TABLE OF CONTENT

Chapter 1

1-1 Preface

Thank you for chosen BX2000/BX2100 mainboard. This is a multifunction mainboard with most flexibility you can find in today's computer market. The mainboard integrates both Intel Pentium®II / Pentium®III & Celeron™(Slot 1 & Socket 370) processor interface into a compact PC/AT compatible system along with 3D Stereo Sound System audio chip. Moreover, this mainboard allows you conditionally approach 133MHz * of Front Side Bus Frequency.

1-2 Feature of BX2000/BX2100

The BX2000/BX2100 are design for the PC user who wants highest possible quality and value in a small package. This mainboard include following main features：

1-2-1 Overview

- **Support both Slot 1 & Socket 370 CPU interface (You can only use one CPU interface at a time).**

- **Support Ultra DMA 66 for newer hard disk interface.**

- **Support Jump-less solution for setting Front Side Bus Frequency (CPU Host Clock) and CPU ratio under CPU Host/PCI clock of CHIPSET FEATURES SETUP.**

- **Conditionally support 133MHz * of Front Side Bus Frequency. This function allow user select CPU Bus Frequency by the BIOS to approach Over-Clock possibility.**

- **Logo-DIY: Provide CBROM utility for user to create their own loge in the BIOS.**

- **Built in high quality PCI-Based HRTF 3D Extension Positional Audio Chip (BX2100 only)**
  - Supports rear side speakers, C3DX positional audio in 4 channels speaker mode.
  - Professional digital audio interface to support 24-bit SPDIF IN and OUT (44.1K and 48K format).
  - HRTF-base 3D positional audio, supporting DirectSound™ 3D and Aural A3D™ interface.
  - Digital functions that capable to provide hi-fi stereo, Dolby, 3D surround effects, and playing MP3 music.

- **You can add our Optical kit (Optional) to connect any optical Input/Output device for super high quality sound transaction, such as playing & recording MD(Mini Disk)/CD; CD-ROM directly recording to MD; combine with DVD player to create a home theater system (This upgrade kit includes Optical Module, Optical Cable, and Software DVD Driver).**

1-2-2 Key Feature

- **Multi-Speed Support**：Provide 66/75*/83*/95*/100/112*/117*/124*/133*MHz Front Side Bus Frequency to support Intel Pentium®II / Pentium®III, Celeron processor for Slot1 interface or Intel Celeron PPGA on a ZIP Socket 370 interface.

- **VIA chipset**：VIA 82C693,82C596B AGPset with I/O subsystems.

- **DRAM Memory Support**：Support 3 x 168-pin DIMM sockets (3.3V) for memory from 8M Byte to 1.5GB Byte in either EDO (66MHz only) or SDRAM (66MHz/100MHz/133 MHz) type module with ECC or parity check.

- **AGP, ISA, and PCI expansion Slots：** Provide an AGP slot, one 16-bit ISA slot, and four 32-bit PCI master slots.
- **Super Multi-I/O:** Provides two high-Speed UART compatible serial ports and one parallel port with EPP and ECP capabilities. Two floppy drives of either 5.25" or 3.5" (1.44MB or 2.88MB) are also supported without an external card.
- **PCI Bus Master IDE Controller and ULTRA DMA 33/66：** On-board PCI Bus Master IDE controller with two connectors that supports four IDE devices in two channels, provides faster data transfer rates, and supports Enhanced IDE devices such as Tape Backup, CD-ROM, ZIP, LS-120 Drives. This controller also supports PIO Modes and Bus Master IDE Ultra DMA 33/66 Mbyte/Second.
- **ACPI supporting for OS Directed Power Management.**

  Ring-In Wake up: When Ring-In the system can wake up from SMI Mode.

  Ring-In Power On: When Ring-In the system can power on automatic by this function.

  RTC Power On: Enabled RTC Power On function, you can set RTC alarm to power on the system at the time length that correspond to your setting.

  Power Button: Press the button will place the system power on/off.

  Wake on LAN： The system can power on by server in Network.

  Support Software Power Off function.
- **Power Support:** Efficient PWM switching power instead of traditional Linear Voltage Regulator to prevent power component from being burned-out.
- **PC 99 ready**
- **PS/2 Mouse:** This mainboard support PS/2 mouse set.
- **USB Port Connector:** This mainboard supports two USB port connectors for USB devices.
- **Optional IrDA:** This mainboard supports an optional infrared port module for wireless interface, with independent 3rd UART (32-byte FIFO).
- **AGP:** Accelerated Graphics Port, for to 533MB/sec data transfer rate and 66/133MHz Bus clock to improve graphic functions.
- **ATX Form Factor:** Dimensions 30.5cm x 19cm.

* **Your memory module(s) must be PC133 compliant SDRAM chips and specified or marked as 8ns or 6ns.**

* **When you are running at 133MHz , make sure all of your PCI devices have enough tolerance to run on 44MHz . Otherwise, it may cause your system become very unstable.**

Chapter 2

Hardware Installation

2-1 Unpacking

This mainboard package should contain the following:

- The BX2000/BX2100 mainboard
- USER'S MANUAL for mainboard
- Cable set for Ultra DMA 66 IDE x1, Floppy x1
- CD for Drivers PACK

The mainboard contains sensitive electronic components that can be easily damaged by electron-static, so the mainboard should be left in its original packing until it is installed.

Unpacking and installation should be done on a grounded anti-static mat.

The operator should be wearing an anti static wristband, grounded at the same point as the anti-static mat.

Inspect the mainboard carton for obvious damage. Shipping and handling may cause damage to your board. Be sure there are no shipping and handling damages on the board before proceeding.

After opening the mainboard carton, extract the system board and place it only on a grounded anti-static surface component side up. Again inspect the board for damage.

Press down on the entire socket IC's to make sure that they are properly inserted. Do this only on with the board placed on a firm flat surface.

Warning: Do not apply power to the board if it has been damaged.

You are now ready to install your mainboard. The mounting hole pattern on the mainboard matches the ATX system board.

It is assumed that the chassis is designed for a standard ATX™ main board mounting. Place the chassis on the anti-static mat and remove the cover.

Take the plastic clips, Nylon stand-off and screws for mounting the system board, and keep them separate.
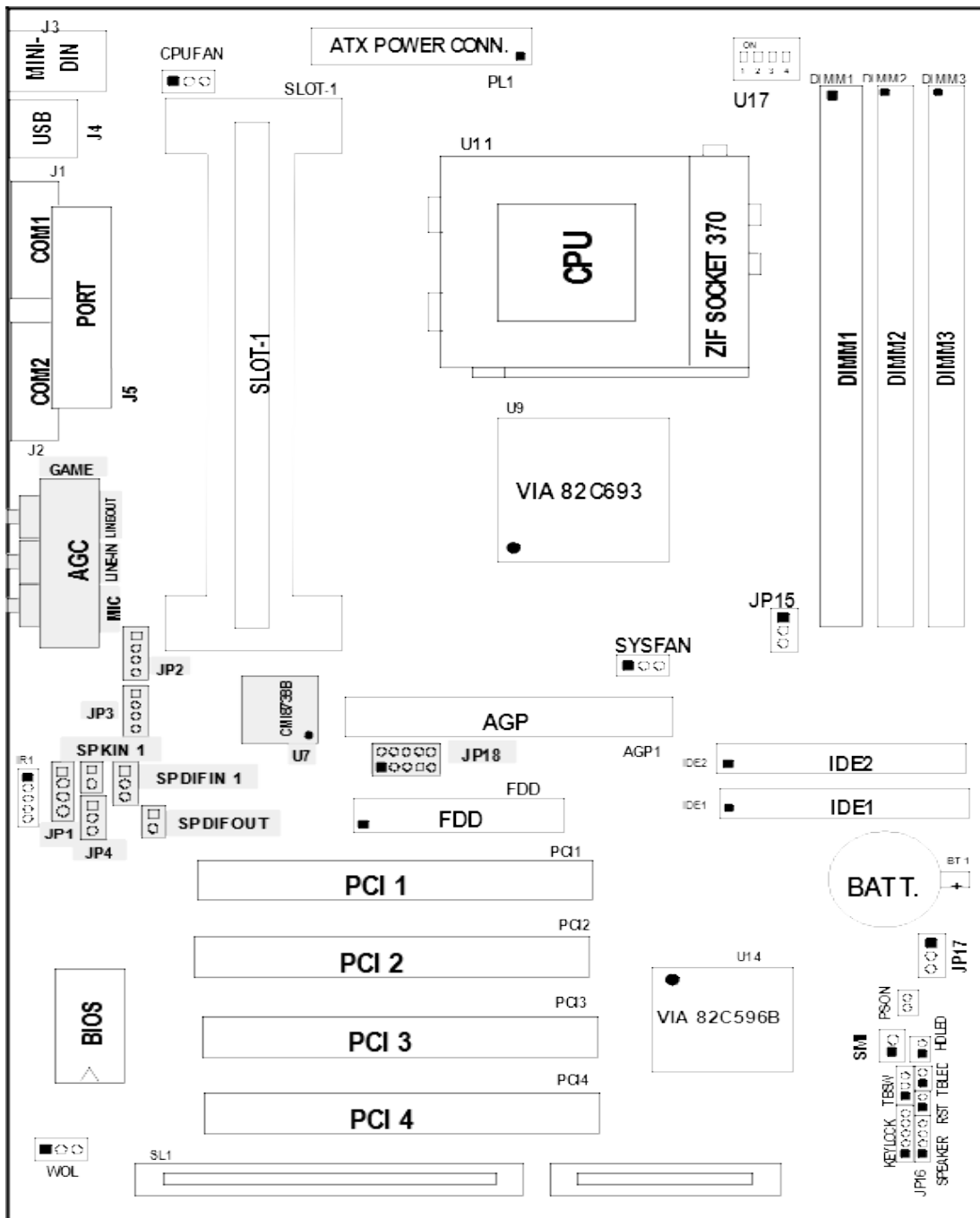
2-2 BX2100/ BX2000 Mainboard Diagram

Figure 2-2

▨ Only for BX2100 mainboard

2-3 Quick Reference for Jumpers, Connectors & Expansion Socket

Jumpers

Jumper	Name	Description	Page
JP15	CPU Bus Frequency Selection	Refer to page 6	p. 6
U17	CPU Ratio Selector	Refer to page 6	p. 6
JP17	CMOS RAM Clear	1-2 Normal ,2-3 Clear CMOS	p. 7

Connectors

Connector	Name	Description	Page
PL1	ATX Power Connector	20-Pin Block	p.9
MINI-DIN	PS/2 Keyboard/PS/2 Mouse	6-Pin Female	p.9
USB	USB Port Connector	5-Pin Connector	p.9
PRINT	Parallel Port Connector	26-Pin Female	p.9
COM1, COM2	Serial Port COMA , COMB	9-Pin Connector	p.10
FDD	Floppy Driver Connector	34-Pin Block	p.10
IDE1	Primary IDE Connector	40-Pin Block	p.10
IDE2	Secondary IDE Connector	40-Pin Block	p.11
HDLED	IDE activity LED	2-Pin Connector	p.11
SMI	SMI Suspend Switch	2-Pin Connector	p.11
JP16	Front Panel Connector	16-Pin Block	p.11
IR1	Infrared Module Connector	10-Pin Block	p.12
CPUFAN, SYSFAN	FAN Connector	Extra fanning system connectors	p.12
PS-ON	ATX power button/soft power button	2-Pin Connector	p.12
WOL	Wake On LAN	3-pin Block	P.12

Jumpers & Connectors for BX2100 only

Item number	Name	Description	Page
JP4	On-Board Sound Enable/Disable	1-2 : Disabled , 2-3 : Enabled	p.13
JP1	AUX IN	4-pin Block	p.13
JP2	CD-Audio	4-pin Block	p.13
JP3	CD-Audio	4-pin Block	p.13
AGC	Line IN/Line Out/MIC /Game Connector	15-pin Connector + 3 phone jack	p.13
SPKIN 1	PC Speaker In	2-pin Block	p.14
SPDIFIN 1	SPDIF (Sony/Philips Digital Interface) IN	3-pin Block	p.14
SPDIFOUT	SPDIF (Sony/Philips Digital Interface) OUT	2-pin Block	p.14
JP18	For Optional Optical Kit Connector	10-pin Connector	p.14

Expansion Sockets

| Socket/Slot	Name	Description
DIMM1,DIMM2, DIMM3	DIMM Module Socket	168-Pins DIMM SDRAM Module Expansion Socket
Slot1	CPU Slot	Pentium II/III CPU Slot
Zip Socket370	CPU Socket	Celeron PPGA CPU Socket
AGP SLOT	AGP SLOT	AGP Expansion Slot
PCI1, PCI2,PCI3 ,PCI4	PCI Slot	32-bit PCI Local Bus Expansion slots
SL1	ISA Slot	16-bit ISA Bus Expansion slot

2-4 Installation Steps

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

1. Set Jumpers on the Mainboard
2. Install the CPU
3. Install DRAM Modules
4. Install Expansion card
5. Connect Cables, Wires, and Power Supply

2-5 Jumper Settings

1. CPU Bus Frequency Selection : JP15
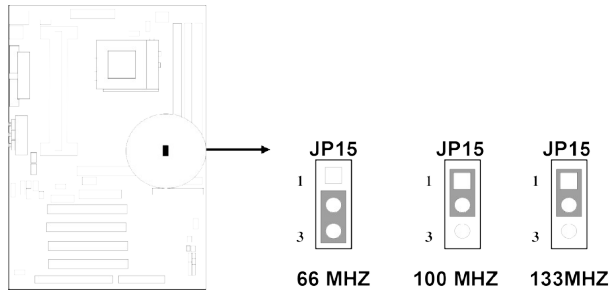
CPU External Frequency : JP15	
CPU	JP15
66MHz	2-3
100MHz	1-2
133MHz*	Control by BIOS

Your Memory must meet the requirement to run on 133MHz the condition.

