA Device Driver
Please refer to the **DISK.TXT** file in PCI VGA Utility Disk - DOS Application, for detail installation procedures to be used in varous kind of operating system (DOS, Windows 95, Windows NT, OS/2 2.XX).

4.3 SOUND DRIVER INSTALLATION

Please refer to the **README.TXT** file in the different directories on the Sound Driver Diskette for installation of the sound card driver according to the operating system used.

4.4 THE AUDIORACK32 FOR WIN95

4.4.1 INTRODUCTION

The *Audio***Rack**32 enables you to take advantage of your computer's audio capabilities with all of the controls conveniently in one compact space. You can play audio CDs, wave files (in .WAV and .AUD formats), and MIDI files (in .MID and .RMI formats). With the multi-source Audio Mixer, you can blend these sources with line-in and microphone sources any way you choose. Add tone control and spatialization to your computer with the 3-D/Tone Controller. You can then record your creations as wave files and edit them with the Audio Recorder.

The *Audio***Rack**32 has six main parts:

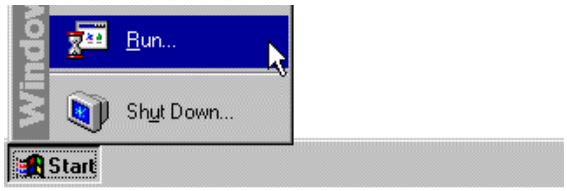
?? Command Center—customizes the appearance of the Audio**Rack**32.
?? 3-D/Tone Controller—adds 3-D stereo and tone controls to the *Audio***Rack**32.
?? Audio Mixer—controls the volume and balance of the *Audio***Rack**32 devices.
?? Digital Audio Player—plays and records files in the .WAV format.
?? MIDI Player—enables you to play MIDI files.
?? Compact Disk Player—enables you to play audio CDs on a CD-ROM drive.

In addition, the *Audio***Rack**32 has a miniature mode enabling you to control the *Audio***Rack**32 while using minimal screen space.

The Audio Recorder is a separate application from the *Audio***Rack**32. It can be used to add effects and edit files recorded with the Digital Audio

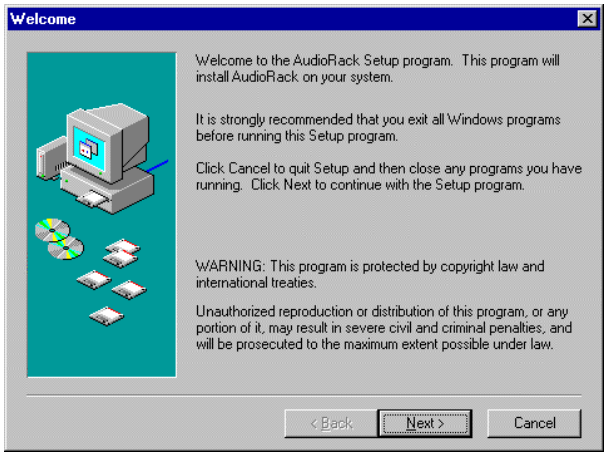
Player or by the Audio Recorder itself. The Audio Recorder can be launched from the *Audio***Rack**32' s Digital Audio Player or on its own.

4.4.1.1 INSTALLING THE *Audio*Rack32



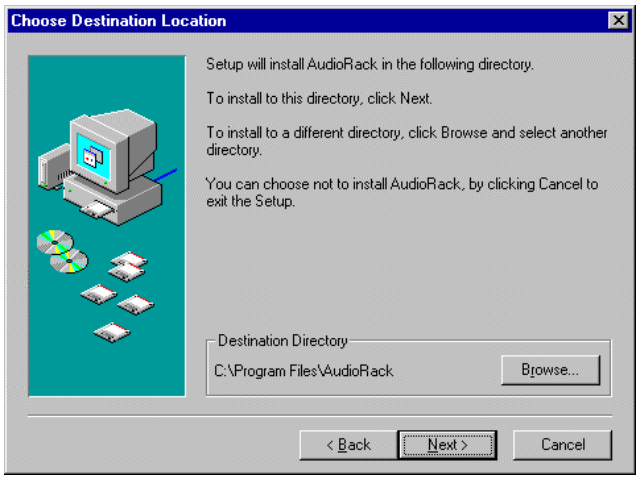
Placing the multimedia CD-ROM Driver in the CD-ROM Drive or Audio**Rack**32 disk in a floppy drive, click **Start** on the taskbar and choose **Run** from the popup menu.

In the Run dialog box, type the letter of the drive and setup (for example, D:\APPS\AUDIO\ARCK32\SETUP), then click **OK**. The first Audio**Rack**32 Setup dialog box appears.



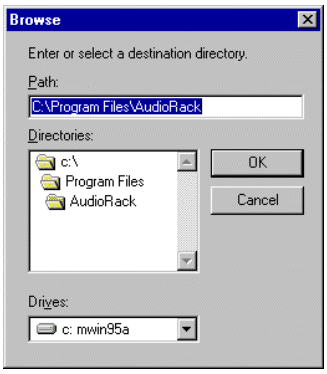
Note the instructions, then click **Next** to proceed or **Cancel** to leave Setup.

Next the Choose Destination Location dialog box appears.



Click **Next** to install the *Audio***Rack**32 in the default directory or **Browse** to choose a different directory. Click on **Cancel** to leave the Setup program or **Back** to return to the Welcome dialog box.

If you wish to install the *Audio***Rack**32 in a directory other than the default directory, enter the directory path in the Browse dialog box.

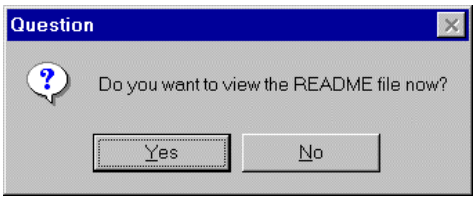


When you are done click **OK** or **Cancel** to return to the Choose Destination Location dialog box.

If the directory you designate doesn't exist, you will be asked to confirm your selection. Click **Yes** to proceed or **No** to go back and enter a new destination directory.

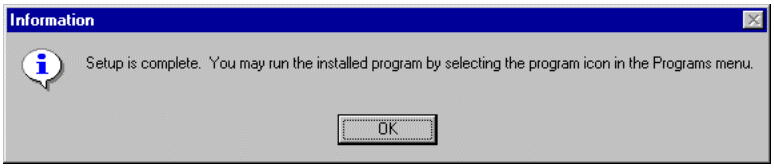
Once you have chosen the default directory or entered a directory of your own choosing, the Setup program will install *Audio***Rack**32.

Before completing installation of the *Audio***Rack**32, you will be given the option to view the README file before exiting the setup program



Click **Yes** to view the README file now or **No** to skip the README file and finish the installation.

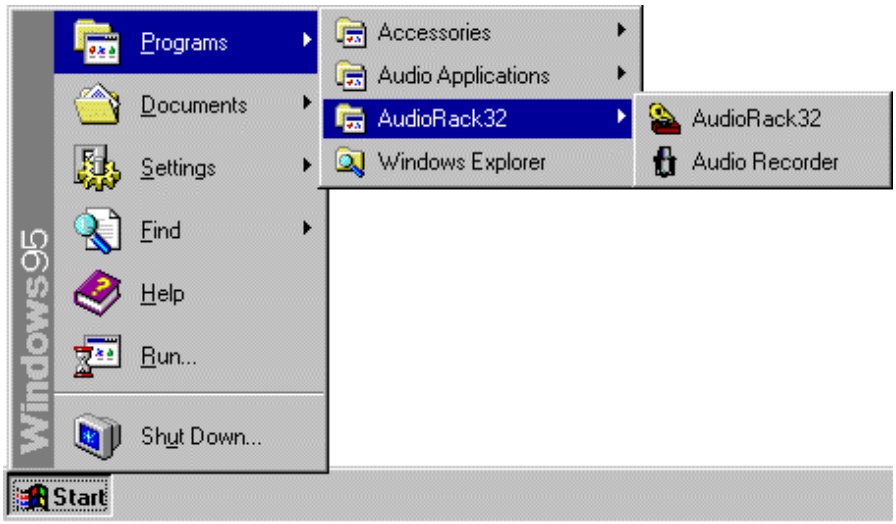
Upon successful completion of the *Audio***Rack**32 installation, the following message will be displayed.



4.4.1.2 UNINSTALLING THE *Audio*Rack32

To remove the *Audio***Rack**32 from your system, start by clicking on (but not releasing) **Start** on the taskbar. Move the cursor to **Settings** and select **Control Panel**. From the Control Panel choose **Add/Remove Programs**. Select AudioRack 2.0 from the list and click **Add/Remove**. After you confirm your decision, the *Audio***Rack**32 will be uninstalled.

4.4.1.3 STARTING THE *Audio*Rack32



Begin by either clicking or pressing (but not releasing) **Start** on the taskbar. Move the cursor to **Programs** and click or wait a moment for the continuation menu to open. When it opens, select the *Audio***Rack**32 folder command and click or wait a moment for the next menu to open. Finally, select the *Audio***Rack**32 logo command and click or release the mouse button to start the *Audio***Rack**32.

Note: If you don't have a CD-ROM drive or the CD audio driver is not installed, the Compact Disk Player portion of the *Audio***Rack**32 will not be displayed. If your hardware doesn't include the Spatializer® (GOI-600D/DW) the 3-D/Tone Controller portion of the *Audio***Rack**32 may be displayed, but will not affect the audio of your computer.

The other application available in the *Audio***Rack**32 folder is the Audio Recorder. Follow the steps for starting the *Audio***Rack**32**,** except click **Audio Recorder** in the last continuation menu to start the Audio Recorder.

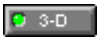
4.4.2 THE COMMAND CENTER

4.4.2.1 INTRODUCTION

The Command Center controls which parts of the *Audio***Rack**32 are displayed. You can display or hide any part of the *Audio***Rack**32 you choose, customizing its appearance to suit your needs or desires. It also displays information on the status of the different audio components.

4.4.2.2 THE COMMAND CENTER CONTROLS

closes the *Audio***Rack**32 window.



displays or hides th 3-D/Tone Controller.

Enables the Miniature mode, minimizing the *Audio***Rack**32.

displays or hides the Digital Audio Player.

accesses On-line Help.

displays or hides the Compact Disk Player

displays/hides the Mixer.

displays or hides the MIDI Player

4.4.2.3 THE COMMAND CENTER DISPLAY

The Command Center display shows information about the status of the different *Audio***Rack**32 components. The display is divided into three rows (one each for the Digital Audio Player, the MIDI Player, and the Compact Disk Player) and five columns (showing a track or file counter, a component icon, the transport state, the track or file name, and a time index). The MIDI Player's row has an additional column to show which MIDI patch set is in use.

counter icon state file name time index

Counter: shows you which track or file in the playlist the component is playing.

Component Icon: is displayed when the associated component is shown and is not displayed when the component is hidden.

Transport State Indicator: shows the state of a component. It indicates when the component is playing, paused, has the Auto Repeat enabled, or in the case of the Digital Audio Player, is recording.

Track or File Name Display: shows the name of the current track or file in the playlist.

Time Index: displays the amount of time elapsed for the track or file in hours, minutes, seconds, and tenths of a second.

The Command Center has an indicator to show when you are listening to ESFM. When the ESFM light between the transport state and the file name is lit in the MIDI Player's row, the MIDI Player is using ESFM synthesis. ESFM performs superior-quality music synthesis compared to that of traditional FM.

4.4.3 THE MINIATURE MODE

4.4.3.1 INTRODUCTION

The Miniature mode is designed to give you full control of the *Audio***Rack**32 while using a minimum of space. You are able to effectively use the *Audio***Rack**32 and still have enough room on your desktop to run other applications. In the Miniature mode, you can play, pause, stop, and control the master volume of the *Audio***Rack**32.

4.4.3.2 THE MINIATURE MODE CONTROLS

stops currently playing tracks or files of active components.

plays currently loaded tracks or files of active components.

pauses currently playing tracks or files of active components.

calls a popup menu where you can restore the *Audio***Rack**32, invoke the **Always on Top** command, select active components (DAT, MIDI, or CD), or exit the *Audio***Rack**32. The Stop, Pause, and Play buttons affect components that are currently active.

controls the master volume.

4.4.3.3 USING THE MINIATURE MODE

Clicking **Stealth** puts the *Audio***Rack**32 display into the Miniature mode. Any audio component (the Digital Audio Player, MIDI Player, or Compact Disk Player) that is currently playing tracks or files remains active when you enter the Miniature mode. You can also activate or deactivate audio components by clicking the Pop-Up Menu button and selecting or deselecting them from the list; however, if a unit has no tracks or files loaded, it won't be able to play anything. To return to the *Audio***Rack**32 window, double click on the Miniature mode display or select **Restore** from the pop-up menu.

There is a second way to enter the Miniature mode: When under the Microsoft Windows95 system shell, double-clicking on a playlist icon lauches the *Audio***Rack**32 in the Miniature mode.

Note: When the *Audio***Rack**32 enter the Miniature mode with the Audio Mixer in Record mode, a system warning message be displayed: "Volume Playback Mixer is off. Volume control is disabled." To retain control of the master volume, be sure the Audio Mixer is in Playback mode before switching to Miniature mode.

