Declaration of Conformity

According to 47 CFR, Parts 2 and 15 of the FCC Rules

The following designated product:

EQUIPMENT: MAINBOARD

MODEL NO.: 9BJF

is a Class B digital device that complies with 47 CFR Parts 2 and 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

This declaration is given to the manufacturer:

CHAINTECH - EXCEL COMPUTER U.S., INC.

4427 Enterprise ST. Fremont, CA 94538, U.S.A.

hattp://www.chaintech-excel.com

Chaintech President: Simon Ho

Signature:

Federal Communications Commission Statement

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

- This device may not cause harmful interference
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy. If this equipment is not installed and used in accordance with the manufacturer's instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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

Canadian Department of Communications Statement

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

Manufacturer's Disclaimer Statement

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Table of Contents

Chapter 1 Introduction 1
1-1 Product Specifications 1
1-2 Package Contents 2
1-3 Mainboard Layout 3
1-4 Connector and Jumper Reference Chart 4

Chapter 2 Hardware Setup 5
2-1 Installing a CPU in a Socket 478 5
2-2 Setting Your CPU's Parameters 5
2-3 Connector and Jumper Settings 6
2-4 Main Memory Configuration 11

Chapter 3 Phoenix-AwardBIOS Setup Program 12
3-1 Standard CMOS Features 13
3-2 Advanced BIOS Features 14
3-3 Advanced Chipset Features 17
3-4 Integrated Peripherals 18
3-5 Power Management Setup 20
3-6 PnP/PCI Configuration 23
3-7 PC Health Status 24
3-8 Frequency/Voltage Control 24
3-9 Load Fail-Safe Defaults 25
3-10 Load Optimized Defaults 25
3-11 Supervisor Password & User Password Setting 26
3-12 Save and Exit Setup 26
3-13 Exit Without Saving 26

Feature Explanations

Software Power-off Control 6
Over-ride Power Button 7
Blinking LED in Suspend Mode 6
Power On By Modem 6/22
Power On By Alarm 22
Poly-fuse Over Current Protection 6
Wake Up On LAN 9

Appendices

Appendix I CMedia 8738 Audio Subsystem 27

Chapter 1

Introduction

1-1 Product Specifications

❒ **Processor**

- Supports Intel Pentium 4 Socket 478 processors
- Support system bus at 400/533MHz

❒ **Chipset**

- Intel 845G + ICH4 chipset

❒ **DRAM Memory**

- Two 184-pin DDR DIMM sockets support up to 2 GB
- Supports PC-1600/2100 DDR SDRAM Modules

❒ **Expansion Slots**

- One AGP slot for 4XAGP at 1.5v (v2.0 compliant) or LTI2-845G (optional) adapter supports DFP and NTSC/PAL TV system
- Six 32-bit PCI slots (Rev 2.2 compliant)
- One CNR slot for modem, audio and LAN riser

⚠ This motherboard support only 1.5v AGP electricals. AGP card using 3.3v or other voltages may result in system boot up failure, malfunction, etc.

❒ **Boot-Block Flash ROM**

- Award System BIOS, supports PnP, APM, DMI, ACPI & Multi-device booting features i.e. floppy, LS120, CD/DVD-ROM, HDD(IDE, SCSI), ZIP-ATAPI etc.

❒ **Embedded Ultra DMA-100 PCI IDE controller**

- Supports two IDE ports up to 4 ATAPI devices
- Supports up to PIO Mode 4 up to 16.6MBps, Multi Mode 4 up to 66MBps and Multi Word Mode 5 up to 100MBps with bus mastering
- Bus Mastering software drivers for common multi-task operating systems

❒ **On-board Super I/O Controller**

- ITE 8712 LPC with system monitoring hardware
- Two UARTs support two serial ports and IR function for HPSIR and ASKIR
- One parallel supports SPP/ECP/EPP
- One floppy disk drive connector supports up to 2.88MB
- Integrated smart card reader function and interface

❒ **Embedded System Monitor Hardware**

- 8 external voltage inputs
- 2 temperature sensor with thermistor for CPU and System
- 2 Fan speed monitoring with ON/OFF control in suspend

❒ **Ethernet 10/100 Controller**

- On board LAN chip RTL8100B support 10/100Mbps Ethernet operation

- **Embedded USB Controller**
  - Support up to 6 USB ports (EHCI/UHCI v1.1compliant)
  - Optional USB riser with additional 2 USB ports

✍ **The official USB 2.0 driver for Windows XP is available on-line at Windows Update website at http://windowsupdate.microsoft.com/**

- **Double Stack Back-Panel I/O Connectors**
  - PS/2 Mini-DIN keyboard and mouse port
  - Two USB port and One RJ45 connector
  - One 9-pin D-Sub male Serial port
  - One 15-pin D-Sub female Serial port
  - One 25-pin D-Sub female Printer port
  - Audio Line-in/out and Mic-in jacks
  - One 15-pin D-Sub female Game/MIDI port
- **On board video Sub-system**
  - Integrated 2D/3D graphics accelerator
  - Full frame DVD audio and video playback
  - Shared system memory use Intel D.V.M. technology
- **On board PCI Audio Subsystem**
  - CMedia 8738 audio chip w/ legacy audio SB16/Pro compatible
- **Audio Subsystem via AC-link** (optional)
  - AC"97 V2.1 compliant CODEC with integrated SRC

1-2 Package Contents

This product comes with the following components:

- One mainboard
- One 40-pin (80-wire) UDMA-100 IDE connector ribbon cable (Figure 1-1)

  ***Color coded connection cable:** Blue to mainboard, Gray to Master & Black to slave
- One 34-pin floppy disk drive ribbon cable (Figure 1-2)
- One 9-pin serial port ribbon cable (optional)
- One User's Manual
- **One CD-ROM that includes**
  - Award DMI Utility for DOS
  - Audio and Graphic drivers and utility
  - Intel Chipset Software installation utility
  - Optional **Value Pack 2002** software pack including Norton AntiVirus, Adobe ActiveShare, Acrobat Reader, Acrobat eBook Reader, Imagemore and AutoSave.