※ **Users also can setting the CPU Bus frequency in the "CPU Host/PCI clock" in CHIPSET FEATURES SETUP.(Please refer to page 18)**

2. CPU Ratio Selector : U17

Ratio	1	2	3	4
2.0x	ON	ON	ON	ON
2.5x	OFF	ON	ON	ON
3.0x	ON	OFF	ON	ON
3.5x	OFF	OFF	ON	ON
4.0x	ON	ON	OFF	ON
4.5x	OFF	ON	OFF	ON
5.0x	ON	OFF	OFF	ON

Ratio	1	2	3	4
5.5x	OFF	OFF	OFF	ON
6.0x	ON	ON	ON	OFF
6.5x	OFF	ON	ON	OFF
7.0x	ON	OFF	ON	OFF
7.5x	OFF	OFF	ON	OFF
8.0x	ON	ON	OFF	OFF

Table for the Pentium II/III and Celeron (Slot 1 and Socket 370) CPU

CPU Type	CPU BUS Clock	Ratio	CPU Frequency
Pentium II 266 , Celeron-266	66 MHz	4.0X	266 MHz
Pentium II 300 , Celeron-300/300A	66 MHz	4.5X	300 MHz
Pentium II 333 , Celeron-333	66 MHz	5.0X	333 MHz
Celeron-366	66 MHz	5.5X	366 MHz
Celeron-400	66 MHz	6.0X	400 MHz
Celeron-433	66 MHz	6.5X	433 MHz
Celeron-466	66 MHz	7.0X	466 MHz
Celeron-500	66 MHz	7.5X	500 MHz
Pentium II 350	100 MHz	3.5X	350 MHz
Pentium II 400	100 MHz	4.0X	400 MHz
Pentium II 450, Pentium III 450	100 MHz	4.5X	450 MHz
Pentium III 500	100 MHz	5.0X	500 MHz
Pentium III 550	100 MHz	5.5X	550 MHz
Pentium III 600	100 MHz	6.0X	600 MHz
Pentium III 533	133 MHz	4.0X	533 MHz

2. CMOS RAM Clear: JP17 (Yellow color selector)

WARNING: Make sure your computer is POWER OFF when you CLEAR CMOS.

Connect a jumper Cap over this jumper for a few seconds, will clears information stored in the CMOS RAM Chip that input by user, such as hard disk information and passwords. After CLEAR CMOS, you must enter the BIOS setup (by holding down <DEL> during power-up) to re-enter BIOS information (see BIOS SETUP).

Selections	**JP17**	
Normal	1-2	(Default)
Clear CMOS	2-3	(momentarily)

CMOS RAM (Normal / Clear CMOS Data)
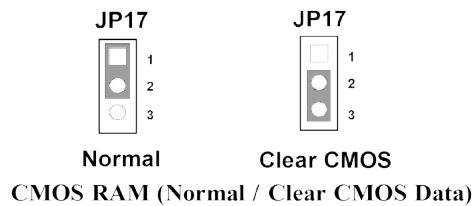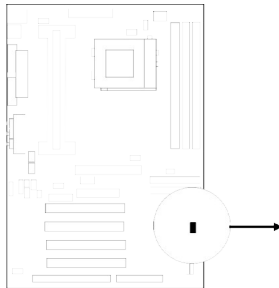
2-6 System Memory (DRAM)

This mainboard supports two 168-pins DIMM modules, the Max Memory Size is 768MB.

| DIMM 1	DIMM 2	DIMM 3	System can be Accept or Not
168-pin DIMM	x	x	Accept
168-pin DIMM	168-pin DIMM	x	Accept
168-pin DIMM	168-pin DIMM	168-pin DIMM	Accept

2-7   Central Processing Unit (CPU)

2-7-1 The mainboard provides a Slot-1 for Pentium II/III processor. The CPU on board must have a fan or heat sink attached to prevent overheating.

WARNING: Without a fan or heat sink, the CPU will overheat and cause damage to both the CPU and the mainboard.

To install a CPU, first turn off your system and remove its cover. Locate the Slot- 1 and place RETENTION MODULE as following:

1. Attach heat sink to the CPU.

2. Place Part A on Slot-1 and gently screw four corners on top of the main- board.

PART A
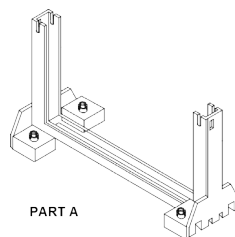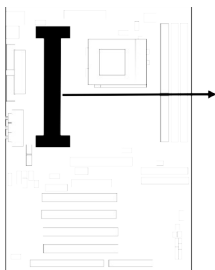
2-7-2 The mainboard also provides a 370-pin ZIF Socket 370. The CPU on mainboard must have a fan attached to prevent overheating.

To install a CPU, first turn off your system and remove its cover. Locate the ZIF Socket and open it by first pulling the lever sideways away from the socket then upwards to a 90-degree right angle. Insert the CPU with the white dot as your guide. The white dot should point towards the end of the level. The CPU has a corner pin for three of the four corners, the CPU will only fit in the one orientation as shown as follow. With the added weight of the CPU fan, no force is required to insert the CPU. Once completely inserted, hold down on the fan and close the Socket's lever.

> *IMPORTANT:* *You can setting the CPU ratio and Host Frequency in the BIOS setup on page 18*

CPU ZIF Socket 370
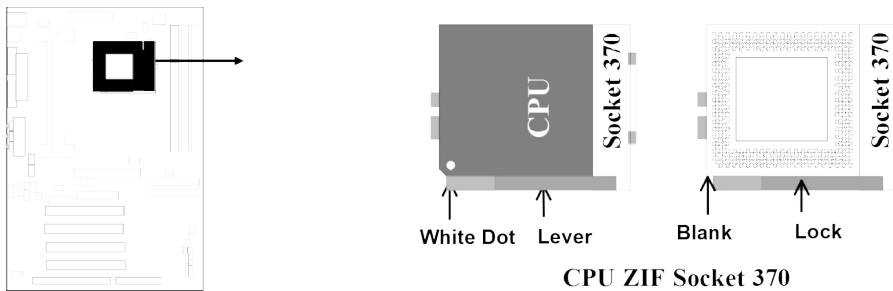
2-8 Expansion Cards

You must read the documentation come with expansion card for any hardware or software settings that may be required to setup your specific card.

Installation Procedure:

1. Read the documentation from your expansion card.
2. Set any necessary jumpers on your expansion card.
3. Remove your computer's cover.
4. Remove the bracket on the slot you intend to use.
5. Carefully align the card's connectors and press firmly.
6. Secure the card on the slot with the screw you remove in step 4.
7. Replace the computer's cover.
8. Setup the BIOS if necessary.
9. Install the necessary software drivers for your expansion card.

Assigning IRQs for Expansion Cards

Some expansion cards may require an IRQ to operate. Generally an IRQ must be exclusively assigned to only one device. In an standard design there are 16 IRQs available but most of them are occupied by the system and leaves 6 free for expansion cards.

With most recent device, the BIOS automatically assign an IRQ number to PCI expansion cards. Please make sure there are no any of two devices use same IRQs, otherwise your computer may experience some problems when those two devices are in use at the same time.

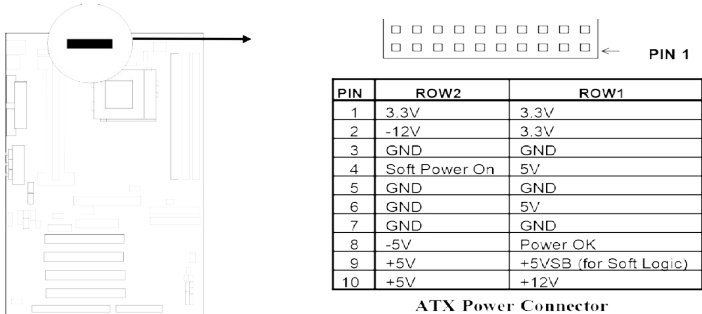**Assigning DMA Channels for Expansion Cards**

Some devices may also need to use a DMA (Direct Memory Access) channel. DMA assignments for this mainboard are handled the same way as the IRQ assignment process described above. You can select a DMA channel in the PCI and PnP configuration section of the BIOS Setup utility.

2-9 External Connectors

1. **Power Connector: ATX Power Connector (20-pin block): PL1**

ATX Power Supply connector. This is a new defined 20-pins connector that usually comes with ATX case. The ATX Power Supply allows to use soft power on momentary switch that connect from the front panel switch to 2-pins Power On jumper pole on the mainboard. When the power switch on the back of the ATX power supply turned on, the full power will not come into the system board until the front panel switch is momentarily pressed. Press this switch again will turn off the power to the system board.

PIN	ROW2	ROW1
1	3.3V	3.3V
2	-12V	3.3V
3	GND	GND
4	Soft Power On	5V
5	GND	GND
6	GND	5V
7	GND	GND
8	-5V	Power OK
9	+5V	+5VSB (for Soft Logic)
10	+5V	+12V

ATX Power Connector

2. PS/2 Mouse & PS/2 Keyboard Connector: MINI-DIN

The connectors for PS/2 keyboard and PS/2 Mouse.

-> **PS/2 Mouse**

-> **PS/2   Keyboard**
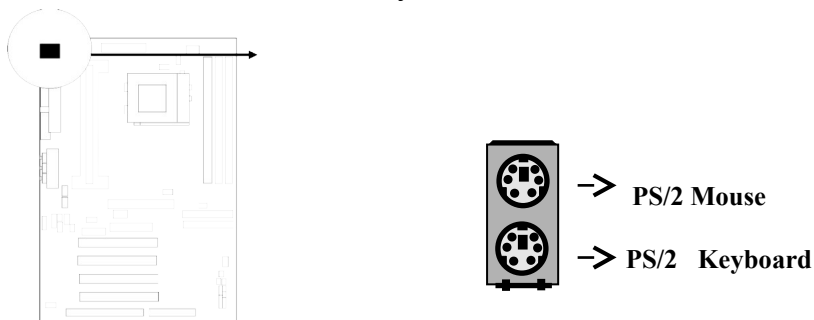
3. USB Port connector: USB

The connectors are 4-pins connector that connect USB devices to the system board.

USB
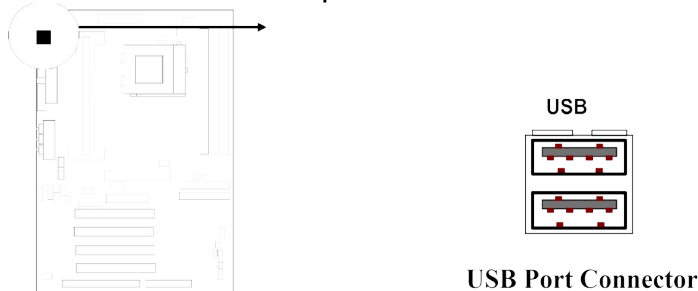
USB Port Connector

4. Parallel Port Connector (25-pin female): PRINT

Parallel Port connector is a 25-pin D-Subminiature Receptacle connector. The On-board Parallel Port can be disabled through the BIOS SETUP. Please refer to Chapter 3 "INTEGRATED PERIPHERALS SETUP" section for more detail information.

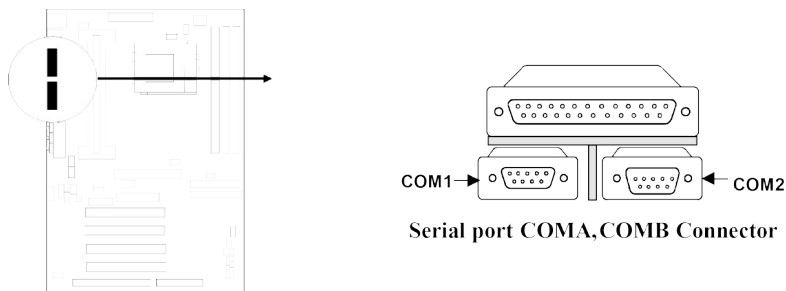Parallel Port Connector ◄
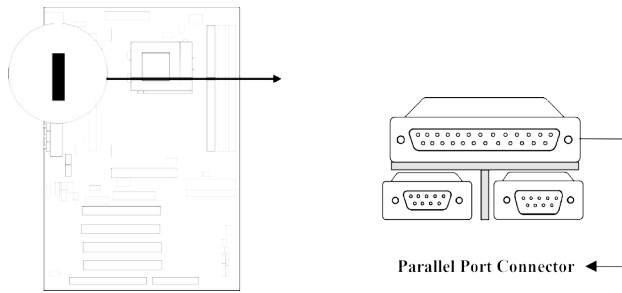
5. Serial Port COMA, COMB: COM1, COM2

COMA is the 9-pin D-Subminiature mail connector. The On-board serial port can be disabled through BIOS SETUP. Please refer to Chapter 3 "INTEGRATED PERIPHERALS SETUP" section for more detail information.

COM1 ►   ◄ COM2

Serial port COMA,COMB Connector

6. Floppy drive Connector (34-pin block): FDD

This connector supports the provided floppy drive ribbon cable. After connecting the single plug end to mainboard, connect the two plugs at other end to the floppy drives.

Pin 1

Floppy drive Connector
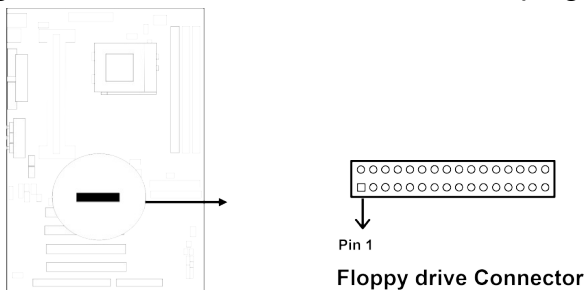
7. Primary IDE Connector (40-pin block): IDE1

This connector supports the provided IDE hard disk ribbon cable. After connecting the single plug end to mainboard, connect the two plugs at other end to your hard disk(s). If you install two hard disks, you must configure the second drive to Slave mode by setting its jumpers accordingly. Please refer to the documentation of your hard disk for the jumper settings.

Pin 1

Secondary IDE Connector
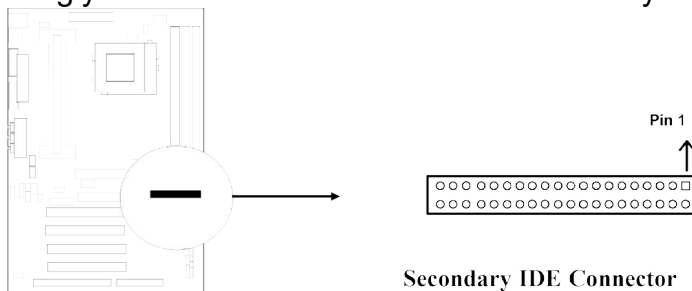
8. Secondary IDE Connector (40-pin block): IDE2

This connector connects to the next set of Master and Slave hard disks. Follow the same procedure described for the primary IDE connector. You may also configure two hard disks to be both Masters using one ribbon cable on the primary IDE connector and another ribbon cable on the secondary IDE connector.