4.4.4 THE 3-D/TONE CONTROLLER

4.4.4.1 INTRODUCTION

For GOI-600D/DW Audio Extension Card, Spatializer hardware (ES938) is provided that you can enjoy 3-D stereo effects and tone control. The 3-D/Tone Controller has the Spatial Control and the Tone Controls. By turning on the Spatial Control, any sound played through the *Audio***Rack**32 is transmitted in a wider arc, creating an atmosphere of a resonant sound environment rather than audio issuing from a two dimensional plane. The Tone Controls are used to boost or reduce the low end and high end of the sound spectrum respectively giving you fuller sound.

4.4.4.2 THE 3-D/TONE CONTROLLER CONTROLS

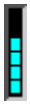
Controls the amount of spatialization from off to minimum level to mid level to maximum level.

Enables and disables the Bass or Trebble Control. There is one Toggle button for each.

Controls the amount of boosting or reduction of the Bass or Treble. There is one slider for each.

4.4.4.3 THE 3-D/TONE CONTROLLER DISPLAY

Shows the amount of spatialization by the number of speakers that are illuminated. If you set the Spatial Control to max, all the speakers are blinking.



Shows the amount of boosting or reduction of the Bass or Treble. The higher up the column past the mid point the light is lit, the more boosting of the given tone control; Bass or Treble. The farther below the mid point the light is, the greater the reduction of the given tone control; Bass or Treble 3-D/Tone.

4.4.4.4 USING THE SPATIAL CONTROL

It has four settings to converts sound from the *Audio***Rack**32 into a 3-D sound:

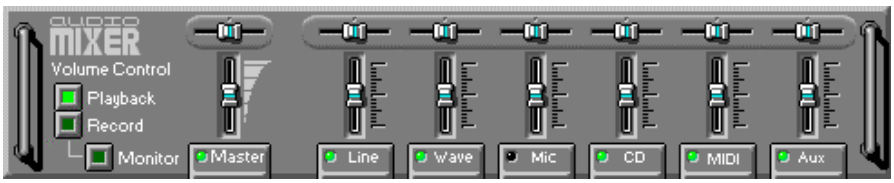
Max: provides greatest effect, works best with games.
Mid: works best with most audio CDs and music (Default setting).
Min: works best with some audio CDs.
Off: no spatialization, normal stereo.

There are two ways to set the Spatial Control. First, you may click on the label of the setting you wish to set the control to. The second way is to click on the dial at the point at which you want the dial to be set.

4.4.4.5 USING THE TONE CONTROLS

Tone Controls, Bass and Treble. You can turn these controls on and off by clicking on their toggle switches labeled with **Bass** or **Treble**. Then use the slider located to the right of the label to control the amount of Bass or Treble. Once you have selected one of the sliders you can use the up and down arrow keys on your keyboard to increase or decrease the amount of Bass or Treble.

4.4.5 THE AUDIO MIXER



4.4.5.1 INTRODUCTION

The Audio Mixer is really two devices in one. These are represented by the two modes: Record mode and Playback mode. When in Record mode, the Audio Mixer regulates the volume and balance of audio signals coming into your recorder. When in Playback mode, the Audio Mixer regulates the volume and balance of outgoing audio. You can toggle between these two modes by alternately clicking **Playback** and **Record** on the left side of the Audio Mixer.

4.4.5.2 THE AUDIO MIXER CONTROLS

The number of sources available to the Audio Mixer may vary depending on the hardware setup of your computer. For instance, unless you have a CD-ROM drive, you won't have a CD source available. Common sources that your computer may have are:

Line: sound from an audio device outside your computer, hooked up to the Line-In jack.
Wave: sound from the Digital Audio Player.
Mic: sound from a microphone hooked up to the Mic jack.
CD: sound from the Compact Disk Player.
MIDI: sound from the MIDI Player.
Aux: sound from an additional line-in determined by the hardware manufacturer. Check your hardware manual for how this source is used.
Master: controls the volume of all the channels mixed together before it goes to your speakers or the recorder.

Each source has a balance slider. However, if your hardware doesn't support stereo, you cannot affect the balance. Selecting a balance slider and using the left and right arrow keys on your keyboard enables you to change the balance as well. Before adjusting the balance on a wave file, be sure the file is in stereo, not mono.

Each source also has a Mute button with the name of the source on it. Click the button to toggle the mute on or off. When the green light is on, the channel is active; when the green light is blackened, no sound will come out of that channel. It' s a good idea to check that your Mute buttons are lit if you aren't getting the sound you expect.

Because your Playback mode and Record mode settings can be different, it can be useful to click **Monitor** while you are recording. This enables you to hear your recording as the Digital Audio Player "hears" it. Remember that **Monitor** will be disabled while you are in Playback mode. You must be in Record mode to turn the monitor on or off.

4.4.5.3 MULTIPLEXER

In Record mode, the *Audio***Rack**32 mixer will behave like a multiplexer with some hardware setups. What makes a multiplexer different from a mixer is that on a multiplexer only one recording source is available at any one time. All other sources are muted. So if you select the microphone source by clicking on the mute button labeled **Mic**, all other sources shown will be muted.

There are four ways to tell if you have a multiplexer in Record mode instead of a mixer. They are:

1. Only one mute button is lit at any one time.
2. The monitor button is disabled.
3. Control of the Master volume is unavailable.
4. There is a source labeled **Mixer**.

In all other ways a multiplexer looks and behaves as a mixer.

Note: The multiplexer exists only in Record mode, not in Playback mode.

4.4.5.4 RECORDING FROM MIXER SOURCE

Multiplexers will have a source labeled **Mixer**. You can use this source to mix audio for recording. The Mixer source uses the mixer in the Playback mode as a source for audio. To mix audio for recording, select the Mixer source in Record mode. Next, select Playback mode. Select from the sources available the ones you want to record and adjust their balance and volume. For example, if you want to sing with a CD and record it, make sure that the mute buttons for **Mic** and **CD** are lit and adjust the balance and volume of these two sources to your liking. Return to the Record mode and you can use the Mixer source as a Master volume and balance control adjusting the volume and balance of the mixed audio from the mixer in the Playback mode. Now you are ready to start recording. Click on the record button and play the devices you wish to record from.

4.4.6 THE DIGITAL AUDIO PLAYER

4.4.6.1 INTRODUCTION

The Digital Audio Player enables you to play, record, and compress sound as .WAV files. In addition, you can play .AUD files. The .WAV files use PCM, which is the Windows? audio file format. The .AUD format uses ESPCM? compression to produce an audio file. Files are written directly to your hard disk as you record, enabling you to record very large files. Your only limitation is the amount of free space on your hard disk. The voice activation feature is useful for recording any kind of intermittent audio. The Digital Audio Player provides a choice of linear PCM (8 or 16 bit) recording. Note that you have additional options using the Audio Recorder, which is invoked by the **Edit** button.

4.4.6.2 SYSTEM REQUIREMENTS

If you wish to use 16-bit stereo at 44.1 kHz for recording or playback, we recommend that your computer have the following capabilities:

?? A 486DX processor with an internal clock speed of 50 MHz or more
?? 8 megabytes or more of RAM
?? An average hard disk access time of 15 milliseconds or less

Computers without these capabilities may lose data if you attempt a 16-bit stereo playback or recording at 44.1 kHz.

4.4.6.3 THE DIGITAL AUDIO PLAYER

starts recording to your hard disk.

plays the wave file currently loaded.

activates or deactivates the Pause.

stops the file currently playing.

goes back one second in the wave file.

goes forward one second in the wave file.

goes to the begining of the wave file or to the next file in the current playlist.

goes to the end of the wave file or to the next file in the current playlist.

enables or disables the Auto Repeat.

Opens the Audio Recorder window.

opens the Set Playlist dialog box.

starts a new file by opening the New Options dialog box.

brings up the Open file dailog box in order to load a file into the Digital Audio Player.

saves an audio file.

4.4.6.4 THE DIGITAL AUDIO PLAYER DISPLAY

The Level Meter displays the output from the left (top) and right (bottom) channels when a wave file is played.

By clicking on the image of the tape deck, you can display information about the file currently loaded in the Digital Audio Player. The display tells you the file name, size, number of bits per sample, sample rate, and whether the file was recorded in stereo or mono. Click again to return to the image of the tape deck.

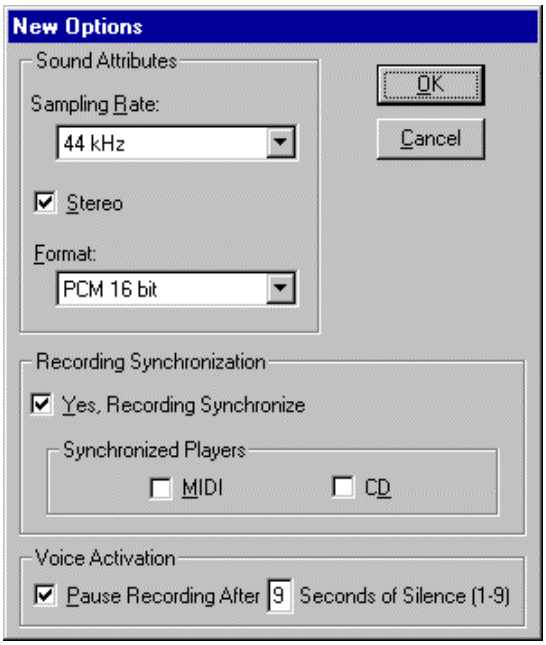
4.4.6.5 PLAYING A WAVE FILE

First click **Open** to bring up the Open file dialog box.

Select the directory and the .WAV or .AUD file you wish to play and click **Open**. Now you can play the file by clicking **Play**.

4.4.6.6 RECORDING A WAVE FILE

Start by clicking **New** to open the New Options dialog box.



You now have several choices to make: the sampling rate, the option for stereo, the format, recording synchronization, and voice activation.

Choose the format first. You have a choice of PCM 16 bit and PCM 8 bit. With PCM, the more bits you use, the higher the quality of the recording; however, if you use more bits, you may drastically increase the amount of disk space the file requires for storage. The format you choose also determines the sampling rates available to you.

Next, choose a sampling rate from 5.5 kHz to 44.1 kHz. As in the case of bits, the more samples you take per second, the more disk space your file requires.

Finally, if your hardware supports stereo, you can opt to record the file in stereo. Remember that choosing stereo doubles the amount of disk space your file requires.

Recording synchronization starts the selected *Audio***Rack**32 component playing automatically when you click **Record** on the Digital Audio Player. Of course, a file, playlist, or CD must be loaded in the component selected. To use recording synchronization, select the **Yes, Recording Synchronize** check box and select the components you want to synchronize: MIDI Player or Compact Disk Player.

Note: If you don't have a CD-ROM drive, you don't have the option of synchronizing that component.

Voice activation pauses the recording when there is no input from the recording source or sources. To use voice activation, select the **Pause Recording After** check box, then enter a number from 1 to 9 in the **Seconds of Silence** box. The recording pauses only after a number of seconds of no input equal to the number entered in the **Seconds of Silence** box. Recording resumes when input from the recording source or sources resumes.

When you are finished click, **OK**.

Next, put the Audio Mixer into Record mode to see that the sources you wish to record are active.

You are now ready to record. Click **Record** and start any audio devices you are recording from. Remember, if you are using recording synchronization, synchronized devices are started automatically.

4.4.6.7 SAVING A WAVE FILE

When you are satisfied with your recording, click **Save** to open the Save As dialog box.

Enter the file name, then choose the directory under which you wish to save the file. When you are done, click **Save**.

4.4.6.8 EDITING A WAVE FILE

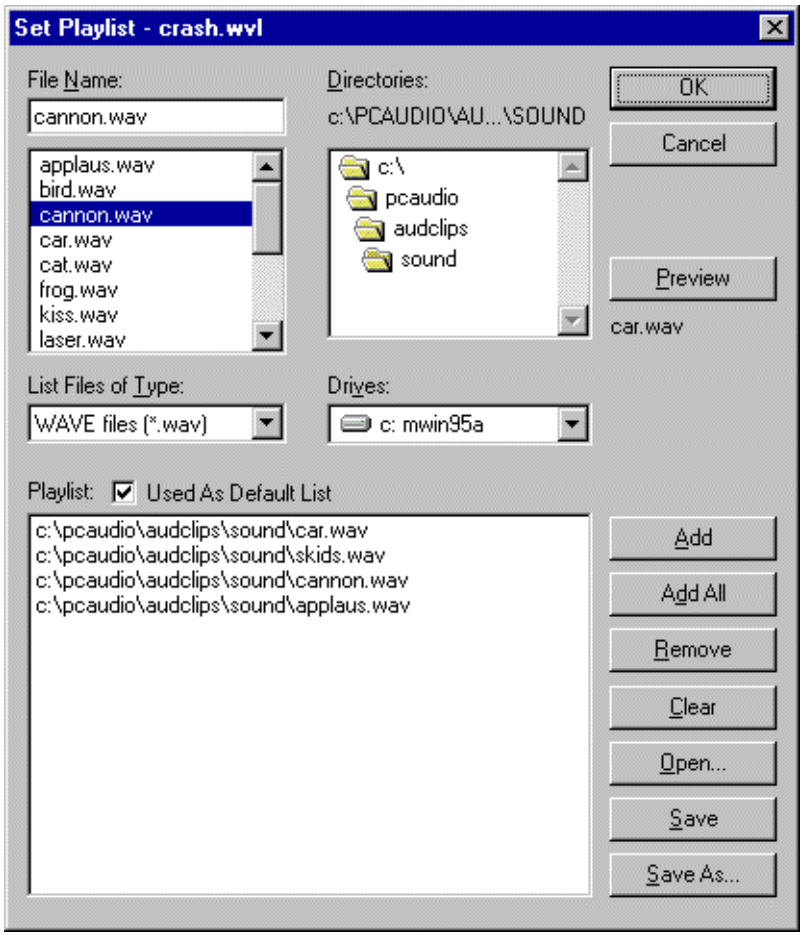
Clicking **Edit** opens the Audio Recorder window.