Pin 1

Secondary IDE Connector
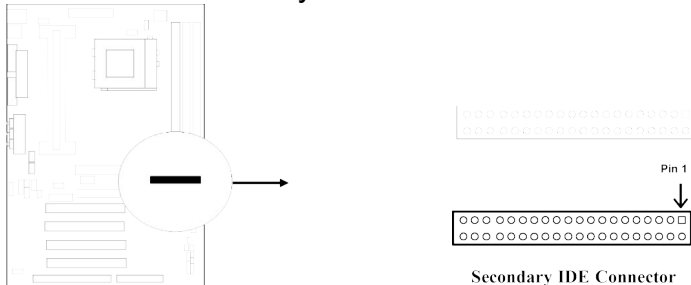
9. IDE activity LED: HDLED

This connector connects to the hard disk activity indicator light on the case.

HDLED

IDE (Hard Drive) LED
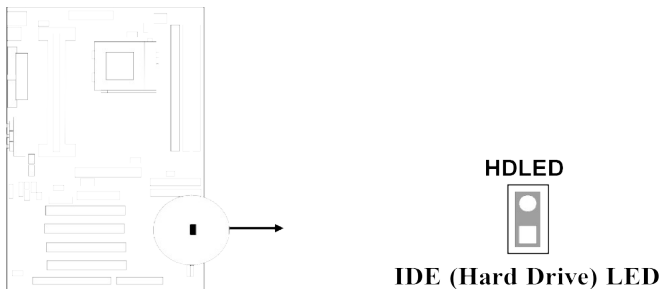
10. SMI Switch : SMI

If your case has Suspend switch , you may connect the cable to this connector in order to have Suspend mode control from your case.

SMI

SMI Switch
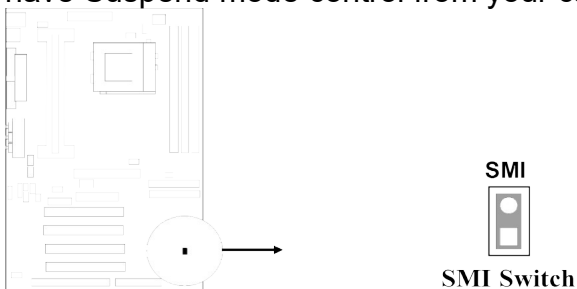
11. Turbo LED switch: TBLED

The mainboard's turbo function is always on. The turbo LED will remain constantly lit while the system power is on. You may wish to connect the Power LED from the system case to this lead. See the figure below.

12. Reset switch lead: RST

This 2-pin connector connects to the case-mounted reset switch for rebooting your computer without having to turn off your power switch. This is a preferred method of rebooting in order to prolong the life of the system's power supply. See the figure below.

13. Keyboard lock switch lead: KEYLOCK

This 5-pin connector connects to the case-mounted key switch for locking the keyboard for security purposes. See the figure below.

14. Speaker connector: SPEAKER
This 4-pins connector connects to the case-mounted speaker. See the figure below.

System Case Connections
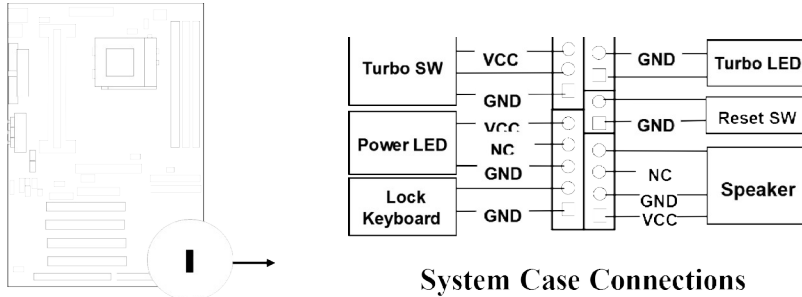
15. IR infrared module connector: IR1
This connector supports the optional wireless transmitting and receiving infrared module. This module mounts to small opening on system cases that support this feature you must also configure the setting through BIOS setup. Use the four pins as shown on the Back View and connect a ribbon cable from the module to the mainboard according to the pin definitions.

IR Infrared Module Connector
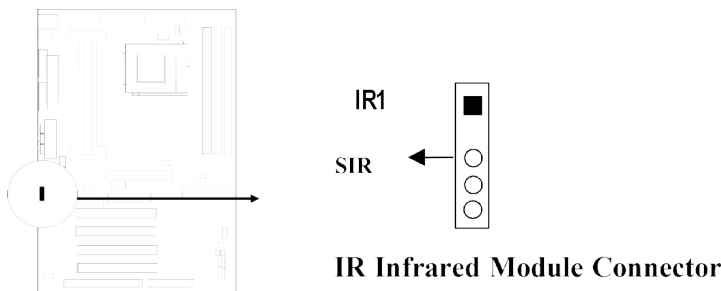
16. FAN connector: CPUFAN , SYSFAN
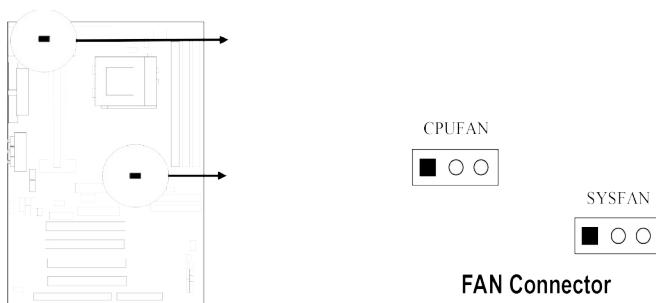
FAN Connector

17. Power-On button connector: PS-ON

Power-On button connector
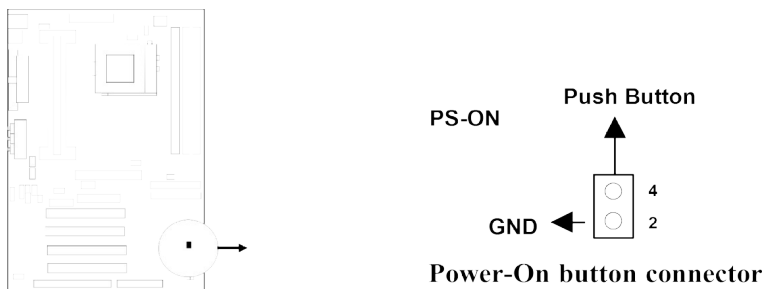
18. Wake On Lan connector: WOL

WOL

■ ○ ○

·5VSB GND WON
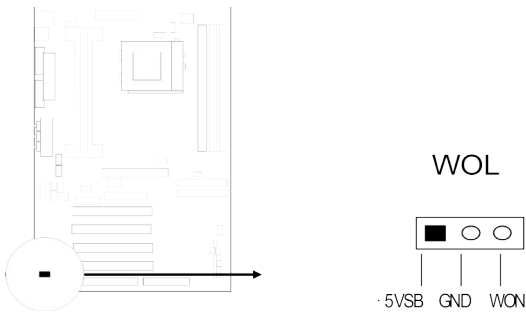
※ Wake On LAN Function worked only when power supply support 5VSB more than 750mA current.

Jumpers & Connectors for BX2100 ONLY

19. On Board Audio chip Enabled / Disabled connector: JP4

1 ■
  ○   JP4   ■ 1
3 ○   ○
                      ○ 3

2-3 closed: Enabled   **1-2 closed: Disabled**
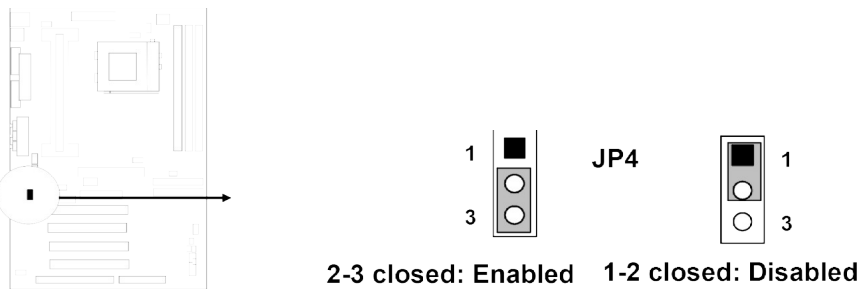
20. Auxiliary Input connector: JP1

■
○
○
○

JP1
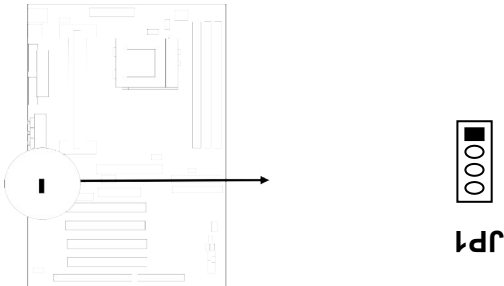
21. CD Audio in connector : JP2,JP3

JP2 and JP3 are the connectors for CD-Audio Input signal, Please connect it to CD-ROM CD-Audio output connector

JP2

■
○
○
○

JP3

■
○
○
○

JP2 :CD-Adio/Panasonic   **JP3 :CD-Audio/Sony**
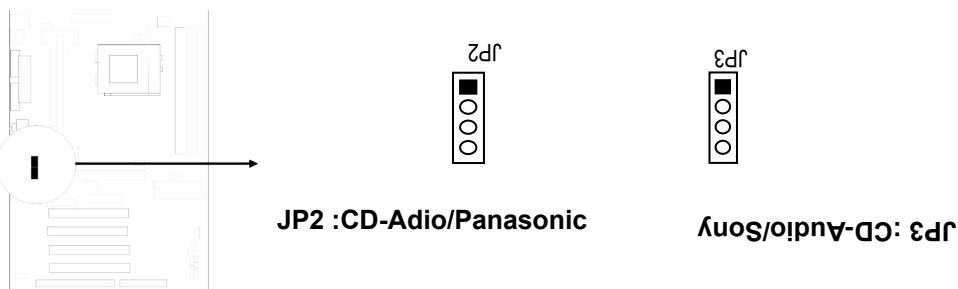
22. Audio and Game Connector : AGC

This Connector are 3 phone Jack for LINE-OUT,LINE-IN,MIC and a 15-pin
D-Subminiature Receptacle Connector for joystick/MIDI Device.
Line-out : audio output to speaker
Line-in : audio input to sound chip *(Please plug here for second pair speakers as output channels when use 4 speakers)*

MIC : Microphone Connector
Game/MIDI : for joystick or MIDI Device

Game / MIDI PORT

LINE-OUT   LINE-IN   MIC

Audio and Game Connector
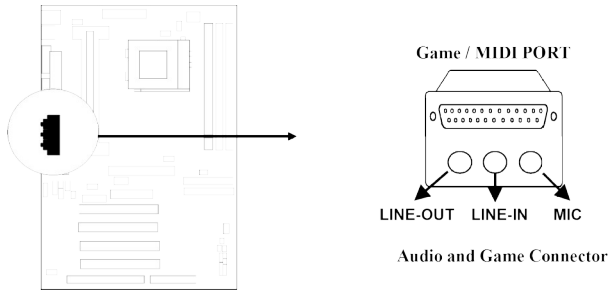
23. PC Speaker signal Input connector: SPKIN 1

SPKIN 1
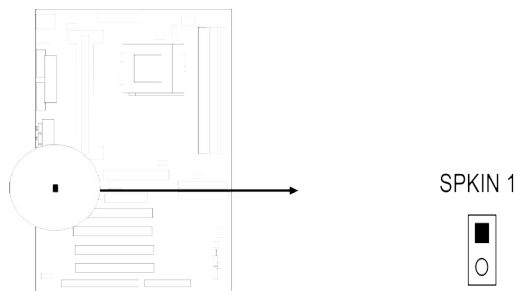
24. SPDIF (Sony / Philips Digital Interface) Input / Output Connectors: SPDIFIN 1 / SPDIFOUT

+5V

SPDIFIN

GND

SPDIFIN 1

SPDIFOUT

GND
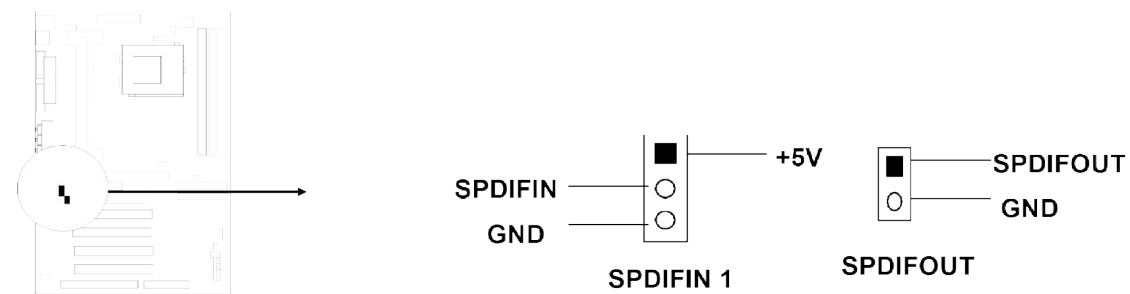
SPDIFOUT

25. Optical kit connector: JP18

This connector is for user that has Optical kit(optional) to provide other set of SPDIF INPUT and SPDIF OUTPUT function.

JP18

2   10

1   9

Optical kit Connector
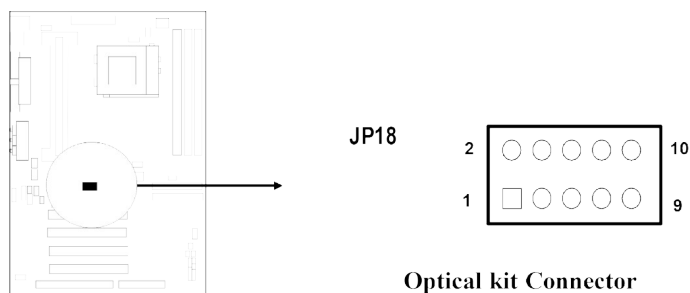
Chapter 3

AWARD BIOS SETUP

This mainboard has previously set to its best stable status. If you are not an experienced user, please do not change the default setting. When you are encounter any problem, please choice "LOAD STANDARD DEFAULTS" to restore best setting.

Award's ROM BIOS provides a built-in Setup program which allows user modify the basic system configuration and hardware parameters. The modified data will be stored in a battery-backed CMOS RAM so data will be retained even when the power is turned off. In general, the information saved in the CMOS RAM stay unchanged unless here is configuration change in the system, such as hard drive replacement or new equipment is installed.

It is possible that CMOS had a battery failure which cause data lose in CMOS_RAM. If so, re-enter system configuration parameters become necessary.

To enter Setup Program

Power on the computer and press **<Del>** key immediately will bring you into BIOS **CMOS SETUP UTILITY**.

ROM PCI/ISA BIOS (2A6LGJ1F)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	**INTEGRATED PERIPHERALS**
BIOS FEATURES SETUP	**SUPERVISOR PASSWORD**
CHIPSET FEATURES SETUP	**USER PASSWORD**
POWER MANAGEMENT SETUP	**SAVE & EXIT SETUP**
PNP/PCI CONFIGURATION	**EXIT WITHOUT SAVING**
LOAD OPTIMAL DEFAULTS	
LOAD STANDARD DEFAULTS	

Esc : QUIT   ↑↓ → ← **: Select Item**
F10 : Save & Exit Setup   **(Shift) F2 : Change Color**

Time, Date, Hard Disk Type…

Figure 3-1

The menu displays all the major selection items and allow user to select any one of shown item. The selection is made by moving cursor (press any direction key) to the item and press <Enter> key. An on_line help message is displayed at the bottom of the screen as cursor is moving to various items which provides user better understanding of each function. When a selection is made, the menu of selected item will appear so the user can modify associated configuration parameters.

3-1 STANDARD CMOS SETUP

STANDARD CMOS SETUP (Figure 3-1) allows user to configure system setting such as current date and time, type of hard disk drive installed in the system, floppy drive type, and the type of display monitor. Memory size is auto-detected by the BIOS and displayed for your reference. When a field is highlighted (direction keys to move cursor and <Enter> key to select), the entries in the field will be changed by pressing <PgDn> or <PgUp> keys or user can enter new data directly from the keyboard.

```
ROM PCI/ISA BIOS (2A6LGJ1F)
                    STANDARD CMOS SETUP
                    AWARD SOFTWARE, INC.

 Date (mm:dd:yy) : Wed, Sep, 10 1997
 Time (hh:mm:ss) : 10 : 33 : 52

 HARD DISKS      TYPE  SIZE  CYLS  HEAD  PRECOMP  LANDZ  SECTOR  MODE
 Primary Master  : Auto   0    0    0      0     0     0  Auto
 Primary Slave   : Auto   0    0    0      0     0     0  Auto
 Secondary Master : Auto  0    0    0      0     0     0  Auto
 Secondary Slave  : Auto  0    0    0      0     0     0  Auto


 Drive A : 1.4M , 3.25 in.            Base  Memory :  640K
 Drive B : None                    Extended  Memory : 7168K
                                     Other  Memory :  384K
 Video  : EGA/VGA                  _____
 Halt On : All Errors                 Total Memory :  8192K


 Esc : Quit          ↑↓ → ← : Select Item      Pu/Pd/+/- : Modify

 F1  : Help          (Shift)F2: Change Color
```

Figure 3-2

NOTE: *If hard disk Primary Master/Slave and Secondary Master/Slave were   used Auto, than the hard disk size and model will be auto-detect on display during POST.*

NOTE: *The "Halt On:" field is to determine when to halt the system by the BIOS is error occurred during POST.*

3-2   BIOS FEATURES SETUP

Select the "**BIOS FEATURES SETUP**" option in the CMOS SETUP UTILITY menu allows user to change system related parameters in the displayed menu. This menu shows all of the

manufacturer's default values of this mainboard. Again, user can move the cursor by pressing direction keys and <PgDn> of <PgUp> keys to modify the parameters. Pressing [F1] key to display help message of the selected item.

This setup program also provide 2 convenient ways to load the default parameter data from BIOS [F6] or CMOS [F7] area if shown data is corrupted. This provides the system a capability to recover from any possible error.

```
          ROM PCI/ISA BIOS (2A6LGJ1F)
                 BIOS FEATURES SETUP
                 AWARD SOFTWARE, INC.
┌─────────────────────────────────────┬─────────────────────────────────────┐
│ Virus Warning        : Disabled     │ OS Select For DRAM > 64MB  : Non-OS2│
│ CPU Internal Cache   : Enabled      │ HDD S.M.A.R.T Capability  : Disabled│
│ External Cache       : Enabled      │ Video  BIOS Shadow      : Enabled   │
│ CPU L2 Cache ECC Checking : Enabled │ C8000-CBFFF Shadow      : Disabled  │
│ Processor Number Feature : Enabled  │ CC000-CFFFF Shadow      : Disabled  │
│ Quick Power On Self Test : Enabled  │ D0000-D3FFF Shadow      : Disabled  │
│ Boot Sequence        : A,C,SCSI     │ 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        │                                     │
│ IDE HDD Block Mode    : Enabled     │                                     │
│ Gate A20 Option       : Fast        │                                     │
│ Memory Parity/ECC Check  : Disabled │                                     │
│ Typematic Rate Setting  : Disabled  │                                     │
│ Typematic Rate (Chars/Sec) : 6      │                                     │
│ Typematic Delay (Msec)  : 250       │                                     │
│ Security Option       : Setup       │                                     │
│ PCI/VGA Palette Snoop  : Disabled   │                                     │
├─────────────────────────────────────┼─────────────────────────────────────┤
│ Esc: Quit   ↑↓ → ← : Select Item    │ F6 : Load Optimal Defaults          │
│ F1 : Help       PU/PD/+/-:Modify    │ F7 : Load Standard Defaults         │
│ F5 : Old Values   (Shift)F2 : Color │                                     │
└─────────────────────────────────────┴─────────────────────────────────────┘
```

Figure 3-2

NOTE: **The Security Option contains "setup" and "system". The "setup" indicates that the password setting is for CMOS only while the "system" indicates the password setting is for both CMOS and system boot up procedure.**

- **Security Option:** This category allows you to limit access to the system and Setup, or just to Setup. The default value is Setup.
  System: The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
  Setup: The system will boot, but access to Setup will be denied if the incorrect password is entered at the prompt.

NOTE: **To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.**

3-3 CHIPSET FEATURES SETUP

This section describes features of the VIA 82C693 AGPset. If your system contains a different chipset, this section will bear little resemblance to what you see on your screen.

ADVANCED OPTIONS. The parameters in this screen are for system designers, service personnel, and technically competent users only. Do not reset these values unless you understand the consequences of your changes.

ROM PCI/ISA BIOS (2A6LGJ1F)

CHIPSET FEATURES SETUP

AWARD SOFTWARE, INC.

Bank 0/1 DRAM Timing : SDRAM 10ns	**Auto Detect DIMM/PCI Clk : Enabled**
Bank 2/3 DRAM Timing : SDRAM 10ns	**Spread Spectrum : Disabled**
Bank 4/5 DRAM Timing : SDRAM 10ns	**CPU Host/PCI Clock : Default**
SDRAM Cycle Length : 3	
Memory Hole : Disabled	
Read Around write : Disabled	
Concurrent PCI/Host : Disabled	
System BIOS Cacheable : Enabled	
Video RAM Cacheable : Enabled	
AGP Aperture Size : 64M	
AGP-2X Mode : Enabled	
OnChip USB : Enabled	
** USB Keyboard Support : Disabled**	
Esc: Quit ↑↓ → ← : Select Item	**F6 : Load Optimal Defaults**
F1 : Help PU/PD/+/-:Modify	**F7 : Load Standard Defaults**
F5 : Old Values (Shift)F2 : Color	

Figure 3-3

- **CPU HOST/PCI Clock:** In this item you can choose the CPU HOST/PCI Clock. The setting are: Default ,66/33,75/37,83/41,100/33,103/34, 112/37,124/41,133/44, 105/35,110/36,115/38, 120/40

  When the setting is :'default" the CPU HOST Clock will depend on the setting of JP15.

  If JP15 is set to 66MHz only have the choice of 66/33, 75/37, 83/41on screen.

  If the JP15 is setting at 100MHz, then you can have 100/33,103/34,112/37,124/41, 133/44,105/35,110/36,115/38,120/40.

* Please turn off system power if the screen does not have any display after change of the setting. Then press and hold down " INS " key, and turn on system power again (release " INS " key till the screen has display) to reset correct frequency of CPU HOST clock.

3-4 POWER MANAGEMENT SETUP

The Power Management Setup allows you to configure you system to most effectively save energy while operating in a manner consistent with your own style of computer use.

POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

ACPI function : Enabled	**Primary INTR : ON**
Power Management : User Define	**IRQ3 (COM 2) : Primary**
PM Control by APM : Yes	**IRQ4 (COM 1) : Primary**
Video Off After : Suspend	**IRQ5 (LPT 1) : Primary**
Video Off Method : V/H SYNC+Blank	**IRQ6 (Floppy Disk) : Primary**
MODEM Use IRQ : 3	**IRQ7 (LPT 1) : Primary**
Soft-off by PWRBTN : Instant-off	**IRQ8 (RTC Alarm) : Disabled**
HDD Power Down : Disabled	**IRQ9 (IRQ2 Redir) : Secondary**
Doze Mode : Disabled	**IRQ10 (Reserved) : Secondary**
Suspend Mode : Disabled	**IRQ11 (Reserved) : Secondary**
** ** PM Events ****	**IRQ12 (PS/2 Mouse) : Primary**
VGA : OFF	**IRQ13 (Coprocessor) : Primary**
LPT & COM : LPT/COM	**IRQ14 (Hard Disk) : Primary**
HDD & FDD : ON	**IRQ15 (Reserved) : Disabled**
DMA/master : OFF	
Modem Ring Resume : Disabled	
RTC Alarm Resume : Disabled	
Esc: Quit ↑↓→←: Select Item	**F6 : Load Optimal Defaults**
F1 : Help Pu/Pd/+/-: Modify	**F7 : Load Standard Defaults**
F5 : Old Values (Shift)F2 : Color	

Figure 3-4

● **Power Management:**   This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

1.   Doze Mode

2.   Standby Mode

3.   Suspend Mode

4.   HDD Power Down

There are four selections for Power Management, three of which have fixed mode settings.

Disable (default)	No power management. Disables all four modes
Min. Power Saving	Minimum power management. Doze Mode = 1 hr. Standby Mode = 1 hr., Suspend Mode = 1 hr., and HDD Power Down = 15 min.
Max. Power Saving	Maximum power management -- **ONLY AVAILABLE FOR SL CPU'S**. Doze Mode = 1 min., Standby Mode = 1 min., Suspend

	Mode = 1 min., and HDD Power Down = 1 min.
User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

- **PM Control APM:** When enabled, an Advanced Power Management device will be activated to enhance the Max. Power Saving mode and stop the CPU internal clock.

  If the Max. Power Saving is not enabled, this will be preset to *No*.

- **Video Off Method: This determines the manner in which the monitor is blanked.**

V/H SYNC+Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
Blank Screen	This option only writes blanks to the video buffer.
DPMS	Initial display power management signaling.

- **Video Off After: When enabled, this feature allows the VGA adapter to operate in a power saving mode.**

N/A	Monitor will remain on during power saving modes.
Suspend	Monitor blanked when the systems enters the Suspend mode.
Standby	Monitor blanked when the system enters Standby mode.
Doze	Monitor blanked when the system enters any power saving mode.

- **MODEM Use IRQ:** Name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system.

  The choices: NA, 3, 4, 5, 7, 9, 10, 11

- **PM Timer:** The following four modes are Green PC power saving functions which are only user configurable when *User Defined* Power Management has been selected see above for available selections.

- **Doze Mode:** When enabled and after the set time of system inactivity, the CPU clock will run at slower speed while all other devices still operate at full speed.

- **Standby Mode:** When enabled and after the set time of system inactivity, the fixed disk drive and the video would be shut off while all other devices still operate at full speed.

- **Suspend Mode:** When enabled and after the set time of system inactivity, all devices except the CPU will be shut off.

- **HDD Power Down:** When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

- **Throttle Duty Cycle:** When the system enters Doze mode, the CPU clock runs only part of the time. You may select the percent of time that the clock runs.

  The Choice: 12.5%, 25.0%, 37.5%, 50.0%, 62.5%, 75.0%

- **ZZ Active in Suspend:** When Enabled, the ZZ signal is active during Suspend mode.

  The Choice: Enabled, Disabled.

- **VGA Active Monitor:** When Enabled, any video activity restarts the global timer for Standby mode.

  The Choice: Enabled, Disabled.

- **Soft-Off by PWR-BTTN:** When Enabled, turning the system off with the on/off button places the system in a very low-power-usage state, with only enough circuitry receiving power to detect power button activity or Resume by Ring activity.

   The Choice: Instant-Off, Delay 4 Sec.

- **Resume by Ring:**   An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state..

   The Choice: Enabled, Disabled.

- **IRQ 8 Break Suspend:** You can Enable or Disable monitoring of IRQ8 so it does not awaken the system from Suspend mode.

   The Choice: Enabled, Disabled.

Reload Global Timer Events:

When Enabled, an event occurring on each device listed below restarts the global time for Standby mode.

IRQ[3 -7, 9-15], NMI

   Primary IDE 0

   Primary IDE 1

   Secondary IDE 0

   Secondary IDE 1

   Floppy Disk

   Serial Port

   Parallel Port

3-5   PnP/PCI CONFIGURATION SETUP
This section describes configuring the PCI bus system. PCI, or **P**ersonal **C**omputer **I**nterconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

   ROM PCI/ISA BIOS (2A6LGJ1F)

```
          PNP/PCI CONFIGURATION SETUP
             AWARD SOFTWARE, INC.
╔══════════════════════════════════╦══════════════════════════════════╗
║ PNP OS Installed    : No         ║ CPU to PCI Write Buffer : Enabled ║
║ Resources Controlled By : Manual ║ PCI Dynamic Bursting   : Enabled  ║
║ Reset Configuration Data: Disabled║ PCI Master 0 WS Write  : Enabled  ║
║ IRQ-3  assigned to : PCI/ISA PnP ║ PCI Delay Transaction  : Disabled ║
║ IRQ-4  assigned to : PCI/ISA PnP ║ PCI#2 Access #1 Retry  : Disabled ║
║ IRQ-5  assigned to : PCI/ISA PnP ║ AGP Master 1 WS Write  : Enabled  ║
║ IRQ-7  assigned to : PCI/ISA PnP ║ AGP Master 0 WS Read   : Disabled ║
║ IRQ-9  assigned to : PCI/ISA PnP ║ Assign IRQ For USB     : Enabled  ║
║ IRQ-10 assigned to : PCI/ISA PnP ║ Assign IRQ For VGA     : Enabled  ║
║ IRQ-11 assigned to : PCI/ISA PnP ║                                   ║
║ IRQ-12 assigned to : PCI/ISA PnP ║                                   ║
║ IRQ-14 assigned to : PCI/ISA PnP ║                                   ║
║ IRQ-15 assigned to : PCI/ISA PnP ║                                   ║
║ DMA-0  assigned to : PCI/ISA PnP ║                                   ║
║ DMA-1  assigned to : PCI/ISA PnP ║ Esc: Quit    ↑↓→←: Select Item    ║
║ DMA-3  assigned to : PCI/ISA PnP ║ F1 : Help      Pu/Pd/+/-:Modify   ║
║ DMA-5  assigned to : PCI/ISA PnP ║ F5 : Old Values  (Shift)F2 : Color║
║ DMA-6  assigned to : PCI/ISA PnP ║ F6 : Load Optimal Defaults        ║
║ DMA-7  assigned to : PCI/ISA PnP ║ F7 : Load Standard Defaults       ║
╚══════════════════════════════════╩══════════════════════════════════╝
```

Figure 3-5

3-6 LOAD OPTIMAL DEFAULTS

The "**LOAD OPTIMAL DEFAULTS**" function loads the system Optimal default data directly from ROM and initialize associated hardware properly. This function will be necessary only when the system CMOS data is corrupted.

```
ROM PCI/ISA BIOS (2A6LGJ1F)
           CMOS SETUP UTILITY
          AWARD SOFTWARE, INC.
╔══════════════════════════════════════════════════════════╗
║ STANDARD CMOS SETUP        │ INTEGRATED PERIPHERALS        ║
║ BIOS FEATURES SETUP        │ SUPERVISOR PASSWORD           ║
║ CHIPSET FEATURES SETUP     │ USER PASSWORD                 ║
║ POWER MA┌──────────────────────────────┐ON                ║
║ PNP/PCI CO│ Load OPTIMAL Default (Y/N)? Y │T               ║
║ LOAD OPTIMAL DEFAULTS      │ SAVE & EXIT SETUP             ║
║ LOAD STANDARD DEFAULTS     │ EXIT WITHOUT SAVING           ║
╠══════════════════════════════════════════════════════════╣
║ Esc : QUIT              ↑↓→←  : Select Item                ║
║ F10 : Save & Exit Setup      (Shift) F2 : Change Color     ║
║──────────────────────────────────────────────────────────║
║          Time, Date, Hard Disk Type…                      ║
╚══════════════════════════════════════════════════════════╝
```

Figure 3-6

3-7 LOAD STANDARD DEFAULTS

The "**LOAD STANDARD DEFAULTS**" function loads the system Standard default data directly from ROM and initialize associated hardware properly. This function will be necessary only when the system CMOS data is corrupted.