4.4.6.9 PLAYING A WAVE FILE PLAYLIST

Start by clicking **Playlist** to open the Set Playlist dialog box. Next, click **Open** to choose the playlist you wish to listen to. Select the directory and drive where the playlist file is located. Once you find the file, either click the file once and then click **Open** or just double-click the file. Wave file playlist files have the .WVL extension. When you open the playlist file, return to the *Audio***Rack**32 window by clicking **OK**. Click **Play** to start the playlist.

4.4.6.10 CUSTOMIZING A WAVE FILE PLAYLIST

Begin by clicking **Playlist** on the Digital Audio Player to open the Set Playlist dialog box. If you want to modify an existing playlist, be sure it is loaded first.



There are two ways you can move files into the Playlist box:

- Highlight the file and click **Add**.
- Double-click the file.

Click **Add All** if you want to copy all the files to the playlist.

There are two ways to remove files from the Playlist box:

- Highlight the file and click **Remove**.
- Double-click the file.

Click **Clear** if you want to remove all files from the Playlist box.

To change the order in which the files appear, you can click and drag a file, dropping it into its new position. There are times when you might not remember how a file sounds from its name. Select the file and click **Preview** to hear what it sounds like. The file currently being previewed is displayed directly beneath the Preview button.

When you are done choosing which files are to be in your playlist and determining the order in which they appear, click **Save**. If you want to give your playlist a new name, click **Save As** to open the Save As dialog box. Enter a name and directory to save the playlist file under and click **Save**.

4.4.6.11 SETTING THE DEFAULT WAVE FILE PLAYLIST

When you have created a wave file playlist that you like, you may want to have that playlist file loaded automatically every time you start the *Audio***Rack**32. The Used as Default List check box in the Set Playlist dialog box fulfills this function. The Used as Default check box is selected automatically when you call up the Set Playlist dialog box. The default playlist file is chosen when you click **OK** to exit the Set Playlist dialog box with the following two conditions:

1. The Used as Default List check box is selected.
2. The current playlist is a previously saved playlist file.

If the Used as Default List check box is not selected when you click **OK**, there will be no default playlist file. Nothing will be loaded into the Digital Audio Player when you next start the *Audio***Rack**32.

If the current playlist has not been saved, you will be prompted to save the current playlist as a wave file playlist file before trying to return to the *Audio***Rack**32. In other words, you have started from scratch and created a brand new playlist file, which as of yet has not been saved and therefore has no file name associated with it. When the Used as Default check box is selected,you will not be allowed to return to the *Audio***Rack**32 until you give the playlist file a name.

Remember to save any changes you want to make to a playlist file before you return to the *Audio***Rack**32. Only the last saved version of the default playlist file will be loaded into the Digital Audio Player.

Once the two conditions listed above have been met, the *Audio***Rack**32 will automatically load the default playlist file into the Digital Audio Player every time you start the *Audio***Rack**32 until you choose a new playlist file to be the default playlist.

4.4.7 THE MIDI PLAYER

4.4.7.1 INTRODUCTION

The MIDI Player enables you to play MIDI files with the .MID or .RMI file extensions. These MIDI (Musical Instrument Digital Interface) files can be produced by sequencer programs and then played back using the MIDI Player.

4.4.7.2 THE MIDI PLAYER CONTROLS

plays the MIDI file currently loaded.

goes back one file in the playlist.

activates or deactivates the Pause.

goes forward one file in the playlist.

stops the file currently playing.

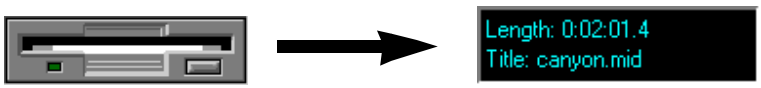
enables or disables the Auto Repeat.

goes back one second in the MIDI file.

Opens the Set Playlist dialog box.

goes forward one second in the MIDI file.

4.4.7.3 THE MIDI PLAYER DISPLAY

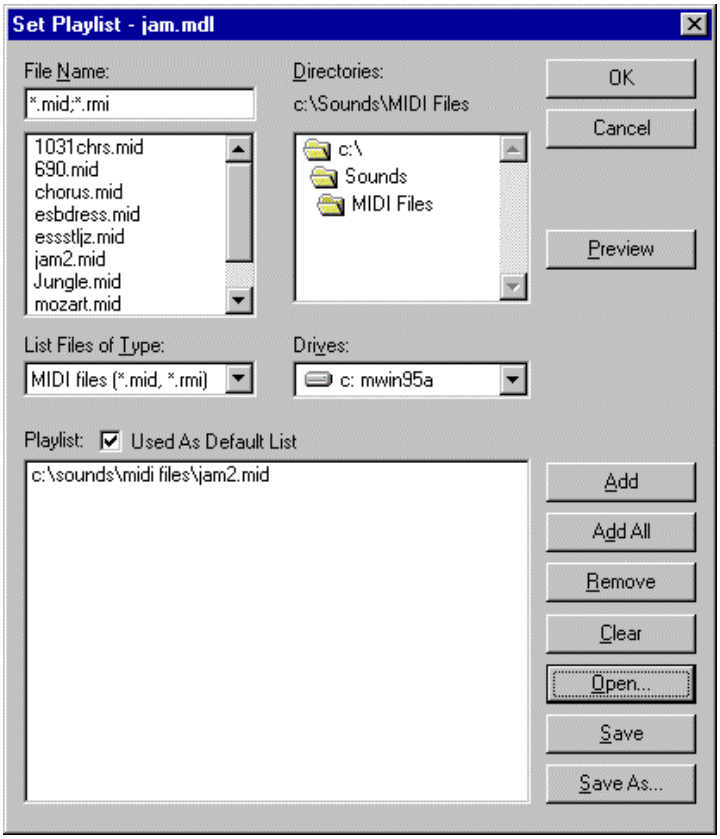


By clicking on the image of the floppy drive, you can display the length and name of the current MIDI file in the playlist. Click the display to return to the image of the floppy drive.

The MIDI player has an indicator to show when you are listening to ESFM. When the ESFM light to the left of the playlist button is lit, the MIDI Player is using ESFM synthesis. ESFM performs superior-quality music synthesis compared to that of traditional FM, ESFM is invoked automatically under Windows when you have properly installed hardware equipped with ESFM synthesis capability.

4.4.7.4 PLAYING A MIDI FILE

The MIDI Player plays files with the .MID and .RMI extensions. To play one or more of these files, first click **Playlist**. This opens the Set Playlist dialog box.

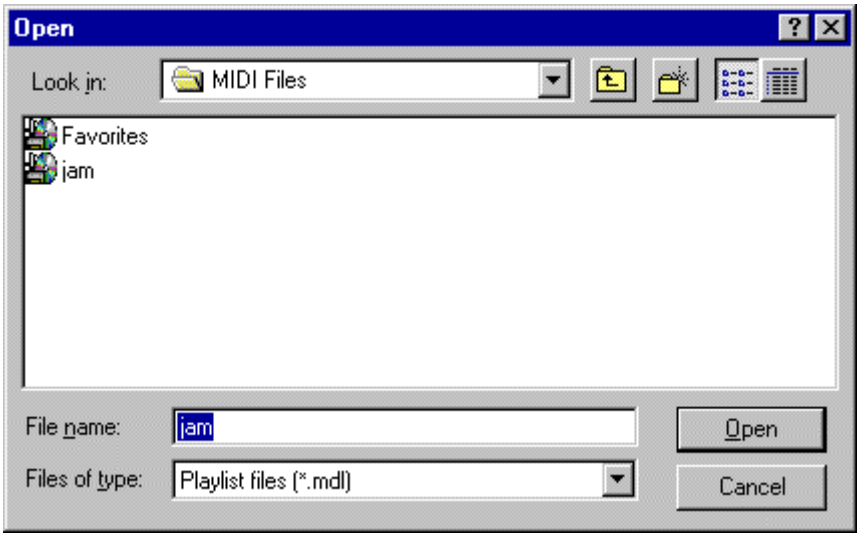


Choose the directory containing the file or files you wish to play. Then highlight those files and click **Add** to copy them to your playlist. You can double-click a file as well to add it to the playlist. When you are done, click **OK**.

Now you are ready to play a MIDI file. Click the Play button to start the file. The player continues to play this file to the end and then moves on to the next file in the playlist until there are no more files to play. You may click the Stop button to halt play. Clicking the Pause button enables you to stop and resume playing anywhere in a file. Clicking the Auto Repeat button causes the MIDI Player to repeatedly play an entire playlist.

4.4.7.5 PLAYING A MIDI FILE PLAYLIST

The first step is to click the Set Playlist button. Click **Open** in the Set Playlist dialog box to bring up the Open dialog box.



From the Open dialog box, you can load a previously saved playlist of MIDI files (MIDI playlist files have the .MDL extension) into the Set Playlist dialog box either by selecting the files or entering the file names and clicking **Open** or by double-clicking the playlist files. You can then edit the list or return to the MIDI Player and press the Play button to play the files.

4.4.7.6 CUSTOMIZING A MIDI FILE PLAYLIST

You can add, delete, and arrange MIDI files you wish to play in any manner you desire. If you want to modify an existing playlist, you must load it first as previously described.

There are two ways you can move a MIDI file into the Playlist box:

?? Highlight the file and click **Add.**
?? Double-click the file.

Click **Add All** if you want to copy all the MIDI files to the playlist.

There are two ways to remove a MIDI file from the Playlist box:

?? Highlight the file and click **Remove.**
?? Double-click the file.

Click **Clear** if you want to remove all MIDI files from the Playlist box.

To change the order in which the files appear, you can click and drag a file, dropping it into its new position. There are times when you might not remember how a file sounds from its name. Select the file and click **Preview** to hear what it sounds like. The file currently being previewed is displayed directly beneath the Preview button.

When you are done choosing which files are to be in your playlist and determining the order in which they appear, click **Save**. If you want to give your playlist a new name, click **Save As** to open the Save As dialog box. Enter a name and directory to save the playlist file under and click **Save**.

4.4.7.7 SETTING THE DEFAULT MIDI FILE PLAYLIST

When you have created a MIDI file playlist that you like, you may want to have that playlist file loaded automatically every time you start the *Audio***Rack**32. The Used as Default List check box in the Set Playlist dialog box fulfills this function. The Used as Default check box is selected automatically when you call up the Set Playlist dialog box. The default playlist file is chosen when you click **OK** to exit the Set Playlist dialog box with the following two conditions:

1. The Used as Default List check box is selected.
2. The current playlist is a previously saved playlist file.

If the Used as Default List check box is not selected when you click **OK**, there will be no default playlist file. Nothing will be loaded into the MIDI Player when you next start the *Audio***Rack**32.

If the current playlist has not been saved, you will be prompted to save the current playlist as a MIDI file playlist file before trying to return to the *Audio***Rack**32. In other words, you have started from scratch and created a brand new playlist file, which as of yet has not been saved and therefore has no file name associated with it. When the Used as Default check box is selected,you will not be allowed to return to the *Audio***Rack**32 until you give the playlist file a name.

Remember to save any changes you want to make to a playlist file before you return to the *Audio***Rack**32. Only the last saved version of the default playlist file will be loaded into the MIDI Player.

Once the two conditions listed above have been met, the *Audio***Rack**32 will automatically load the default playlist file into the MIDI Player every time you start the *Audio***Rack**32 until you choose a new playlist file to be the default playlist.

4.4.8 THE COMPACT DISK PLAYER

4.4.8.1 INTRODUCTION

If you have a CD-ROM drive, you can play audio CDs. The Compact Disk Player uses intelligent CD playlist management. It remembers the last playlist you used with each CD and loads that playlist automatically whenever you insert that CD.

4.4.8.2 THE COMPACT DISK PLAYER CONTROLS

plays the current track in the playlist.

activates or deactivates the Pause.

stops the track currently playing.

forward five seconds to the current track.

goes back one track in the playlist.

goes forward one track in the playlist.

opens the Set Playlist dialog box.