ROM PCI/ISA BIOS (2A6LGJ1F)

CMOS SETUP UTILITY

AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	**INTEGRATED PERIPHERALS**
BIOS FEATURES SETUP	**SUPERVISOR PASSWORD**
CHIPSET FEATURES SETUP	**USER PASSWORD**
POWER MAI Load STANDARD Default (Y/N)? Y	
PNP/PCI CO	
LOAD OPTIMAL DEFAUL	**EXIT WITHOUT SAVING**
LOAD STANDARD DEFAULTS	

Esc : QUIT	↑↓ → ← : **Select Item**
F10 : Save & Exit Setup	**(Shift) F2 : Change Color**

Time, Date, Hard Disk Type…

Figure 3-7

3-8 INTEGRATED PERIPHERALS SETUP

The "**INTEGRATED PERIPHERALS SETUP**" mainly deals with I/O function. This function will be necessary only when the system I/O malfunctioned or the system is unable to detects your CD-ROM or hard disk.

ROM PCI/ISA BIOS (2A69KJ1C)

INTEGRATED PERIPHERALS

AWARD SOFTWARE, INC.

IDE HDD Block Mode : Enabled **IDE Primary Master PIO : Auto** **IDE Primary Salve PIO : Auto** **IDE Secondary Master PIO : Auto** **IDE Secondary Slave PIO : Auto** **IDE Primary Master UDMA : Auto** **IDE Primary Slave UDMA : Auto** **IDE Secondary Master UDMA: Auto** **IDE Secondary Slave UDMA : Auto** **On-Chip Primary PCI IDE: Enabled** **On-Chip Secondary PCI IDE: Enabled** **USB Keyboard Support : Enabled** **Init Display First : PCI SLOT** **Onboard FDC Controller : Enabled**	**Onboard SERIAL PORT 1 : 3F8/IRQ4** **Onboard SERIAL PORT 2 : 2F8/IRQ3** **UR2 Mode : Normal** **Onboard Parallel Port : 378/IRQ7** **Parallel Port Mode : SPP**
Esc: Quit ↑↓ → ←: Select Item **F1 : Help Pu/Pd/+/-:Modify** **F5 : Old Values (Shift)F2 : Color**	**F6 : Load Optimal Defaults** **F7 : Load Standard Defaults**

Figure 3-8

3-9 SUPERVISOR/USER PASSWORD

This item lets you configure the system so that a password is required each time the system boots or an attempt is made to enter the Setup program (Refer to Figure 3-3 for the details).

Supervisor Password allows you to change all CMOS settings but the User Password setting doesn't have this function. The way to set up the passwords for both Supervisor and User are as follow:

1. Choose either Supervisor Password or User Password in the Main Menu and press <Enter>. The following message appears:
"**Enter Password:**"

1. The first time you run this option, enter your password up to only 8 characters and press <Enter>. The screen does not display the entered characters. For no password just press <Enter>.

2. After you enter the password, the following message appears prompting you to confirm the password:
"**Confirm Password:**"

4. Enter exact the same password you just typed again to confirm the password and press <Enter>.

5. Move the cursor to Save & Exit Setup to save the password.

6. If you need to delete the password you entered before, choose the Supervisor Password and Press <Enter>. It will delete the password that you bad before.

7. Move the cursor to Save & Exit Setup to save the option you did, otherwise the old password will still be there when you turn on your machine next time.

3.10   SAVE & EXIT SETUP

The "SAVE & EXIT SETUP" option will bring you back to boot up procedure with all the changes you just made which are recorded in the CMOS RAM.

3-11 EXIT WITHOUT SAVING

The "EXIT WITHOUT SAVING" option will bring you back to normal boot up procedure without saving any data into CMOS RAM. All of the old data in the CMOS will not be destroyed.

Chapter 4

4-1 Mainboard Driver Install in Win9X,WinNT

To install the mainboard driver please run

X:\VIA\Driver\SETUP.EXE.

After execute Setup .EXE the screen will depend on the OS (Operating System) to show the necessary Driver which you have to install in your system, such like IDE Driver, AGP VXD Driver, VIA chipset Feature Registry and IRQ Routing Miniport Driver . Follow the procedure to install the driver.

We recommend to install all the Driver which this utility show in Screen ,because it will increase the system performance and solve the compatibility problem between system chipset and other device.

For Example , You have to install this driver before you install AGP VGA driver otherwise it can't install your VGA Driver succeed.

4-2 Sound Driver & Audio Rack Installation:
Special Features for CMI8738 audio chip

PCI Plug and Play (PnP) bus interface, 32 bit PCI bus master.

Full duplex playback and recording, built-in 16 bits CODEC.

HRTF 3D positional audio, supports both Direct Sound 3D$^{®}$ & A3D® interfaces, supports earphones,

two and four channel speakers mode.
Support Windows 3.1 / 95 / 98 and Windows NT 4.0.
Built-in 32 OHM Earphone buffer and 3D surround.
MPU-401 Game/Midi port and legacy audio SB16 support.
Downloadable Wave Table Synthesizer, supports Direct Music®.
- **Digital Audio (SPDIF IN/OUT)**
  Up to 24 bit stereo 44KHz sampling rate voice playback/recording.
  Full duplex playback and recording, 120dB audio quality measured.
  Auto detectable SPDIF/IN signal level from 0.5V to 5V.
- **Stereo Mixer and FM Music Synthesizer**
  Stereo analog mixing from CD-Audio, Line-in
  Stereo digital mixing from Voice, FM/Wave-table, Digital CD-Audio
  Mono mixing from MIC and software adjustable volume
  OPL3 FM synthesizer (4 operators)
  Up to 15 melody sounds and 5 rhythm sounds (20 voices)
- **Game and Midi Interface**
  Fully compatible with MPU-401 Midi UART and Sound Blaster Midi

  mode/ Standard IBM PC joystick/game port (dual channels)

DOS Installation

Before beginning the installation, please make sure that your hard disk has sufficient space(min. 4MB). Insert the Driver CD into the CD-ROM Drive.
1. Change directory to PCI audio DOS drivers folder (ex. X:\CMI8738\DOSDRV) at DOS prompt, and type:
          INSTALL [Enter]
2. Type DOS utilities path which you want to install.
3. Program will expand the file to the path which you've specified.
4. Install program will add initial drivers into AUTOEXEC.BAT file.

Win95/98 Installation

We recommend that you install Microsoft Windows before you install this PCI sound card, and you not install any other sound card device drivers in your current system.

1. Power off your system, install the PCI sound card, audio cable, speaker, microphone, and insert driver CD into the CD-ROM drive.

2. Turn on the computer, and enter the Microsoft Windows 95 / 98.

3. You will see a windows prompt like this:

   "New Hardware Found
   PCI Multimedia Audio Device
   Windows has found new hardware and is installing the software for it", then the dialog box shown. Click "Next" button to go on.

4. Click on "Other Locations…" button to specify drivers path.

5. When CMI8738/C3DX PCI Audio Device found, click "Finish".

6. Now, system is installing device drivers automatically. After a while, the system will finish the installation includes the following device drivers.

   CMI8738/C3DX PCI Audio Device

CMI8738/C3DX PCI Audio Joystick Device

CMI8738/C3DX PCI Audio Legacy Device

DOS mode MPU-401 Emulator

8. Click "start" key

9. Select "Run"

10. Key in the drive and path for Windows application installation program, for example, "X:\CMI8738\W95-98\APP\SETUP.EXE"

11. Click "OK" to start the installation procedure, and follow the on-screen instructions to finish the installation. When all the application softwares have been installed, please shut down Windows 95/98 system, and reboot your system.

Win95/98 Un-Installation

If you install Win95/98 and a sound card at the same time, you might experience some technical difficulties(the device might not function properly). It is suggested that you proceed with the un-install procedure:

1. Click "start" button.
2. Select "run" item.
3. Find UINSTDRV.EXE in driver disk under Win95/98 drivers folder.
4. Run it.
5. Follow the on-screen instructions to re-install the hardware.

If you want to completely remove the drivers, you can also run the un-install procedure as described previously. Remove the sound card from the slot, and then reboot the system.

Windows NT 4.0 Installation

We recommend that you install Windows NT 4.0 before you install this PCI audio card, and you not install any other sound card device drivers in your current system.

1. Click "Start" button, move the highlight bar to "Setting" item, and select the "Control Panel".

2. Double-click "Multimedia" icon.

3. Select "Devices" page, and press "Add" button.

4. Select "Unlisted or Updated Driver" item in "List of Drivers".

5. Specify the drive and the path where NT drivers are in (such as X:\CMI8738\NT40\DRV).

6. Select "C-Media CM8738" item and press "OK" button.

7. Select proper I/O value.

8. Press "OK" button.

9. Restart the system when being asked.

10. Now, you have already installed the PCI Audio Adapter under Microsoft Windows NT 4.0 successfully. if you want to install the Windows applications, continue the following steps:

11. Click "start" key.

12. Select "Run" item.

13. Key in drive and path for Windows NT application installation program, for example, "X:\

CMI8738\NT40\APP\SETUP.EXE"

14. Click "OK" to start the installation procedure, and follow the on-screen instructions to finish the installation. When all of application softwares have been installed, shut down the Windows NT system, and then reboot your system.

Windows Appc. (The Audio Rack)

Introduction

By means of a user-friendly interface(as easy as operating your home stereo system), this PCI audio rack provides you with the control over your PC's audio functions, including the advantage of four speakers mode enable/ disable, and perfect digital sound (SPDIF) input / output control.
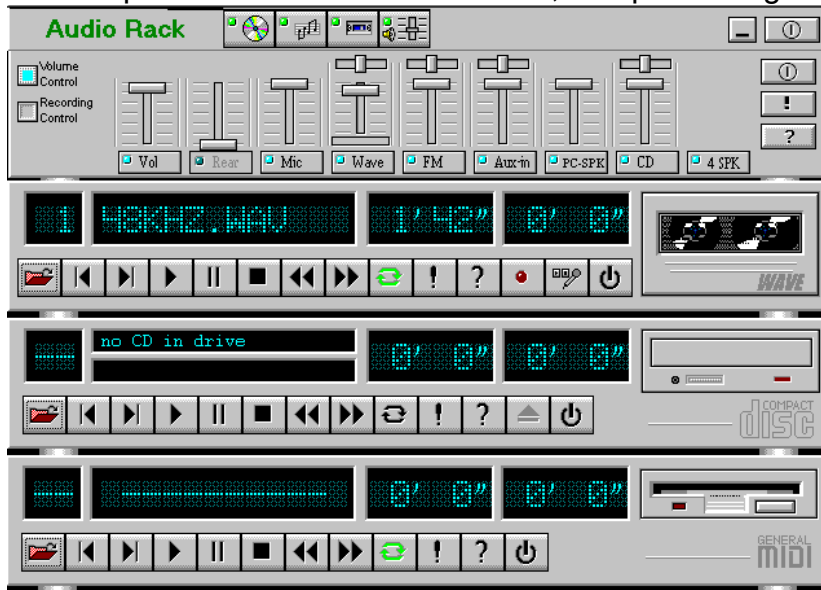
This Audio Rack consists of several major components:
Control Center: Controls the display of the PCI Audio Rack's components.

MIDI Player: Plays MIDI music files, and allows you to create your personal song playlists, and play the song files.

Wave Player: Records and plays digital audio (wave) files. Allows you to create wave file playlists, and playback the wave files.

CD Player: Plays standard audio CDs. Allows you to create your favorite song playlists.

System Mixer: Controls the volume level of your audio inputs and outputs.

Showing or Hiding Audio Rack Components

To remove or add a component from the display, click on the component's button on the Control Center's Button Bar or toggle it off.

MIDI Player, Wave Player, and CD Player

CD Player (above, similar to Wave Player and MIDI Player)

Sel (or Trk) fielX: If you have multiple selections in your playlist, this shows the number of the current selection or CD track.

Current File or Track: The name of the current MIDI file, wave audio file, or CD track.

Total Length fielX: displays the total length of files or tracks in minutes and seconds.

Current Time fielX: displays the current time of files or tracks in minutes and seconds when playback or recording.

Please refer to the help screen for more detail button function descriptions. (click on help "?" button on the player)

System Mixer

System Mixer allows you to control all the audio output and input levels.

System Mixer displays the volume controls which your audio drivers make available. *The names for these controls may vary.*

Mixer panel while the four speakers mode is enabled.

Mixer panel while the four speakers mode is disabled.

Volume Control: Clicking on this button shows and allows you to use the output level controls.

Recording Control: Clicking on this button shows and allows you use the input level controls.