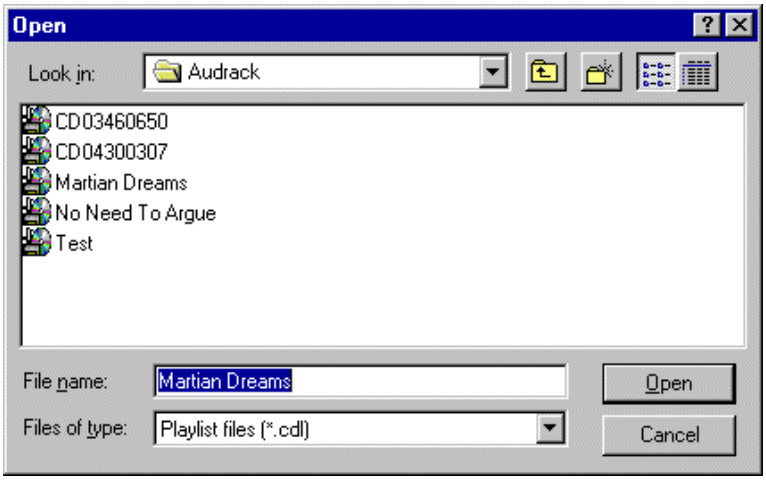
ejects the CD from the CD-ROM drive.

4.4.8.3 PLAYING COMPACT DISKS

Insert the CD you wish to play in the CD-ROM drive, then click the Play button. Clicking the Stop button resets the current track to its beginning and stops play. To halt the Compact Disk Player at a specific point on a track, click the Pause button. Click the Auto Repeat button to have the current playlist played continuously. When you wish to play a different CD, first click the Stop button, then the Eject button, and your CD is ejected from the CD-ROM drive. Then load the desired CD and click the Play button.

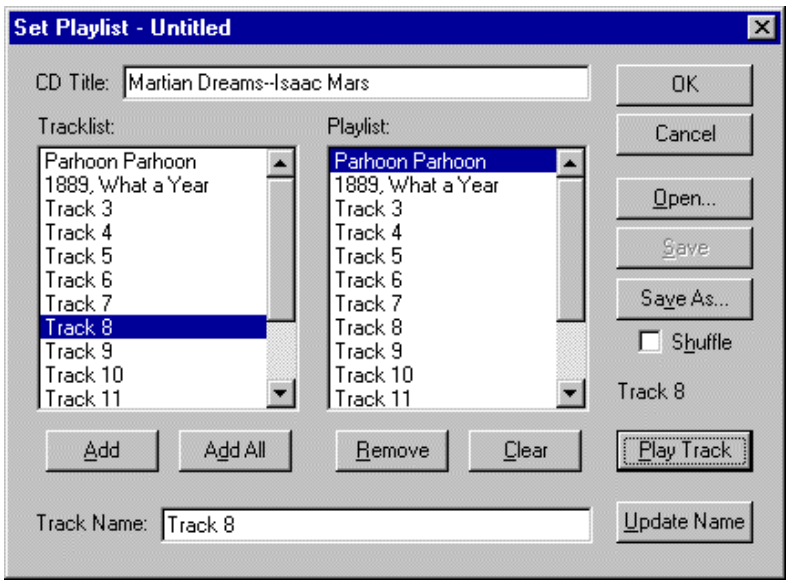
4.4.8.4 PLAYING A COMPACT DISK PLAYLIST

If you want to play a previously saved playlist from one of your CDs, you must load it by clicking **Playlist**. This opens the Set Playlist dialog box. Enter the name of or click the playlist file you wish to play. CD playlist files have the .CDL extension. Click **Open** when you have selected the playlist file. This returns you to the Set Playlist dialog box. Clicking **OK** returns you to the *Audio***Rack**32 window where you can just click the Play button to start the Compact Disk Player.



4.4.8.5 CUSTOMIZING A COMPACT DISK PLAYLIST

To customize your own playlist for a CD, click **Playlist**. This opens the Set Playlist dialog box.



Click in the CD Title text box and enter the name of the CD. To change the name of a track, select a track from the tracklist, then enter a new name in the Track Name text box. Click **Update Name** or press Return to enter the new name after you type it.

There are three ways you can move a track into the Playlist box:

?? Select the track and click **Add**.
?? Double-click on the track.
?? Drag a track from the tracklist and drop it into the playlist.

Click **Add All** if you want to copy all the tracks to the playlist.

There are three ways to remove a track from the Playlist box:

?? Select the track and click **Remove**.
?? Double-click on the track.
?? Drag a track from the playlist and drop it into the tracklist.

Click **Clear** if you want to remove all tracks from the Playlist box.

To change the order in which the tracks appear, you can click and drag a track, dropping it into a new position. There are times when you might not remember how a track sounds from its name. Select the track and click **Play Track** to hear what it sounds like. The track currently being previewed is displayed directly above the **Play Track** button.

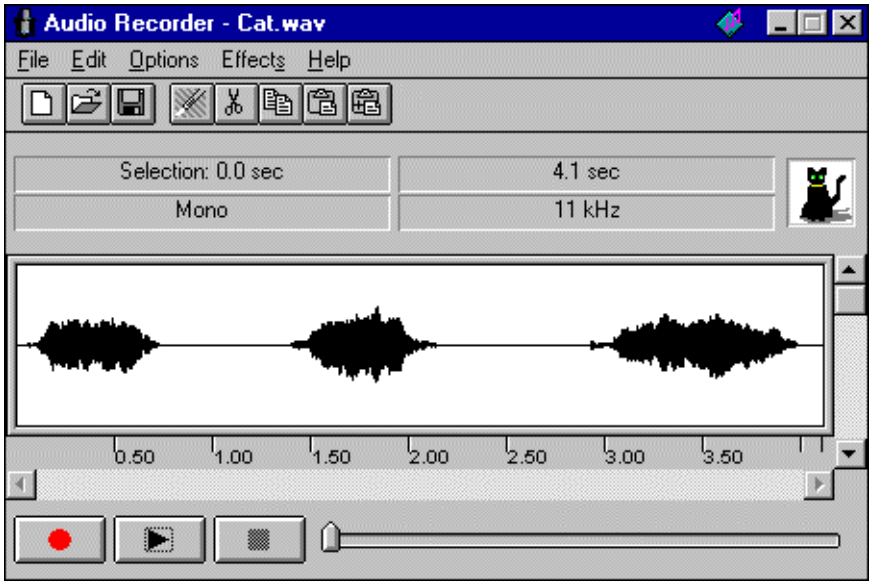
Choose the **Shuffle** option if you wish the Compact Disk Player to play the tracks on your playlist in random order. When you are done, click **OK**.

After customizing a playlist, save it by clicking **Save**. To give the playlist file a different name from its current one, click **Save As** to open the Save As dialog box.

You can name your playlist with the .CDL extension by typing in the file name and clicking **Save**. The *Audio***Rack**32's intelligent CD management will load that playlist the next time you load the CD in your CD-ROM drive unless you save another playlist for that CD. The Compact Disk Player always remembers the last playlist saved for each CD.

4.4.9 THE AUDIO RECORDER

4.4.9.1 INTRODUCTION



The Audio Recorder enables you to record, compress, store, and play back voice, music, and other sound. It provides settings for sound attributes such as mono/stereo, compression level, and sampling rate. You can use it to embed sound objects in documents created in applications that support object linking and embedding (OLE).

The Audio Recorder' s edit, record, and playback capabilities are compatible with the Windows Sound Recorder and other recorders that record and play back in the PCM format.

4.4.9.2 THE AUDIO RECORDER CONTROLS

starts a new audio file.

opens an audio file.

saves an audio file.

reverses the last change you made to the current audio file.

removes the selected portion of the audio file and stores it on the Clipboard.

copies the selected audio portion to the Clipboard without removing it.

inserts the Clipboard audio at the cursor or replaces the selected portion.

mixes the Clipboard audio with the audio beginning at the cursor.

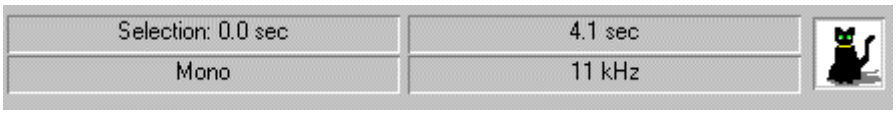
starts recording.

plays the currently loaded audio file.

stops the file currently playing or recording.

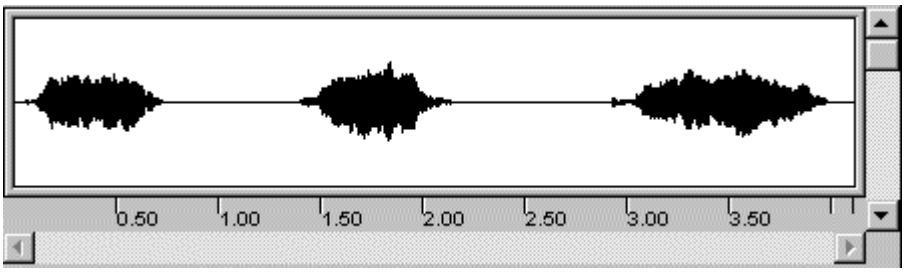
determines the cursor position on the waveform

4.4.9.3 THE AUDIO RECORDER DISPLAY



The four text boxes under the tool bar display the length in seconds of the selected part of the currently loaded file, the total length in seconds of the current file, whether the file is in stereo or mono, and the sampling rate in kilohertz.

To the right of the text boxes is a box displaying the icon associated with the particular file. If a file has no icon associated with it, it is given a default icon.



The large area in the center of the window is the waveform display. It shows a graphic representation of the audio file currently in memory. The waveform is essentially a graph of the variation in air pressure over time that occurs when sound is produced, above the line (the line signifies one atmosphere) being a measurement of positive air pressure and below the line, negative.

You control the display with the vertical and horizontal scroll bars:

1. To zoom in on (magnify) the waveform, move the vertical scroll button down. To zoom out (minify), move the vertical scroll button up.

2. displayed, click the right or left area of the horizontal scroll bar, respectively.

3. To mark a portion of the audio file for playback, click at the beginning of the desired section, move the mouse while holding down the mouse button, and release the mouse button at the end of the desired section. Then click the Play button to hear the selected section.

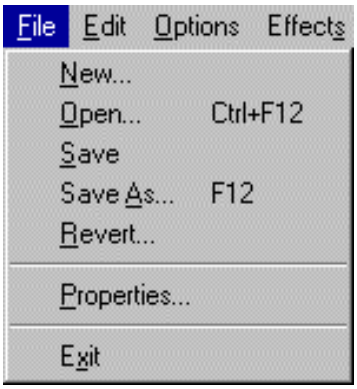
4. To deselect a selected portion of the waveform, click anywhere in the waveform display.

5. To select the entire file, double-click anywhere in the waveform display.

Note: Compressed files (.AUD files using ESPCM or ADPCM) cannot be displayed or edited. The waveform display is grayed out.

4.4.9.4 AUDIO RECORDER MEMU COMMANDS

4.4.9.4.1 FILE MENU



New starts a new file by opening the Sound Attributes dialog box.

Open brings up the Open file dialog box in order to load a file into the Audio Recorder.

Save stores the current file to disk under its existing file name

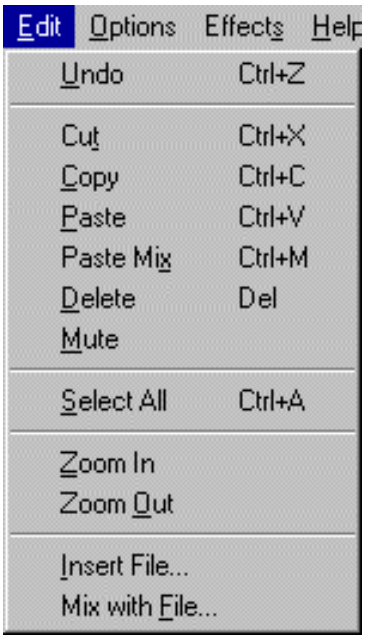
Save As enables you to save a recorded file with a new name.

Revert restores the file to its state when the file was last saved.

Properties opens the Properties dialog box, allowing you to view or change the properties of the current audio file.

Exit closes the Audio Recorder window.

4.4.9.4.2 EDIT MENU



Undo reverses the last change you made to the current audio file.

Cut removes the selected portion of the audio file and stores it on the Clipboard.

Copy copies the selected portion of the audio file to the Clipboard without removing it.

Paste inserts the audio stored on the Clipboard at the cursor or replaces a selection on the waveform display.

Delete removes the selected portion of the file. The **Del** or **Delete** key on your keyboard also serves this function. Use **Undo** immediately after deleting to recover accidentally deleted material.

Mute makes the selected portion of the file silent, reducing the amplitude of the selected portion of the waveform to zero. Use **Undo** immediately after muting to recover accidentally muted material.

Select All selects the entire recording.

Zoom In displays a smaller portion of the file in the waveform display.

Zoom Out displays a larger portion of the file in the waveform display.

Insert File opens the Insert File dialog box, enabling you to paste a file of your choice into the currently loaded file.

Mix with File opens the Mix with File dialog box, enabling you to paste-mix a file of your choice into the currently loaded file.

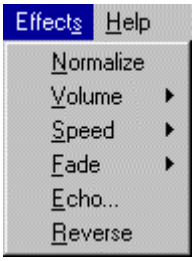
Note: The Edit Menu is not available for compressed files.

4.4.9.4.3 OPTIONS MENU

Auto Repeat allows a loaded file to play endlessly when **Play** is clicked.