Input and Output Level Sliders and Buttons: For each input or output signal type, the control slider controls the loudness whereas the horizontal slider controls the balance between the two speakers. The mute button temporarily stops input or output without changing slider positions.

Control types and names might vary. The common types are listed below:
- **Vol**: The master control for all outputs. The strength of an output signal is determined by both the Vol slider and the slider for the individual output. To affect *all* outputs, move the Vol slider. To change the output of an *individual* output type, move *its* slider.
- **Line-in/Rear**: Controls the audio hardware's Line In or Line Out levels. Line levels might be for an externally attached cassette player, for instance, while the four speakers mode is enabled, this control becomes the Rear speaker volume control.
- **Mic**: Controls the microphone input level.
- **Wave**: Controls wave (voice) playback or the recording levels.
- **FM**: Controls the FM music playback or the recording level.

- **Aux-in**: Controls the Aux-in music play or the recording level.
- **PC-SPK**: Controls the external PC speaker input level.
- **CX:** Controls the CD drive output level, for CD drives configured to play their audio output through the PC's audio hardware.
- **4SPK**: Turn on or turn off the Rear speakers effect.
- **SurrounX:** Turn on or turn off the 3D surround sound effect.
- **SPDIF-in**: Turn on or turn off the SPDIF digital signal input.

Mute Buttons: Toggle between muting and enabling the signal. A button with a lit LED is enabled, and when it is not lit, it means it is mute. Several *output* signals can usually be enabled at once.

The 4 Speakers System

This Audio Adapter provides 2 wave channels(front/rear), known as the 4 speakers system. When games or application programs via DirectSound® 3D or A3D® interface locate the sound sources to the listener's back, the two rear speakers will work to enhance the rear audio positional effect, so as to complement the insufficiency of using only two front speakers to emulate the
audio effect. The following is the hardware installation and the software setups:
1.The speaker installation.
Connect the front pair speakers to the Line-out jack of the audio adapter, and then connect rear pair speakers to Line-in/Rear jack of the audio adapter. The original Line-in can be moved to Aux-in.
2.The positions of the speakers
Put your speakers the way the following picture suggests, so as to avail yourself to the best audio result.
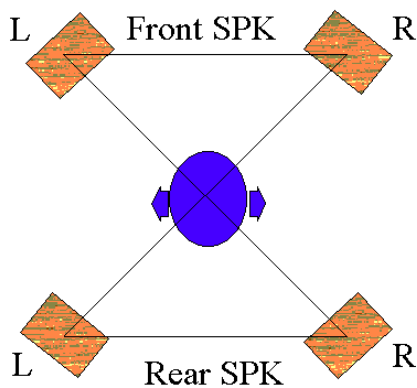
3.The mixer setup
There is a 4 speakers option in the volume control of the mixer, and when you enable this option, it means the rear speakers are connected to Line-in/Rear jack. When Line-in/Rear jack is connected to other external Line-in sources, please DO NOT enable this option in order to avoid hardware conflicts. Regarding rear speaker option, you can turn on or turn off the output of the back speakers, and adjust the volume, to have the rear/front speakers have the same volume.

4.The demo

Execute the "Helicopter" demo within the C3D HRTF Positional Audio Demos of this audio adapter. When the helicopter flies behind you, the rear speakers will work.

Optical Kid for BX2100 SPDIF/OUT (Optional)

The Optical Kid includes：

- Optical Module
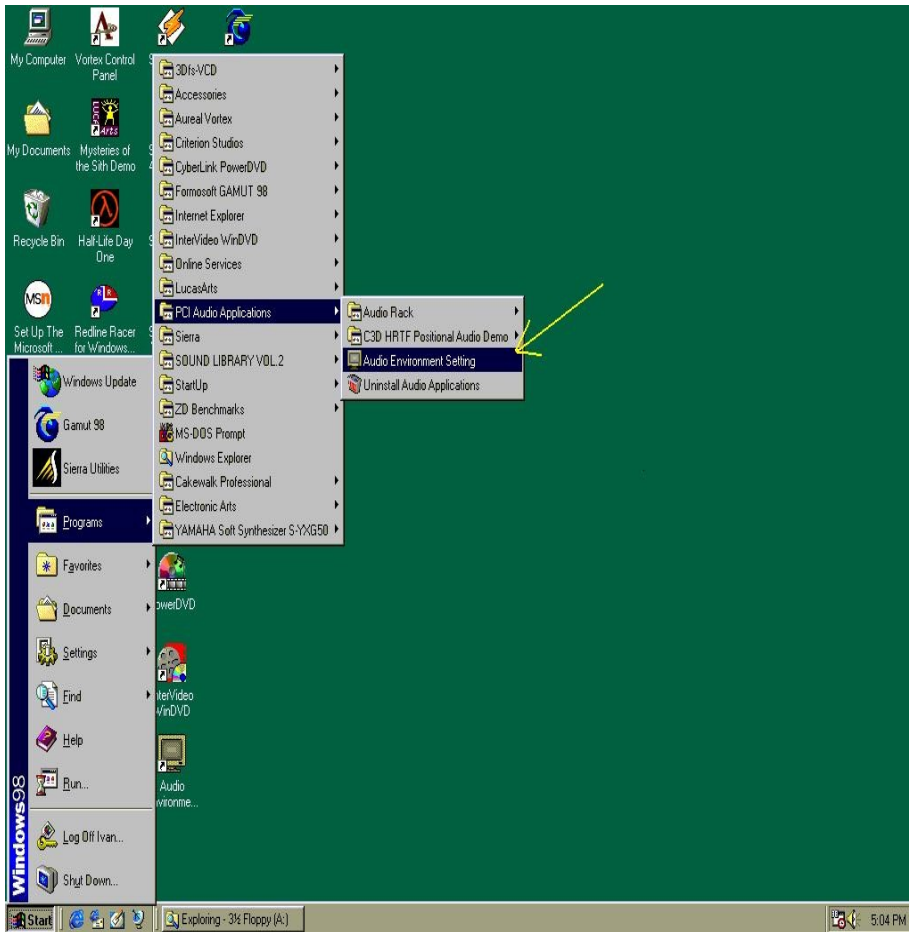- Optical Cable
- Software DVD driver
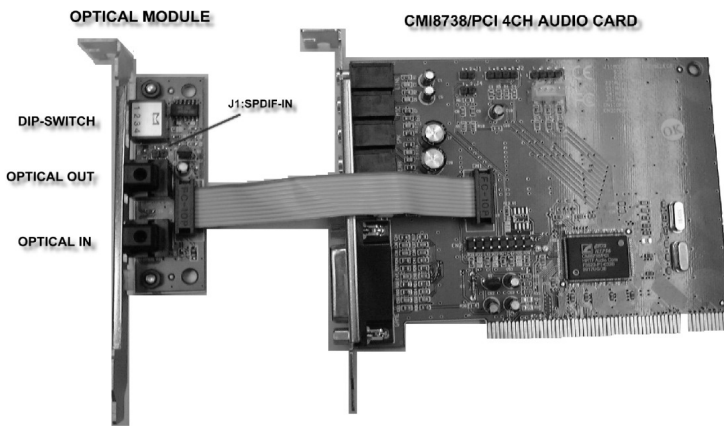
An example of optical kit is used to connect the sound card and the MD.
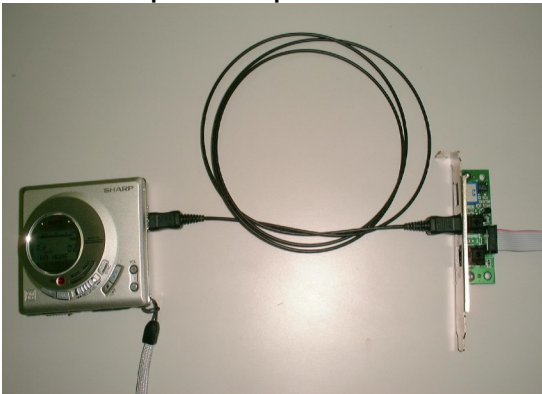
The application program setup(please install CMI8738 application program first)

When the connection is done, please go to the Start menu and select PCI Audio Applications\Audio Environment Setting
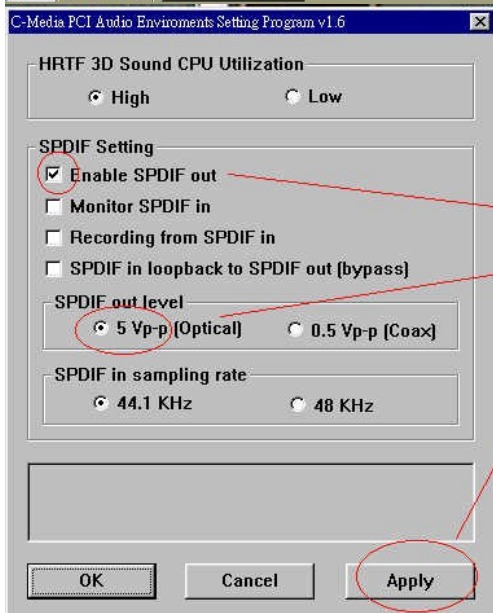
When all the procedures have been completed, there will be an infrared signal coming from the SPDIF/OUT of the optical fiber of the sound card.

Please note that signal beam may cause severe damage to the eyes. For your safety, please point the output end to a piece of white paper to check if thebeam is in function.
Please connect the output signal to the MD input, then play the music via the MP3 player:
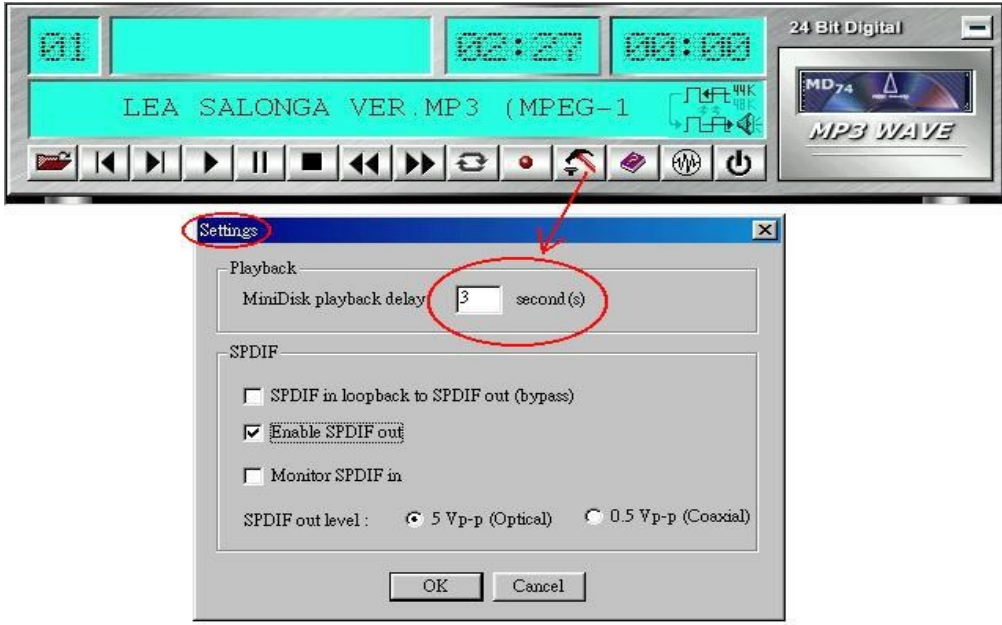
CHANGE DELAY TIME FOR MD AUTO-SYNC MODE

Please note that in playback, if there is no gap longer than three seconds between each track, the MD can not recognize the tracks and will record all of them into one. It is recommended that you set the gap time to 3~5 seconds to meet all type of MD requirements.