Always On Top keeps the Audio Recorder on top of other windows on your desktop

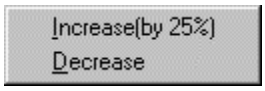
4.4.9.4.4 EFFECTS MENU



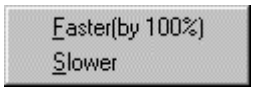
These commands alter the audio you have selected. If there is no selection, the entire file is affected.

Normalize amplifies the selected audio to the maximum volume possible without distortion**.**

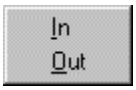
Volume increases or decreases the amplitude of the selected audio by 25% each time you apply it.



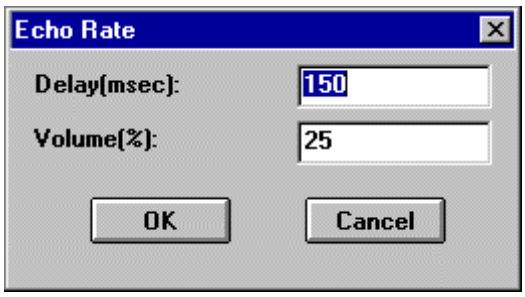
Speed changes the selected audio to be 100% faster or slower.



Fade causes the selected audio to **Fade In** from silence to its highest amplitude or **Fade Out** from its highest amplitude to silence. In other words, **Fade In** will have a three effects. First the leftmost portion of the selected audio will be silenced; zero amplitude. Second the rightmost portion of the selected audio will remain unchanged. Third, the audio in between will be ramped from left to right, from silence to the rightmost portion of the selected audio. **Fade Out** does the same thing except the selected audio is ramped down from the left to silence on the right.



Echo displays the Echo Rate dialog box. Here you can set the echo delay in milliseconds and volume percentage for the selected audio. Essentially Echo copies and paste-mixes the selected audio into your selection. The Delay is how far to the right the duplicate is shifted. The Volume percentage is how loud the echo is in comparison to the original selection.

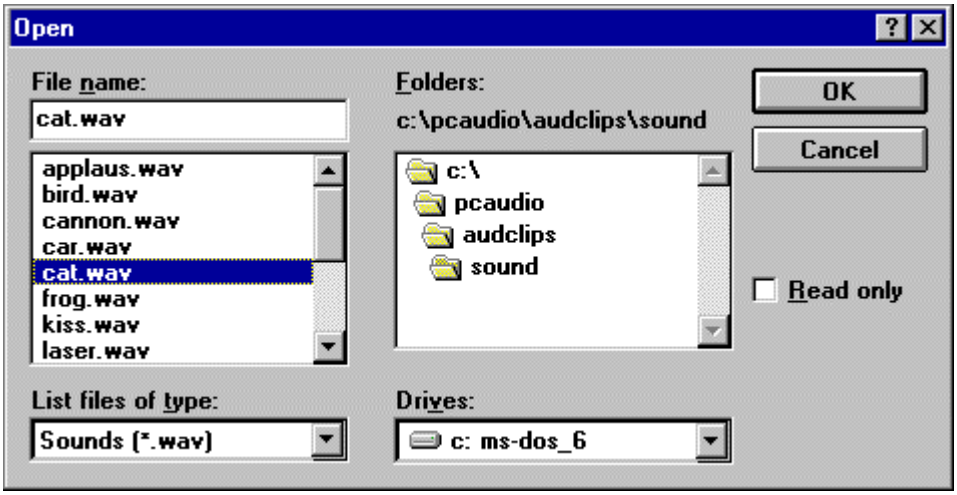


Reverse rotates the selected audio horizontally, so the end becomes the beginning and the beginning the end.

Note: The Effects Menu is not available for compressed files.

4.4.9.5 PLAYING A WAVE FILE

First chose **Open** from the File menu or click the Open file button on the tool bar, bringing up the Open file dialog box.

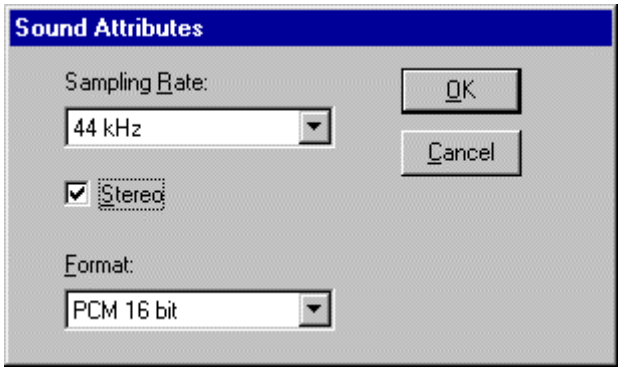


Choose the directory and the .WAV or .AUD file you wish to play and click **OK**. Now you can play the file by clicking the Play button.

Note: If you wish to be sure the file can' t be changed in any way, select the **Read only** attribute. This attribute is temporarily assigned to the file.

4.4.9.6 RECORDING A WAVE FILE

Start off by selecting **New** from the File menu or clicking the New file button on the tool bar to open the Sound Attributes dialog box.



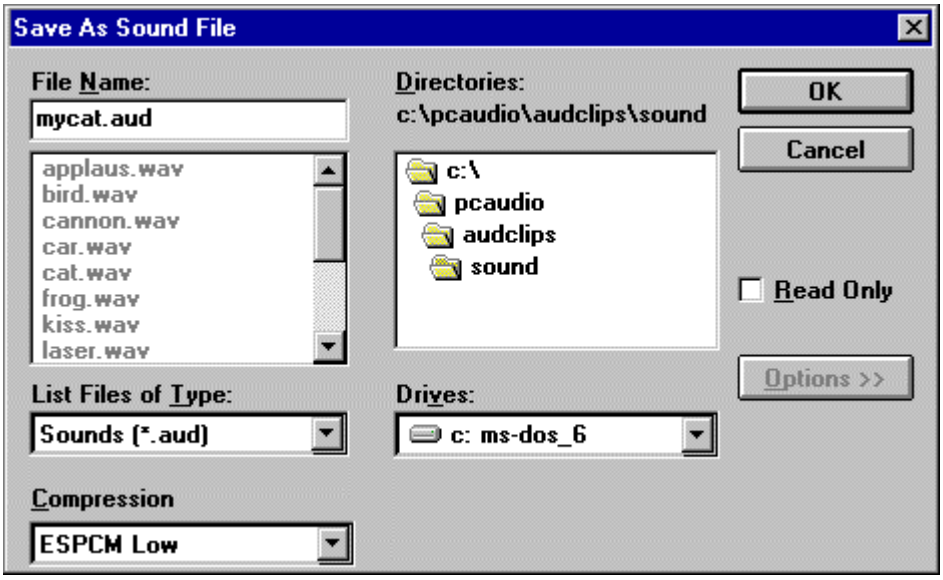
In the Sound Attributes dialog box, choose settings for the sampling rate, stereo on or off, and the format. Choose one of the PCM (uncompressed) formats if you want the highest sound quality or if you wish to edit or modify the recording with Effects commands before you save it. Use one of the other formats if you don't mind sacrificing sound quality for disk space. When you are finished, click **OK**.

Next, check your muting and recording volume levels on the Audio Mixer to be sure the sources you want to record from are active and at the proper levels.

Now you are ready to record. Click the Record button and speak into the microphone or turn on whatever audio device(s) you are recording from. Click the Stop button to end recording.

4.4.9.7 SAVING A WAVE FILE

When you are satisfied with your recording, select **Save As** from the File menu or click on the Save file button on the tool bar. This opens the Save As Sound File dialog box.



Enter the name of the file and choose the drive and directory where you wish to save it. You may wish to select the **Read Only** attribute to prevent accidental erasure or recording over of the file. The proper file type is displayed depending on the format of the file you are saving. If the file is uncompressed (you are using a PCM format) and you wish to compress it at this point, click **Options** and choose a compression algorithm. When you are done, click **OK**.

4.4.9.8 EDITING A WAVE FILE

4.4.9.8.1 DELETING AN AUDIO SECTION

1. With the mouse, select the portion of the audio data to be deleted.

2. Press the **Del** key or choose the **Delete** command from the Edit menu. The selected audio disappears, joining the audio before and after it. If you wish to save the deleted section, use the **Cut** command instead of **Delete**.

To restore a deleted audio section, choose the **Undo** command before making any other changes to the audio file.

4.4.9.8.2 MUTING AN AUDIO SECTION

1. Select the waveform of the audio to be muted.

2. Choose **Mute** from the Edit menu. The selected audio is silenced; the waveform is reduced to a flat line.

To restore a muted audio section, choose the **Undo** command before making any other changes to the audio file.

4.4.9.8.3 MOVING OR COPYING AN AUDIO SECTION

1. Select the portion of the audio data to be moved or copied.

2. Click the Cut button to erase the selected audio and place it on the Clipboard, or click the Copy button to leave the selected audio as is while copying it to the Clipboard.

3. Place the cursor where you want the Clipboard material to appear and click the Paste button.

4.4.9.8.4 RECORDING NEW AUDIO AND PLACING IT ON THE CLIPBOARD

1. Place the cursor at the end of the waveform display, or play the file to the end.

2. With input source(s) ready, click the Record button to record new material. Click the Stop button to finish.

3. Use the mouse to select the section just recorded, then click the Cut or Copy button to put that audio section onto the Clipboard.

4.4.9.8.5 INSERTING AUDIO FROM THE CLIPBOARD

1. Place the cursor at the point in the waveform display where you want to insert audio from the Clipboard.

2. Click the Paste button. The Clipboard audio waveform appears at the cursor. No audio is erased.

4.4.9.8.6 REPLACING THE SELECTED AUDIO WITH CLIPBOARD AUDIO

1. Use the mouse to select the waveform of the audio to be replaced.

2. Click the Paste button. The Clipboard audio appears in place of the selected audio.

4.4.9.8.7 MIXING CLIPBOARD AUDIO WITH THE SELECTED AUDIO

1. Place the cursor at the beginning of the audio to be mixed, or select a section of audio to be mixed.

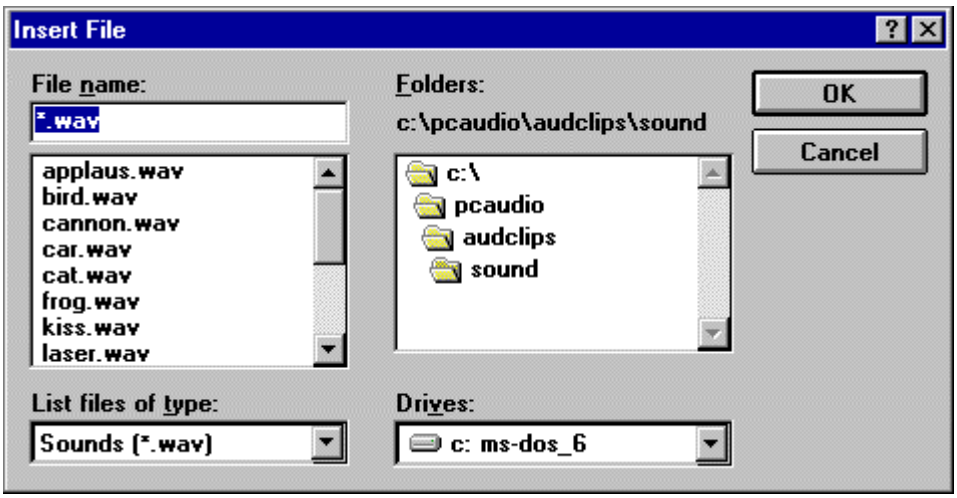
2. Click the Paste Mix button. The Clipboard audio is combined with the audio after the cursor. If a section of audio was selected, the Clipboard audio is combined with the selected audio until the end of either the Clipboard or selected audio.

4.4.9.8.8 INSERTING AUDIO FROM ANOTHER FILE

1. Place the cursor at the point in the waveform display where you want to insert an audio file, or select the audio you want to replace with an audio file.

2. From the Edit menu, choose **Insert File** to display the Insert File dialog box. Then choose an audio file to insert into the current file. If audio is selected, the inserted audio file replaces the selected audio.

3. Click **OK.**

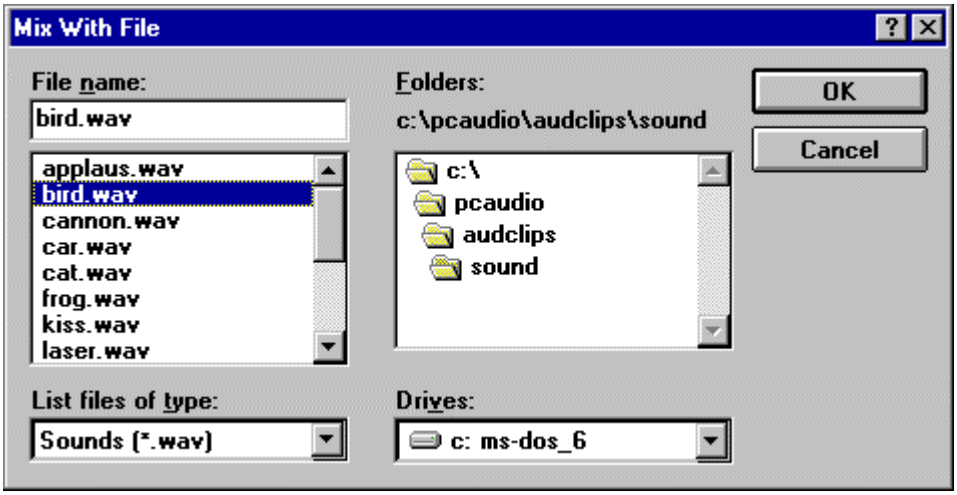


4.4.9.8.9 MIXING AUDIO FROM ANOTHER FILE

1. Place the cursor at the beginning of the audio to be mixed.

2. From the Edit menu, choose **Mix with File** to display the Mix With File dialog box. Then choose an audio file to combine with the current file, beginning at the cursor.

3. Click **OK**.



4.4.9.8.10 CHANGING THE WAVEFORM WITH EFFECTS COMMANDS

The Effects commands are described in this chapter in the section Audio Recorder Menu Commands—Effects Menu. The commands are:

Normalize:	highest amplitude possible	**Fade**:	**In** or **Out**
Volume:	**Increase** or **Descrease**	**Echo**:	delay and intensity can be set
Speed:	**Faster** or **Slower**	**Reverse**:	reverses time axis of the recording

4.4.9.9 ADDING SOUND TO A DOCUMENT: DRAG AND DROP

The Audio Recorder's drag and drop feature enables you to embed audio files in documents.

1. Open a document in the appropriate Windows application.

2. Load an audio file from your disk to the Audio Recorder, or use an audio file you just recorded.

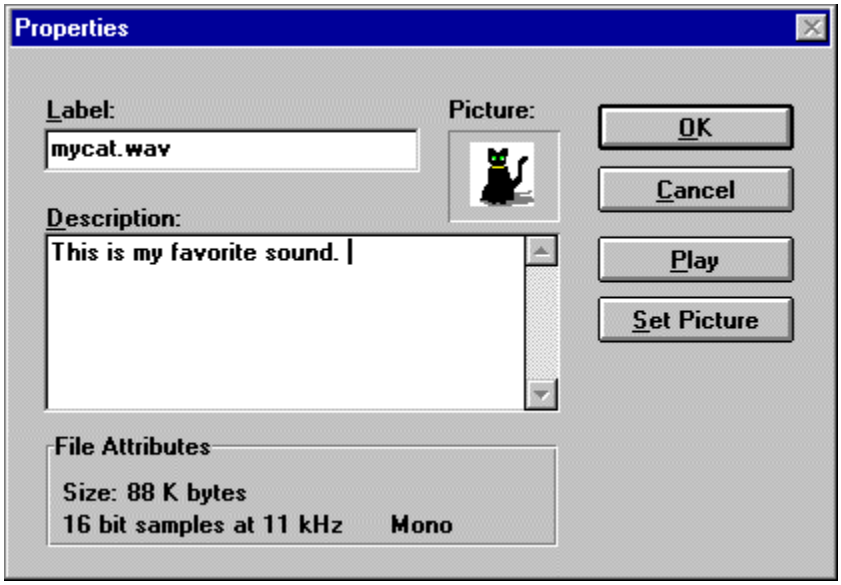
3. Move the cursor to the icon at the top right of the Audio Recorder. The cursor changes into a hand. Click and hold down the mouse button, dragging the icon to the document window, then release the button at the place you want the audio icon to appear.

4. To play an audio object in a document, double-click its icon.

You can also add audio to a document from the document's application. Place the cursor where you want the audio icon to appear, choose the application's command for inserting an object, then select Audio Recorder in the list box. Refer to the section of the Windows User’ s Guide for more information.

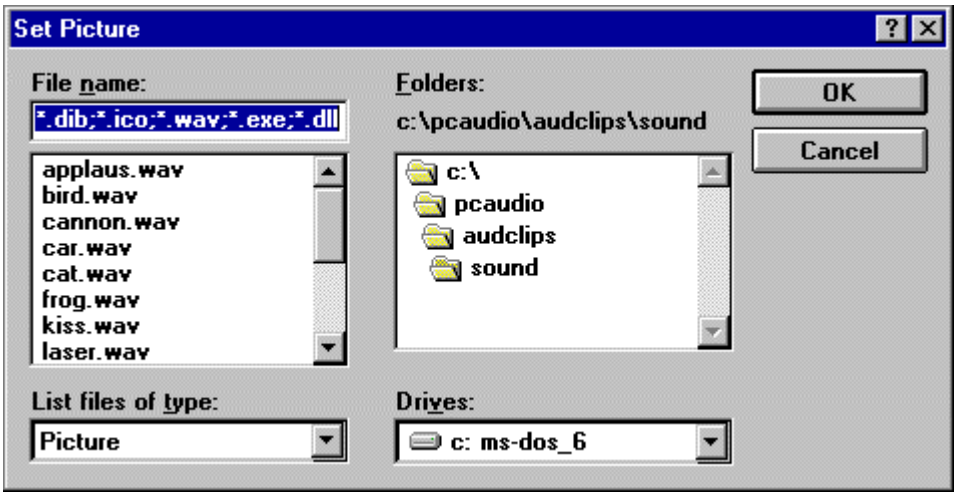
4.4.9.10 CHANGING AN AUDIO FILE'S PROPERTIES

An audio file contains more than audio data. You can attach a title, description, and an icon to an audio file. To do so, choose **Properties** from the File menu. The Properties dialog box appears.



In this dialog box, you can place the cursor in the Label or Description area to add or change the label or description for the audio file. Click **Play** to hear the audio file.

The Audio Recorder assigns a default picture of the *Audio***Drive** logo to each audio file. To select your own icon for a given sound file, click **Set Picture**. The Set Picture dialog box appears.



From here, select the picture to appear with the audio file. It can be any graphic contained in a bitmap (.BMP or .DIB), wave (.WAV), icon (.ICO), executable (.EXE), or library (.DLL) file.

The picture you choose appears in the Audio Recorder. It also appears in any document in which you embed the audio file.changing wave file

When you are finished, click **OK**.

4.5 XING MPEG PLAYER (OPTIONAL)

Xing is a software MPEG player for the Video CD and MPEG format data. Please refers to the README.TXT file in the diskette for details about the installation.

CHAPTER 5 AWARD BIOS SETUP GUIDE

This following manual is specially provided for the BIOS supported system. After the configuration of the mainboard, and have assembled the components, user can turn on the completed system. At this point, run the software setup to ensure that the system information is correct.

The software setup of the system board is achieved through Basic Input-Output System (BIOS) programming. Use the BIOS setup program to tell the operating system what type of devices (such as disk drives) are connected to the system board.

The system setup is also called CMOS setup. Normally, users need to run system setup if either the hardware configuration is not identical with information contained in the CMOS RAM, or the CMOS RAM has lost power.

5.1 AWARD BIOS SETUP

The setup program provided with the mainboard is the Award BIOS from Award Software, Inc. Enter the AWARD Setup program's Main Menu as follows:

1. Turn on or reboot the system. After a series of diagnostic check, the following message appear:

"Press DEL to enter SETUP"

2. Press the <DEL> key to enter the AWARD BIOS setup program and the following screen appears:

ROM PCI/ISA BIOS (2A5IFG3A)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	HDD LOW LEVEL FORMAT
LOAD SETUP DEFAULTS	SAVE & EXIT SETUP
	EXIT WITHOUT SAVING
Esc : Quit	? ? ? ? : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color
Time, Data, Hard Disk Type...	

3. Choose an option and press <Enter>. Modify the system parameters to reflect the options installed in the system. (see the following sections for more information).

4. Press <ESC> at anytime to return to the Main Menu.

5. In the Main Menu, choose "SAVE AND EXIT SETUP" to save change and reboot the system. Choosing "EXIT WITHOUT SAVING' to ignore all changes and exists the program.

5.2 STANDARD CMOS SETUP

ROM PCI/ISA BIOS (2A5IFG3A)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

Date (mm:dd:yy) : Thu, Jan 31 1991
Time (hh:mm:ss) : 15 : 23 : 15

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master : Auto	0	0	0	0	0	0	AUTO	
Primary Slave : None	0	0	0	0	0	0	--------	
Secondary Master : None	0	0	0	0	0	0	--------	
Secondary Slave : None	0	0	0	0	0	0	--------	

Drive A : 1.44M , 3.5in.
Drive B : None

Video : EGA/VGA
Halt On : All Errors

Base Memory:	640K
Extended Memory:	7168K
Other Memory:	384K
Total Memory:	8192K

Esc : Quit ? ? ? ? : Select Item PU/PD/+/- : Modify
F1 : Help (Shift)F2 : Change Color

Date(mm/dd/yy) Type the current date.

Time(hh:mm:ss) Type the current time.

Hard Disks	Choose from the standard hare disk types 1 to 45. Type 47 is user definable. Type Auto is for auto detect the hard disk type.
Drive A&B	Choose 360K, 5.25 in. 1.2M, 5.25 in. 720K, 3.5 in. 1.44M, 3.5 in. 2.88MB 3.5 in. or None
Video	Choose EGA/VGA, CGA 40, CGA 80, or MONO,
Halt On	Choose All Errors No Errors, All, But Keyboard, All, But Diskette, or All, But Disk/Key

5.3 BIOS FEATURES SETUP

ROM PCI/ISA BIOS (2A5IFG3A)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
Quick Power On Self Test	: Disabled	D0000-D3FFF Shadow	: Disabled
Boot Sequence	: A,C	D4000-D7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000-DBFFF Shadow	: Disabled
Boot Up Floppy Seek	: Enabled	DC000-DFFFF Shadow	: Disabled
Boot Up Numlock Status	: On		
Boot Up System Speed	: High		
Gate A20 Option	: Fast		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay (Msec)	: 250		
Security Option	: Setup		
PCI/VGA Palette Snoop	: Disabled		
Assign IRQ for VGA	: Disabled		
OS Select For DRAM > 64MB	: Non-OS2		
		ESC: Quit	? ?? ?? ? : Select Item
		F1: Help	PU/PD/+/-: Modify
		F5: Old Values	(Shift)F2: Color
		F7: Load Setup Defaults	

BIOS Setup Defaults

A short description of the screen items follows:

Virus Warning: Enable Virus from invading the Boot area in either Hard Disk.

CPU Internal Cache: Choose Enabled or Disabled. This option lets user choose whether to use CPU internal cache memory. The default is Enabled.

External Cache: Choose Enabled or Disabled. This option lets user choose whether to use secondary cache memory. The default is Enabled.

Quick Power On Self Test: Choose Enabled or Disabled. This option let the POST sequence runs longer for through tests.

Boot Sequence: With the default setting the BIOS first attempts to boot from drive A: and then, if unsuccessful, from hard disk C:. User can reverse this sequence with "C: A:", but then drive A: cannot boot directly.

Swap Floppy Drive: Choose Enabled or Disabled. This option lets end users to change the Drive A: or B: to others.

Boot Up Floppy Seek: Choose Enabled or Disabled. "Disabled" provides a fast boot and reduces the possibility of damage to the heads.

Boot Up NumLock Status: Choose On or Off. On puts numeric keypad in Num Lock mode at boot-up. Off puts numeric keypad in arrow key mode at boot-up.

Boot Up System Speed: Choose High or Low. Set the CPU timing at Boot Up, the default is high.

Gate A20 Option: Choose Fast or Slow. The system switch back an forth from real mode to virtue mode, fast means the system will switch through logic, slow through keyboard. The default is Fast.

Typematic Rate Setting: Choose Enabled or Disabled. Enabled will determines the typematic rate defined by following two options.

Typematic Rate: The number selected 6,8,10... indicates how fast the number of characters can response in one second.

Typematic Delay (Msec): The number selected indicates the time period between two identical keys appear.

Security Option: Choose Setup or System. If system is selected, the password should be set.

PCI/VGA Palette Snoop: Select Disabled or Enabled. If Enabled the MPEG Card can synchronised with PCI/VGA.

Assign IRQ for VGA: Select Disabled or Enabled. Disable this option will make the system BIOS not assign IRQ for the VGA card, so one more IRQ can be spare for another device.

OS Select For DRAM > 64MB: Select Disabled or Enabled. If the system memory is larger than 64MB and running OS/2, please enable this item. However, if it use other operating system, please disable this feature. Furthermore, if the system memory is less than 64MB, the BIOS will ignore this function.

Video BIOS Shadow: ROM Shadow copies Video BIOS code from slower ROM to faster RAM. Video BIOS can then execute from RAM.

C8000-CFFFF Shadow: If enabled and BIOS is present in this segment, then the BIOS is shadowed.

D0000-DFFFF Shadow: If enabled and BIOS is present in this segment, then the BIOS is shadowed.

5.4 CHIPSET FEATURES SETUP

The Advanced Chipset Setup option is used to change the values of the chipset registers. These registers control most of the system options in the computer.

Note: Change these Settings only if user is familiar with the Chipset.