RECORDING FORMAT AND RECORDING CHANNEL SETTING

About Recording 24bit Audio Setting
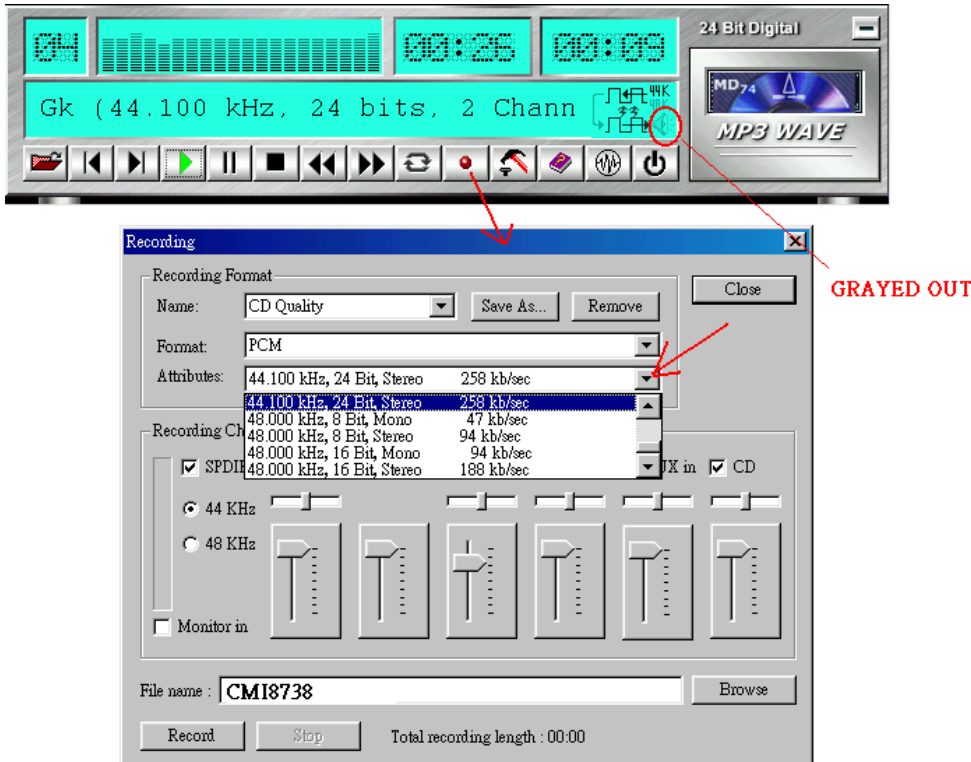
24-bit audio can only be applied to SPDIF IN/OUT mode; it does not apply to other modes such as the four channels or the analog. No sound will be heard while in playback, yet it can be recorded.
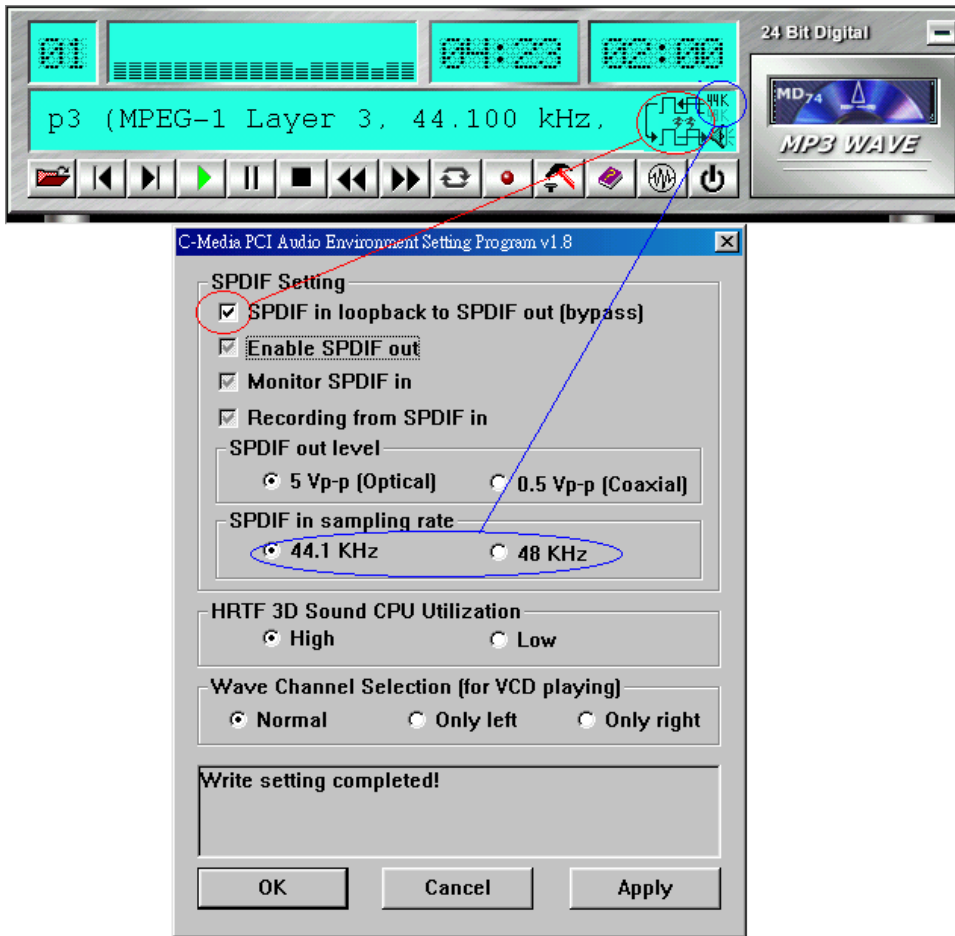
The un-selected area will be gray out.
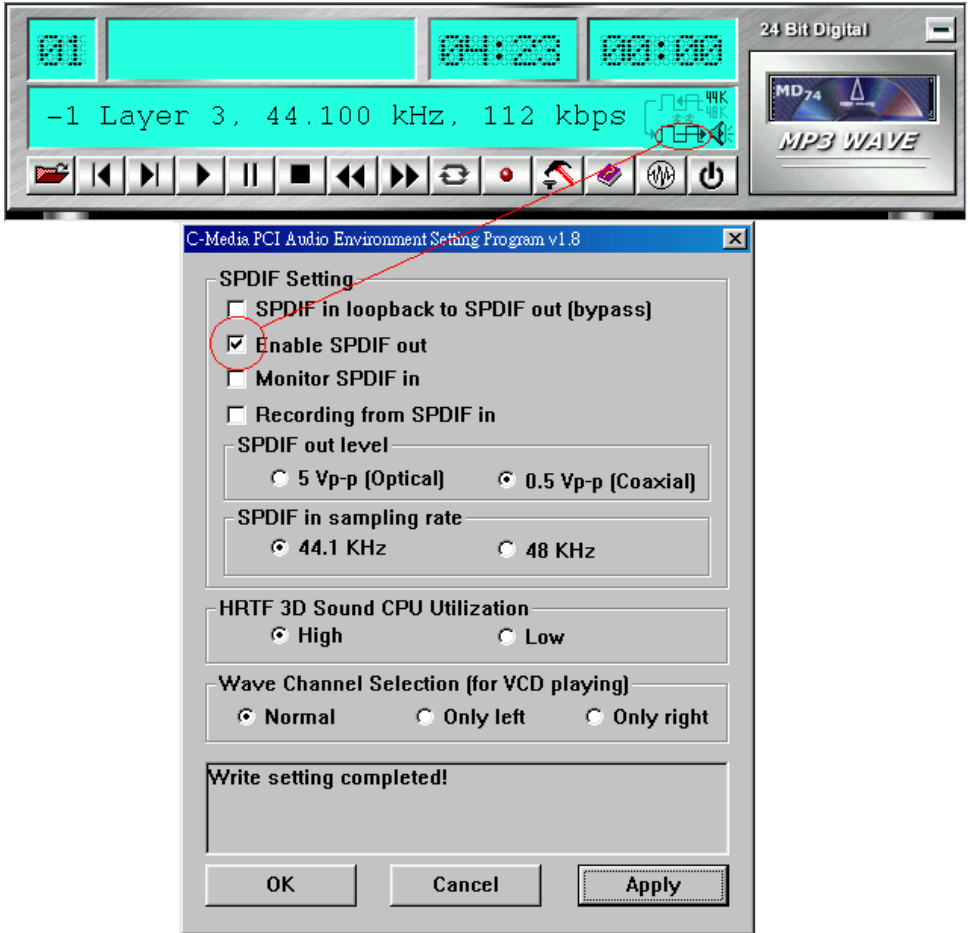
The un-selected area will be gray out.
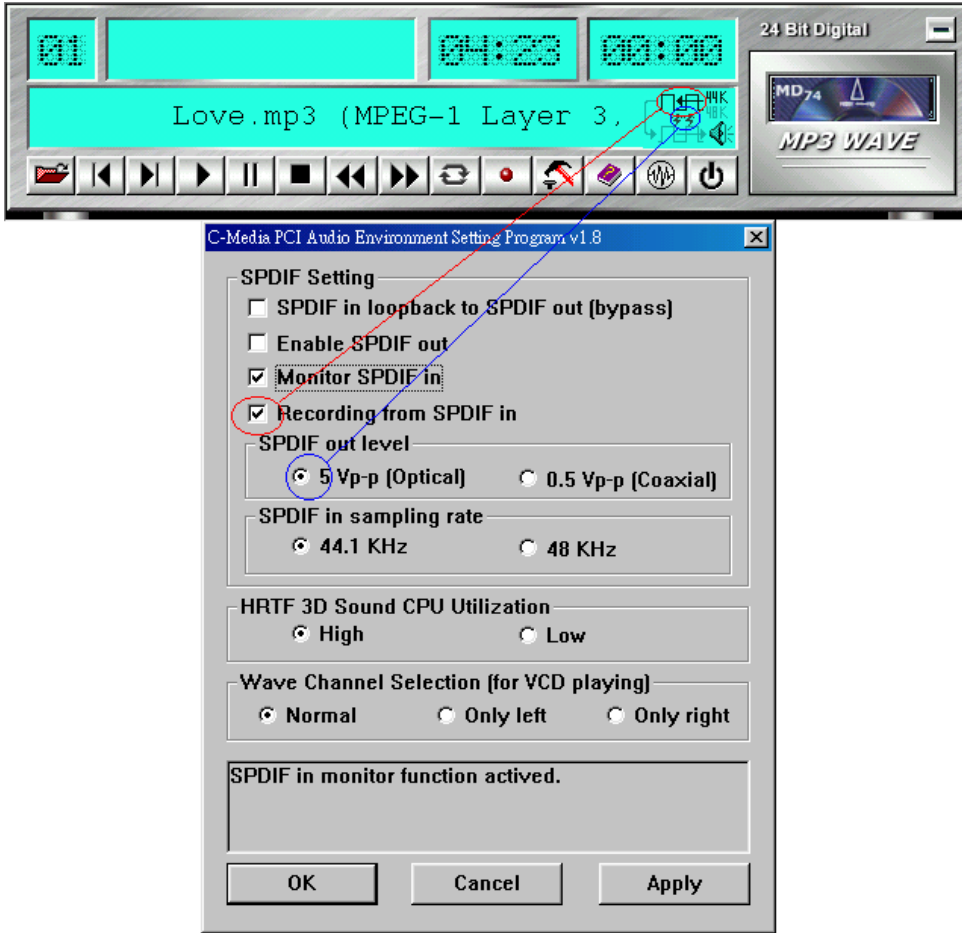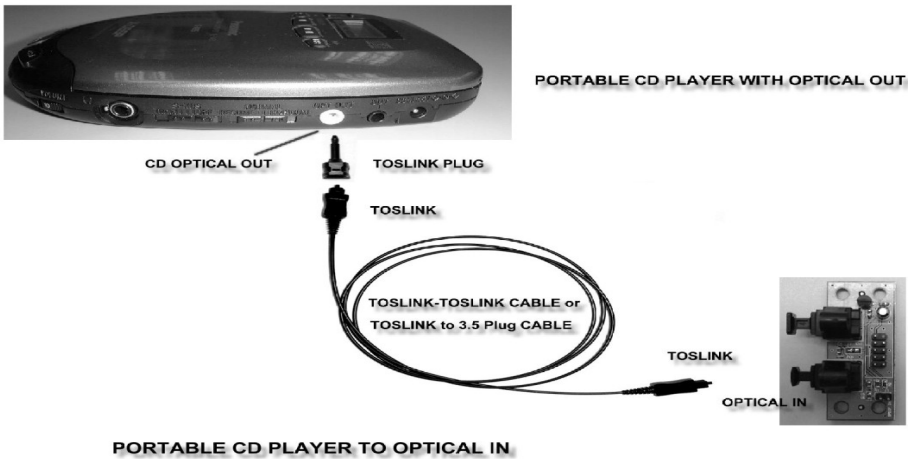
The un-selected area will be gray out.

You can double-click this circuit icon to have the following setting box. By means of this setting box, you can also complete the above-mentioned setting procedures.

DOUBLE CLICK IT
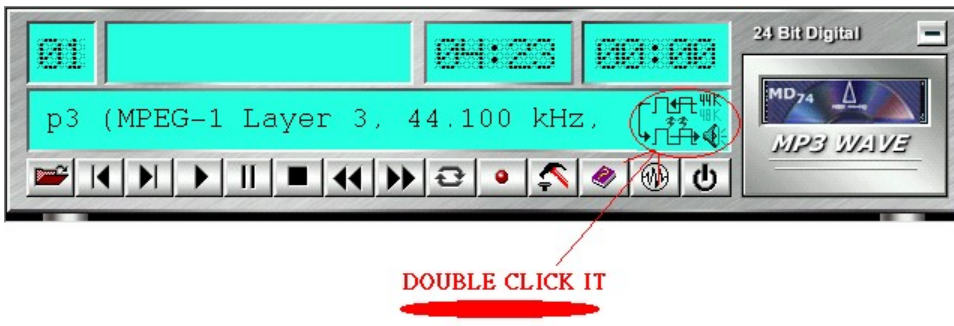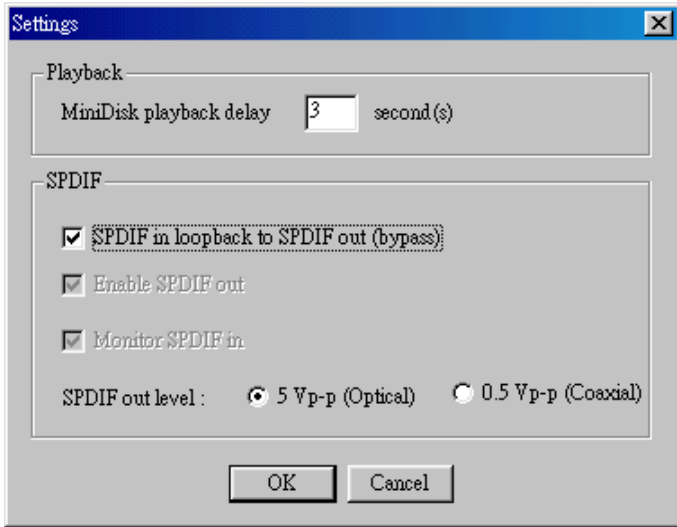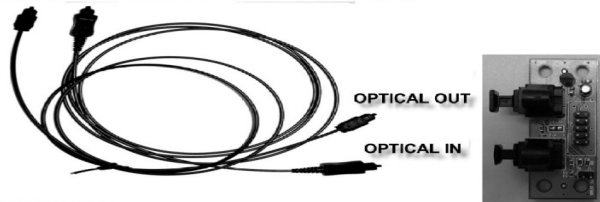
BX2100 SPDIF/IN