ROM PCI/ISA BIOS (2A5IFG3A)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Auto Configuration	: Enabled	System BIOS Cacheable	: Enabled
		Video BIOS Cacheable	: Enabled
SDRAM Leadoff Timing	: 3 Ck	Memory Hole at 15M-16M	: Disabled
DRAM Leadoff Timing	: 6 Ck	CPU-PCI Post Write Rate	: 4 Ck
MDLE Delay Timing (ns)	: 5	Latency for CPU-PCI	: 1 Ck
EDO CAS Pulse Width	: R1 W2 Ck	CPU-PCI Burst Mem Write	: Disabled
EDO CAS Precharge Time	: 1 Ck	CPU-PCI Post Mem Write	: Enabled
EDO MDLE Timing	: 1 Ck	VGA Shared Memory Size	: 1 MB
EDO BRDY# Timing	: 1 Ck	VGA Memory Clock (MHz)	: 55
EDO RAS Precharge Timing	: 3 Ck	Linear Mode SRAM Support	: Disabled
EDO RAMW# Power Saving	: Disabled		
ISA Bus Clock Frequency	: PCICLK/4		
Slow Refresh (1:4)	: Enabled		
		ESC: Quit ?⁇⁇ ? : Select Item	
		F1: Help PU/PD/+/-: Modify	
		F5: Old Values (Shift)F2: Color	
		F7: Load Setup Defaults	

A short description of the screen items follows:

Auto Configuration: The default value of the following options in this menu will be different according to the CPU clock speed:

EDO CAS Pulse Width
EDO CAS Precharge Time
EDO RAS Precharge Timing
ISA Bus Clock Frequency

To enable the "Auto Configuration" option will let the system BIOS to detect the CPU clock speed, and it will use the pre-defined value for these options according to speed detected, and the corresponding setting will be protected from making change. It is strongly recommended to enable this option.

SRAM Leadoff Timing: It is used to control the leadoff cycle of the asynchronous SRAM cache. The available option is "3 Ck" and "4 Ck", and the default value is "3 Ck".

DRAM Leadoff Timing: It is used to control the leadoff cycle of the DRAM. The available option "5 Ck" and "6 Ck", and the default option is "5 Ck".

Asyn. SRAM Burst Tim.: It is used to control the burst cycle timing of the asynchronous SRAM type cache. The option "2 Ck" and "3 Ck" should be set depending on the CPU clock speed, "2 Ck" is the optimum setting for this option over all range of CPU speed.

Syn. SRAM Leadoff Tim.: It is used to control the leadoff cycle timing of the synchronous SRAM type cache. The option are "3 Ck" and "4 Ck", and the optimum setting is "3 Ck".

EDO CAS Pulse Width, EDO CAS Precharge Time, EDO MDLE Timing, EDO BRDY# Timing, EDO RAS Precharge Timing: All of these options are used to control the EDO timing. The default settings for these options are

	Default Setting
EDO CAS Precharge Time	1 Ck
EDO MDLE Timing	1 Ck
EDO BRDY# Timing	1 Ck

The setting of "EDO CAS Pulse Width", "EDO CAS Precharge time", and "EDO RAS Precharge Timing" depend on the CPU clock speed, the followings are the optimum settings:

CPU Speed	EDO CAS Pulse Width	EDO CAS Precharge Time	EDO RAS Precharge Timing
75MHz	R1 W2 Ck	1 Ck	3 Ck
90MHz or above	R1 W2 Ck	2 Ck	4 Ck

EDO RAMW# Power Saving: It is used to enable or disable the power saving mode when the EDO bank is being accessed.

ISA Bus Clock Frequency: It is used to select the bus clock for the ISA bus. The available options are "7.159MHz", "CPUCLK/4" and "CPUCLK/3".

CPU Speed	ISA Bus Clock Frequency
75MHz	CPUCLK/3
Other than 75MHz	CPUCLK/4

Slow Refresh (1:4): To enable this function will allow the DRAM refresh in a slower rate.

Video BIOS Cacheable: It is used to enable or disable the Video BIOS being cacheable.

Memory Hole At 15M-16M: To enable this function will allow the VGA controller to rung larger frame port.

CPU-PCI Post Write Rate: This option is used to control the timing of the CPU to PCI Post Write buffer. The available option is "3 Ck" and "4 Ck", and the default value is "4 Ck".

VGA Share Memory Size: If external VGA card is installed, this option will not be shown. It is used to select the video ram size shared with the system memory, the available options are "0.5MB", "1MB", "1.5MB" and "2MB".

VGA Memory Clock (MHz): If external VGA card is installed, this option will not be shown. It is used to select the VGA memory clock frequency of the on-board graphics controller used. The available frequency ranges from 40MHz to 70MHz. The default value is 55MHz.

Linear Mode SRAM Support: This option is shown only when Cyrix 6x86 is used. If Cyrix 6x86 is installed, this option is recommended as "Enabled" and JP7 should be shorted.

Latency for CPU-PCI: It is used to control the latency of the CPU to PCI cycle. The available optionis "1 Ck" and "2 Ck", and the default value is "2 Ck".

CPU-PCI Burst Menu Write: It is used to enable or disable the CPU to PCI Burst Memory Write.

CPU-PCI Post Memu Write: It is used to enable or disable the CPU-PCI Post Memory Write.

5.5 POWER MANAGEMENT SETUP MENU

The Power Management Setup option is used to change the values of the chipset registers for system power management functions.

ROM PCI/ISA BIOS (2A5IFG3A)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management	: User Define	VGA Activity	: Enabled
PM Control by APM	: Yes	IRQ3 (COM 2)	: Enabled
Video Off Option	: Suspend- >Off	IRQ4 (COM 1)	: Enabled
Video off Mehtod	: V/H SYNC+Blank	IRQ5 (LPT 2)	: Enabled
Suspend Switch	: Enabled	IRQ6 (Floppy Disk)	: Enabled
MODEM Use IRQ	: 3	IRQ7 (LPT 1)	: Enabled
		IRQ8 (RTC Alarm)	: Disabled
PM Timers		IRQ9 (IRQ2 Redir)	: Enabled
HDD Off After	: Disabled	IRQ10 (Reserved)	: Enabled
Suspend Mode	: Disabled	IRQ11 (Reserved)	: Enabled
		IRQ12 (PS/2 Mouse)	: Enabled
PM Events		IRQ13 (Coprocessor)	: Enabled
COM Ports Activity	: Enabled	IRQ14 (Hard Disk)	: Enabled
LPT Ports Activity	: Enabled	IRQ15 (Reserved)	: Enabled
HDD Ports Activity	: Enabled		
PCI/ISA Master Act.	: Enabled		
IRQ1-15 Activity	: Enabled		

ESC: Quit ? ?? ? : Select Item
F1: Help PU/PD/+/-: Modify
F5: Old Values (Shift)F2: Color
F7: Load Setup Defaults

A short description of the screen items follows:

Power Management: Available selection are "Disabled", "User Define", "Max Saving" and "Min Saving":
"Disabled" will disable all the power saving functions.
"User Define" makes the time period waiting for Suspend Mode to be programmed.
"Max Saving" will set the time period waiting for Suspend Mode to be 20 seconds.
"Min Saving" will set the time period waiting for Suspend Mode to be 40 minutes.

PM Control by APM: Available options are "Yes" and "No". To choose "Yes" to let the Power Management Function to be control by the MS APM software.

Video Off Option: Available options are "Suspend->Off" and "Always On". To choose "Suspend->Off" option will make the video off during the Suspend Mode. "Always On" will keep the video on for all the modes.

Video Off Method: Choose V/H SYNC+Blank, DPMS or Blank Screen. This is monitor Power Saving Method. V/H SYNC+Blank means turn off Vertical, Horizontal scanning and blank the screen. Blank Screen will blank the display screen. DPMS (Display Power Management System) can allow the System BIOS control the Display Card to turn off the Display.

Suspend Switch: It is used to enable or disable the function of the Green PC Break Switch - JP12.

MODEM Use IRQ: Available options are 3, 4, 5, 7, 9, 10, 11 and NA. It is used to choose the interrupt line that the Modem is used. "NA" means not available.

HDD Off After: To select the time period will turn the HDD off. Accessing the HDD again will take a few seconds for HDD to spin up for operation.

Suspend Mode: To set the time period waiting for Suspend Mode when the Power Management function is set to "User Define".

COM Ports Activity/LPT Ports Activity/HDD Ports Activity/PCI/ISA Master Act./IRQ1-15 Activity/VGA Activity: All of these functions are used to control the wake up event from the Suspend Mode. Once the function is enabled, the corresponded activity will trigger the system back to the Normal Mode from the Suspend Mode.

IRQ 3 - IRQ15: When it is enabled, the system will monitor the activity of the corresponded system IRQ to turn on or off the power management functions.

5.6 PnP/PCI CONFIGURATION

The PCI Configuration Setup option is used to configure the PCI add-on Cards on PCI Slots. Without proper setup the PCI Add-on Cards might not function properly.

ROM PCI/ISA BIOS (2A5IFG3A)
PNP/PCI CONFIGURATION
AWARD SOFTWARE, INC.

PNP OS Installed	: Yes	PCI IRQ Actived By	: Level
Resources Controlled By	: Manual	PCI IDE 2nd Channel	: Enabled
Reset Configuration Data	: Disabled	PCI IDE IRQ Map To	: PCI-AUTO
		Primary IDE INT#	: A
IRQ-3 assigned to	: Legacy ISA	Secondary IDE INT#	: B
IRQ-4 assigned to	: Legacy ISA	PCI Spec. Ver 2.1	: Enabled
IRQ-5 assigned to	: Legacy ISA		
IRQ-7 assigned to	: Legacy ISA		
IRQ-9 assigned to	: PCI/ISA PnP		
IRQ-10 assigned to	: PCI/ISA PnP		
IRQ-11 assigned to	: PCI/ISA PnP		
IRQ-12 assigned to	: PCI/ISA PnP		
IRQ-14 assigned to	: Legacy ISA		
IRQ-15 assigned to	: Legacy ISA		
DMA-0 assigned to	: PCI/ISA PnP	ESC: Quit ??? ? : Select Item	
DMA-1 assigned to	: PCI/ISA PnP	F1: Help PU/PD/+/-: Modify	
DMA-3 assigned to	: PCI/ISA PnP	F5: Old Values (Shift)F2: Color	
DMA-5 assigned to	: PCI/ISA PnP	F7: Load Setup Defaults	
DMA-6 assigned to	: PCI/ISA PnP		
DMA-7 assigned to	: PCI/ISA PnP		

Note: Change these Settings only if user is familiar with the Chipset and all the PCI Add-on Cards functions.

A short description of the screen items follows:

PNP OS Installed: Choose “Yes” to configure the BIOS that the Operating System installed support the Plug and Play standard.

Resources Controlled By: Available options are "Manual" and "Auto". If "Auto" is selected, the system BIOS will use the ESCD with the legacy information. If "Manual" is selected, the BIOS will not refer the ESCD for IRQ and DMA information. Instead, it will refer the items in the items in this setup menu for assigning IRQ and DMA.

Reset Configuration Data: If enable this option, the BIOS will clear and reset the ESCD after hardware reset.

IRQ#/DMA# assigned to: These items will be shown only when "Resources Controlled By" option is set the "Manual". The available options are "Legacy ISA: and "PCI/ISA PnP". If the option is set to "Legacy ISA", the BIOS will never assign the specified IRQ/DMA resource to PCI or ISA PnP Devices. If "PCI/ISA PnP" is chosen, the BIOS will make the specified IRQ/DMA have a chance to be assigned to the PCI or ISA PnP devices.

PCI IRQ Active By: Choose Level or Edge. The default settings is Level.

PCI IDE IRQ Map To: Choose PCI-AUTO, PCI-SLOT1, PCI-SLOT2, PCI-SLOT3, ISA. The default setting is PCI-AUTO.

PCI Spec. Ver 2.1: Choose Enabled or Disabled. To enable this option will make the PCI cycle following the PCI Speicification Version 2.1.

5.7 LOAD SETUP DEFAULTS MENU

This Main Menu item uses the default setup values. Use this option as a diagnostic aid if the system behaves erratically. Choose this item and the following message appears:

"Load SETUP Defaults (Y/N)? N"

To use the Power-On defaults, change the prompt to "Y" and press <Enter>.

5.8 INTEGRATED PERIPHERALS SETUP MENU

The Integrated Peripherals setup option is need to change the values of the I/O chipset registers for I/O functions.

ROM PCI/ISA BIOS (2A5IFG3A)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

Internal PCI/IDE	: Both
IDE Primary Master PIO	: Auto
IDE Primary Slave PIO	: Auto
IDE Secondary Master PIO	: Auto
IDE Secondary Slave PIO	: Auto
Primary IDE Prefetch	: Both
Secondary IDE Prefetch	: Both
IDE Burst Mode	: Disabled
IDE Post Write	: Enabled
IDE HDD Block Mode	: Enabled
Onboard FDD Controller	: Enabled
Onboard Serial Port 1	: Auto
Onboard Serial Port 2	: Auto
UART 2 Mode	: Standard
Onboard Parallel Port	: 378/IRQ7
Onboard Parallel Mode	: ECP
ECP Mode Use DMA	: 3

ESC: Quit ??? ? : Select Item
F1: Help PU/PD/+/-: Modify
F5: Old Values (Shift)F2: Color
F7: Load Setup Defaults

A short description of the screen items follows:

Internal PCI/IDE: Available selection are "Disabled", "Primary", "Secondary", "Both".
It is used to configure the built in PCI IDE controller.
"Disabled" will disable the internal PCI IDE controller.
"Primary" will configure the internal PCI IDE controller to enable the primary channel only.
"Secondary" will configure the internal PCI IDE controller to enable the secondary channel only.
"Both" will configure the internal PCI IDE controller to enable both the primary and secondary channels.