An example of Portable CD Player(Output) to BX2100(Optical Input)Setup

PORTABLE CD PLAYER WITH OPTICAL OUT

CD OPTICAL OUT   TOSLINK PLUG

TOSLINK

TOSLINK-TOSLINK CABLE or
TOSLINK to 3.5 Plug CABLE

TOSLINK

OPTICAL IN

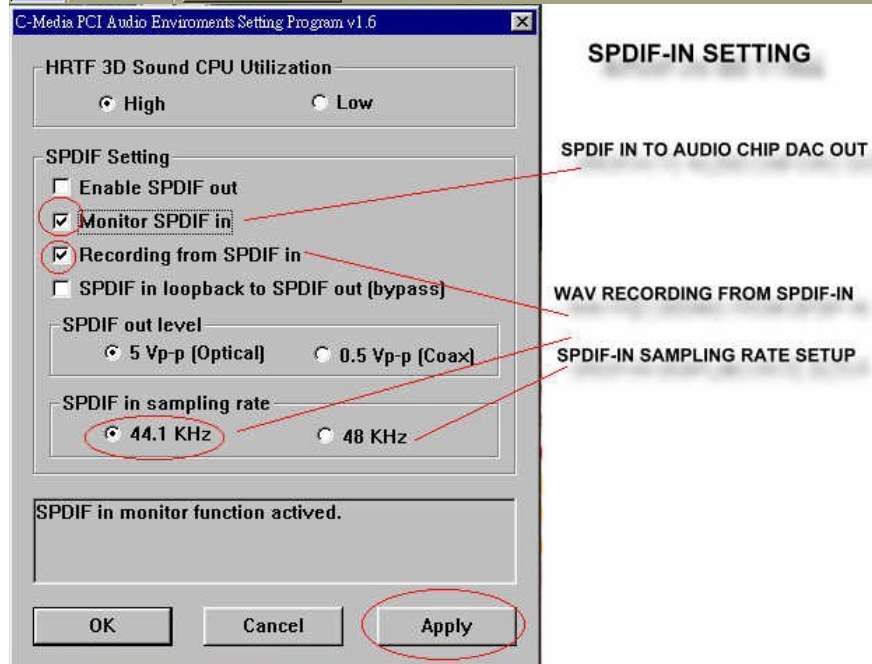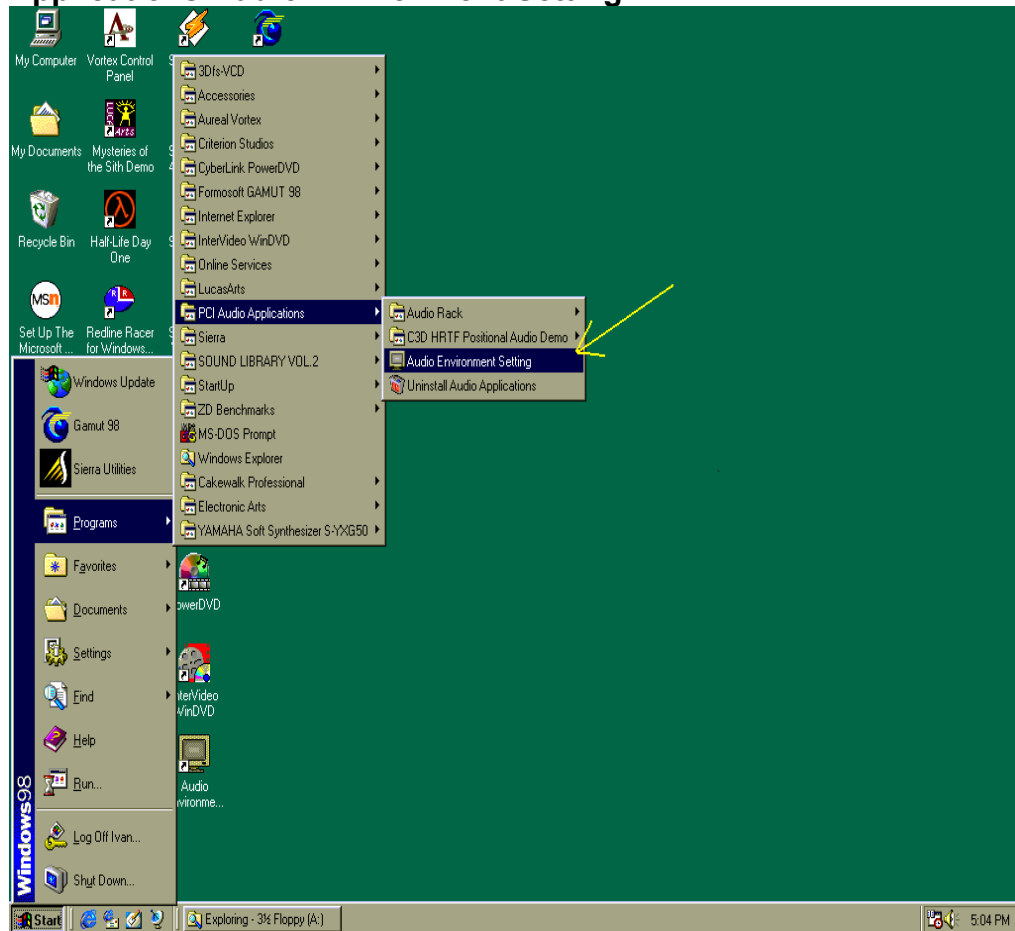PORTABLE CD PLAYER TO OPTICAL IN

MINIDISC DECK
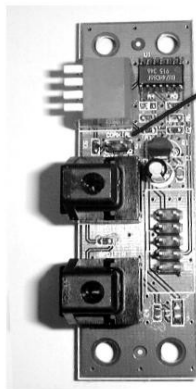
OPTICAL OUT

OPTICAL IN

OPTICAL IN/OUT LINK TO MINIDISC DECK

When the connection is done, please go to the Start menu and select PCI Audio Applications\Audio Environment Setting

3.Loopback(bypass)mode setup
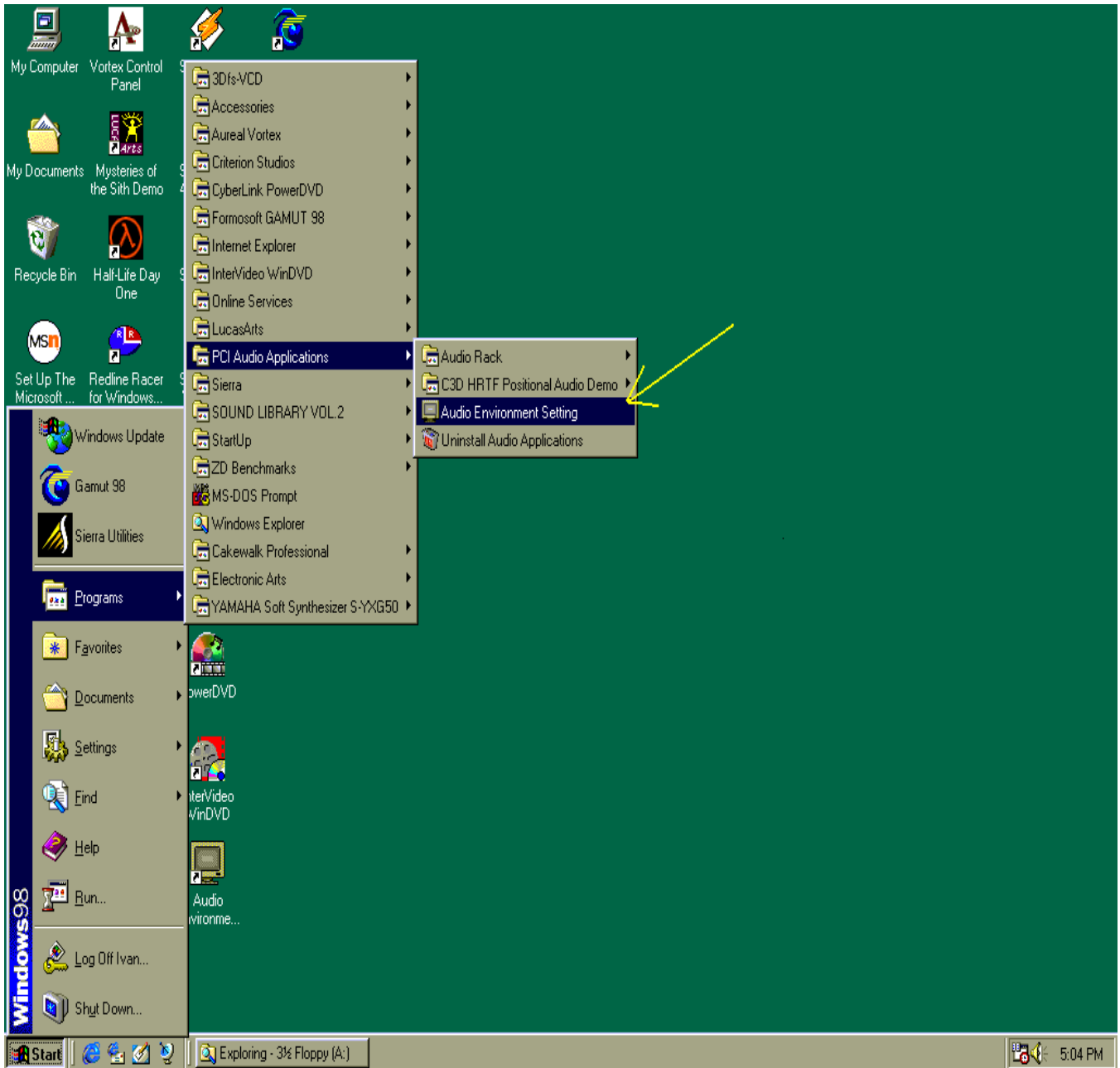## CD ROM(Digital Output) to BX2100(SPDIF/IN)Setup
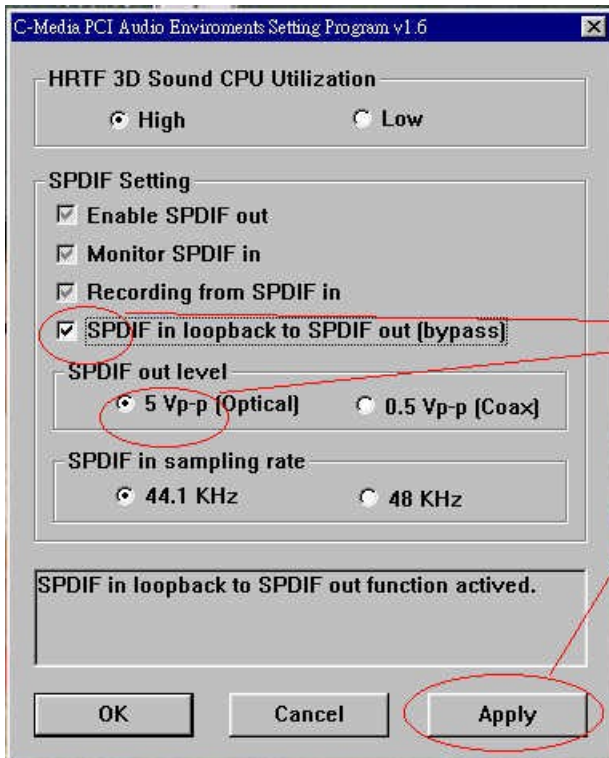

CD-ROM DIGITAL OUT

J1:SPDIF-IN

CD-ROM DIGITAL OUT TO SPDIF-IN

When the connection is done, please go to the Start menu and select PCI Audio Applications\Audio Environment Setting

Please follow these setting procedures.

CD-ROM TO MD SETTING

LOOP MODE:

PC CD-ROM IN

OPTICAL OUT TO MD

Now you can insert the CD into the CD ROM drive, then activate C-MEDIA CD player and push the "play" button to do the recording job.

Please note that you have to set the MD in the simultaneous-recording mode.

Chapter 5

Quick Troubleshooting Guide

If the result of your diagnostic is "call service", please have the following information ready before you contact for any technical support.

1. The CPU (Central Processing Unit) you are using along with its require setting.

2. BIOS version (The message on third line when you turn on your computer).

3. General information about the hardware configuration (e.g. Modem, Video card, and any other Add-on device's brand and model number, and system RAM type and chip brand).

4. Complete description of the problem if possible (What actually happened to make you think the mainboard is the problem, any received error messages, at what point in the boot-up process, and any other information you think might help).

Troubleshooting Table

Problem Description	Diagnostic Procedure
No Screen Display after assembly or the system prematurely stops booting.	1. Turn off your computer. 2. Make sure you have properly connected all power cord and VGA card connector. 3. Make sure both FDD & HDD's cables are in correct direction at both ends. 4. If you have UPS, make sure it has been turn on. 5. Make sure your monitor switch is turn on, and its brightness & contrast are in the correct position. 6. All add-on device (include CPU, Memory module) are properly attached into its slot. 7. Make sure the CPU's Bus Frequency is set to its correspond requirement. 8. If the problem still exist after you turn on system power, please "call service".
Can not install Windows95/98	At this point, if you have any problem with OS installation. Please refer to OS installation guide for correspondence information.
Can not install correspond driver for relate device	1. If your add-on device has PnP function, please make sure it has been correctly detected at system's post period. 2. Make sure there is nothing conflicts (use same IRQ). 3. Remove any unnecessary driver that has previously installed in "Device Manager" under your OS. 4. Re-install your device driver.
The system hangs up when running the program or OS	1. If you just update the BIOS, please try clear the CMOS (refer to CMOS RAM Clear at page7). 2. Check your fan(s) system, and make sure all of them worked correctly (e.g. does not contain any noise).

Chapter 6

Frequently Asked Questions and Answers

Q : The system will hang up when setting "CPU Host / PCI CLK – 133MHz/33Mhz".
A : Please check your SDRAM, it must support 133MHz. You can not use PC 100 SDRAM to run 133MHz.

Q : Why the CPU temperature show NA when use Pentium II 266MHz CPU?
A : Because old CPU like Pentium II 233MHz, 266MHz do not have thermal diode inside CPU, therefore hardware can not detect the temperature. In newer CPU, they have the thermal diode inside the CPU; therefore system can read the temperature and display it in the BIOS.

Q : Why the mainboard can't installed both Pentium II/III CPU and Socket 370 CPU together?
A : BX2000/BX2100 Mainboard is design for single CPU. It can't accept dual CPU at the same time.

Q : Can I disable the onboard sound controller?
A : Please set JP4 1-2 closed to disable onboard sound controller.

Q : What can I do after setting higher frequency in "CPU Host / PCI CLK" the system hang up (do no have display)?
A : Press and hold down "INS" key then turn on computer power (release "INS" key till the screen has display). Get into BIOS setup, and reset correct frequency.

Q : Why I can't install AGP card's driver in Windows95?
A : You have to install USB Supplemental Utility in Windows 95 before you can install AGP card's driver.

Q : Why I can't install AGP card's driver in Win95,Win98?
A : Please install the VIA mainboard driver before install AGP VGA driver.

Q : Why I find memory conflict under "Device Manager" in Windows 95 when I check resource of display controller?
A : This is a bug of Windows 95. It has been solved in Windows 98.

Q : How to make your own logo in the BIOS?
A :
1. You must have CBROM.EXE file (You can find it from Driver Pack CD or download it from our website at www.jetway.com.tw).
2. Make your own logo file by "Bitmap" format. The dimension limit is 640 x 480 x 16 color.
3. Save your system BIOS data to a binary file by using AWDFLASH.EXE utility or download new BIOS file from our website.
4. Execute CBROM xxxx.bin /LOGO xxxx.bmp
    xxxx.bin is the BIOS file which you saved or download from our website.
    xxxx.bmp is the bitmap file which you made and intent to add into BIOS.
5. After execute the above instruction the new BIOS will combine the logo file into xxxx.bin. At this moment, you can use AWDFLASH.EXE utility to flash this file as your new BIOS.

Q : What's the BIOS flash procedure (Upgrade BIOS)?
A :
1. Make a DOS boot able disk (just for boot up, do not contain EMM386.exe or any similar program).
2. Put the BIOS (xxxx.bin) and its flash utility at same bootable disk.
3. After you boot up the system, at "A : \" prompt, type in
   awdflash xxx.bin/sn/py/r/cc.
4. After you boot up by disk, computer should ask press DEL to get into BIOS setup.
5. Once you are in the BIOS setup, choose "LOAD SETUP DEFAULTS".