IDE Primary Master PIO/IDE Primary Slave PIO/IDE Secondary Master PIO/IDE Secondary Slave PIO: Available selection are "Auto", "Mode 0", "Mode 1", "Mode 2", "Mode 3" and "Mode 4". To choose "Auto", the system BIOS will scan the IDE device and decide which mode of the device is. Otherwise the user should key in the mode of the device to the corresponding field.

Primary IDE Prefetch/Secondary IDE Prefetch: It is used to enable or disable the prefetch buffer of the corresponding IDE channel.

IDE Burst Mode: It is used to enable or disable the IDE burst mode.

IDE Post Write: It is used to enabled or disabled the IDE post write buffer.

IDE HDD Block Mode: It is used to enable or disable the IDE harddisk block mode.

Onboard FDD Controller: It is used to enable or disable the on board floppy disk controller.

Onboard Serial Port 1: Available options are “Auto”, “COM4/2E8”, “COM3/3E8”, “COM1/3F8” and “Disabled”. It is used to configure the on board serial port 1 to different port address or disable it. Make proper selection to avoid address conflict with other I/O devices.

Onboard Serial Port 2: Available options are “Auto”, “COM3/3E8”, “COM4/2E8”, “COM2/2F8” and “Disabled”. It is used to configure the on board serial port 1 to different port address or disable it. Make proper selection to avoid address conflict with other I/O devices.

UART 2 Mode: It is used to select the operating mode of on board serial port 2. Choose Standard for RS232 serial Interface; ASKIR and HIPSIR for IrDA serial Interface.

IR Function Duplex: This item will be shown only when **UART 2 Mode** is selected to ASKIR or HPSIR. The available options are “Full” and “Half”. It is used to choose the IR function working in full duplex mode or half duplex mode correspondingly.

RxD, TxD Active: This item will be shown only when **UART 2 Mode** is selected to ASKIR or HPSIR. The available options are “Hi, Hi”, “Hi, Lo”, “Lo, Hi” and “Lo, Lo”. It is used to configure the logic level of Receive and Transmit signal in IrDA interface.

Onboard Parallel Port: Available options are "3BCH/IRQ7", "278/IRQ5", "378H/IRQ7" and "Disabled". It is used to configure the on board parallel port to different port address and IRQ or disable it. Make proper selection to avoid address and IRQ conflict with other I/O devices.

Onboard Parallel Mode: Available options are “SPP”, “EPP/SPP”, “ECP” and “ECP/EPP”. It is used to configure the on board parallel port to "Standard Printer Port Mode", "Enable Parallel Mode" or "Extended Capabilities Port Mode. Make proper selection with the attached printer port device.

ECP Mode Use DMA: Choose “1” or “3” to select the DMA channel used for the ECP device. This item is shown if the **Onboard Parallel Mode** is chosen as “ECP” or “ECP/EPP” option.

Parallel Port EPP Type: Choose “EPP1.7” or “EPP1.9”, which is used to configure the EPP using either EPP1.7 or 1.9 timing specification. This item is shown if the **Parallel Mode** is chosen as “EPP” or “ECP/EPP” option.

5.9 SUPERVISOR PASSWORD

Two level of password is supported. Depending on the setting of the "Security Option" in the "BIOS FEATURES SETUP", the system BIOS will ask for password every time booting up the System or entering BIOS Setup. With the supervisor password, both the system booting and BIOS setup changing is allowed.

This main menu item lets the user to set up the Supervisor Password. Change the password as follows:

1. Choose "PASSWORD SETTING" in the Main Menu and press <Enter>. The following message appears:

   "ENTER PASSWORD:"

2. Enter the Password and press <Enter>. The following message appears:

   "CONFIRM PASSWORD:"

Important: *Keep a safe record of the new password. If forget or lose the password, the only way to access the system is to disconnect the CMOS batteries and then re-enter the password.*

5.10 USER PASSWORD

With the user password, only booting up the system is accepted, but changing the BIOS setup is not allowed.

5.11 IDE HDD AUTO DETECTION

When users can not find the Hard Disk information, it is very helpful to use this option.

1. Choose this item and press <Enter>.

2. After couple seconds, the screen will appear the Hard Disk information and following message:

   "SELECT PRIMARY MASTER OPTION(N=SKIP): N"

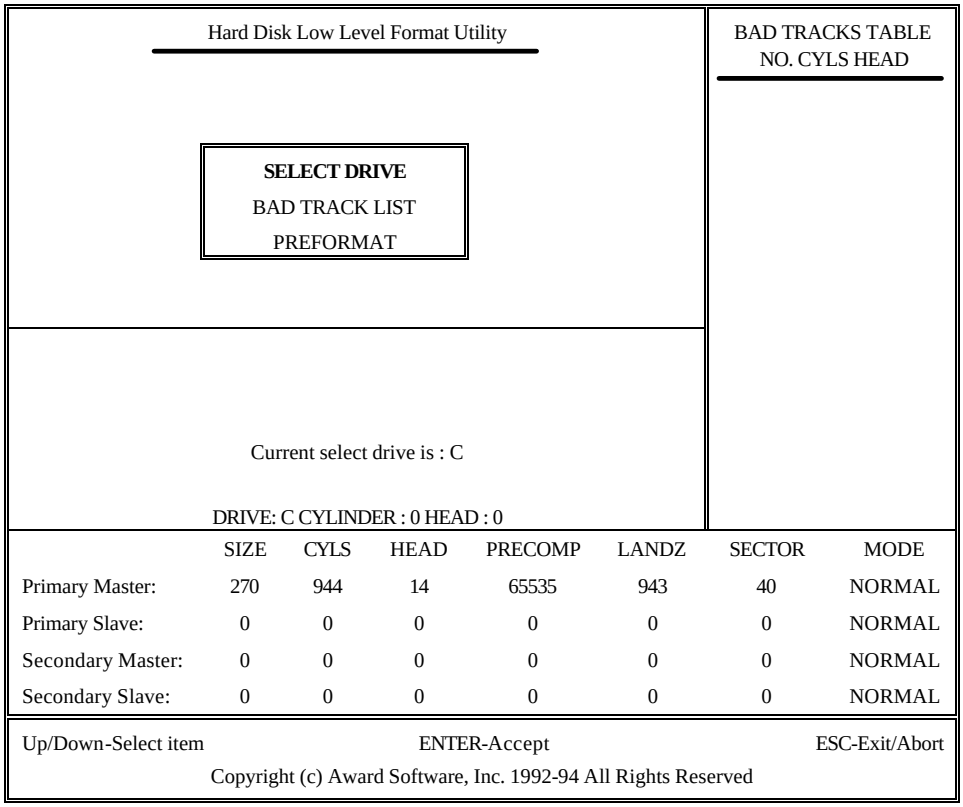
3. Enter Y or N to confirm the acceptance then enter.

4. The process will repeat for Primary Slave, Secondary Master and Secondary Slave Hard Disks.

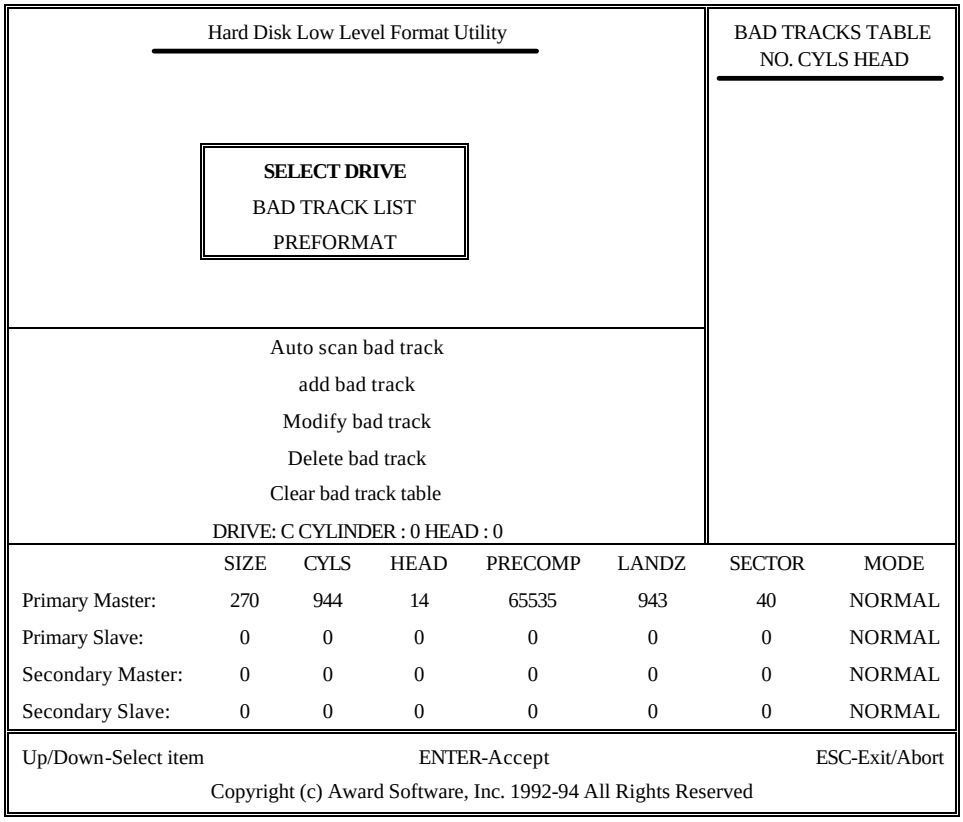
5.12 HDD LOW LEVEL FORMAT MENU

Three utilities are provided in the HDD Low Level Format menu:

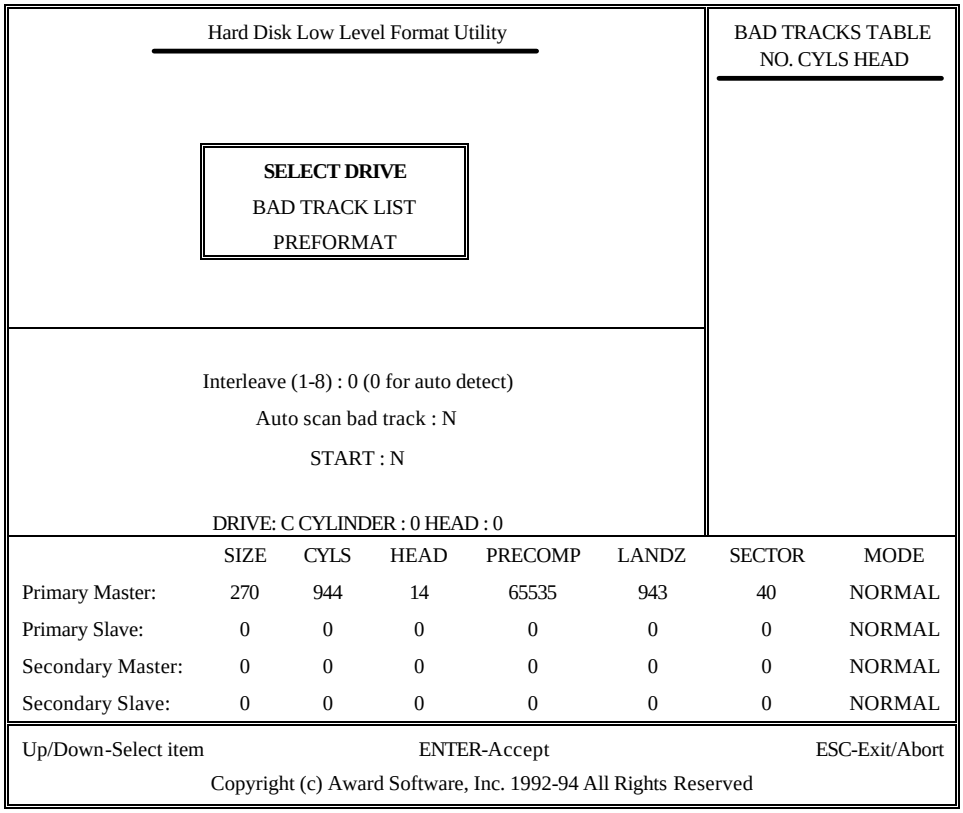
(1) SELECT DRIVE
(2) BAD TRACK LIST
(3) PREFORMAT



Setup Screen shown when "SELECT DRIVE" option is selected



Setup Screen shown when "BAD TRACK LIST" option is selected



Setup Screen shown when "PREFORMAT" option is selected

5.13 SCSI HARD DISK INSTALLATION

In Standard CMOS Setup Utility, select hard disk type to be "Not Installed". In Advanced CMOS Setup Utility, Disable "Adapter ROM Shadow DC00". On the SCSI Controller card, set the jumpers which configure the SCSI card BIOS segment address located at DC00 or DE00. Format the SCSI disk by the Formatter provided in the SCSI BIOS.

5.14 SAVE & EXIT SETUP MENU

When you select this function, the following message will appear at the centre of the screen to assist you to Save data to CMOS and Exit the Setup.

Save to CMOS and Exit (Y/N)?

5.15 EXIT WITHOUT SAVING MENU

When you select this function, the following message will appear at the centre of the screen to assist you to Abandon all Data and Exit Setup.

Quit Without Saving (Y/N)?