✍ **See the Readme.txt file in the CD-ROM's root directory for installation instructions of all driver and software utilities.**

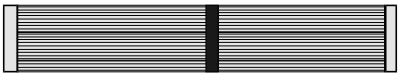


Figure 1-1 UDMA 100 IDE cable

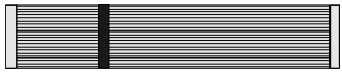
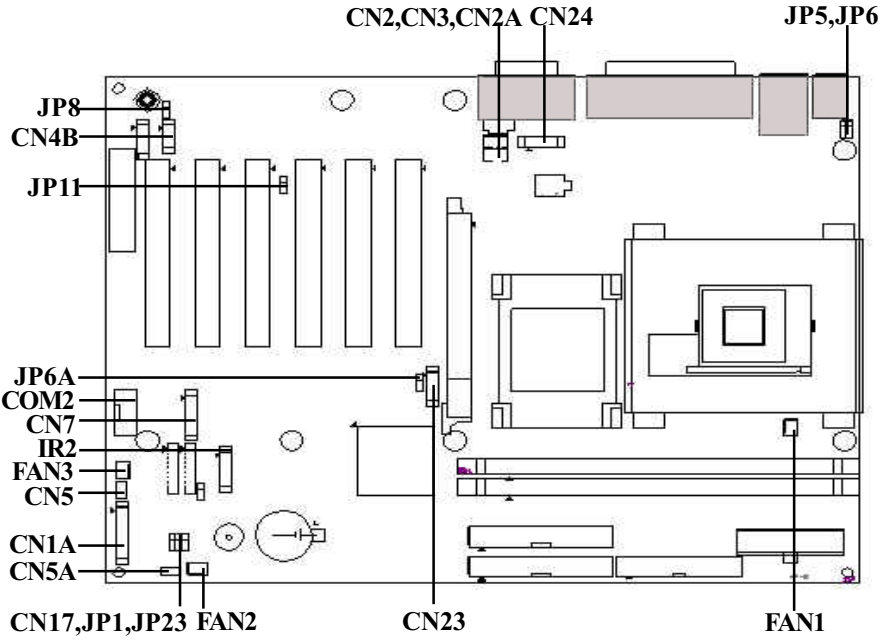
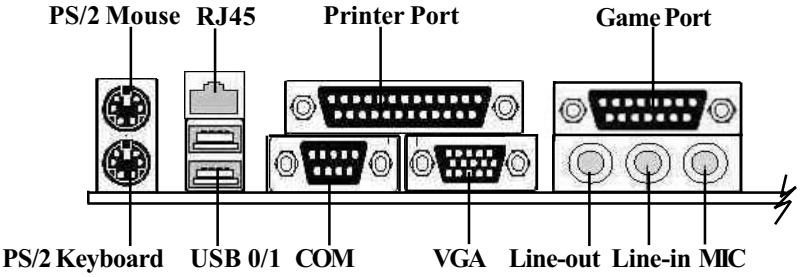


Figure 1-2 Standard Floppy cable

1-3 Mainboard Layout





1-4 Connector and Jumper Reference Chart

Jumper & Connector No.	Function	Page
JP1	Clear CMOS Data Jumper	8
JP5	Power On By Keyboard	8
JP6/JP6A	Power On By USB 0/1 and 2/3	8
JP8	On board Audio	8
JP11	On board LAN	8
CN1A	Over ride Power Button Connector	7
	Power Indicator LED Connector	
	Green Button/LED Connector	
	System Reset Switch Connector	
	Speaker Connector	
	IDE Activity LED Connector	
CN2	CD-ROM Audio in Connector	8
CN2A	CD-ROM Audio in Connector	9
CN3	Auxiliary Audio-in Connector	9
CN4B	AC3 Surround/Center + Bass Connector	9
CN5	WOL (Wake-on-LAN) Connector	9
CN5A	WOM (Wake-on-Modem) Connector	9
CN7	Smart Card Reader Connector	9
CN17	Blue LED Connector	10
USB1/CN23	USB 0/1 Ports andUSB 2/3 Connector	10
CN24	Front Panel Audio Connector	10
IR2	IR/CIR Connector	10
FAN1/FAN2/FAN3	CPU/System/Case Cooling Fan Connector	10
COM2	COM 2 Header	10
PW1/PW2	ATX/ATX12V Power Supply Connector	6

Chapter 2

Hardware Setup

If your mainboard has already been installed in your computer you may still need to refer to this chapter if you plan to upgrade your system's hardware.

Be sure to disconnect the power cable from the power source before performing any work on your mainboard, i. e. installing a CPU, memory module, changing a jumper setting, etc. Not doing so may result in electrical shock!

2-1 Installing a CPU in a Socket 478

The Intel Socket 478, designed for the Pentium 4 processor, has been incorporated as a standard mainboard specification To insert your CPU into Socket 478 please do the following:

1. Locate a small dot marked on the top surface of the CPU close to one if it's corners. The same corner will also be cut off, leaving a noticeable notch in the CPU's corner. These markings indicate Pin 1 of the CPU.
2. Pull up the lever of Socket 478 so that it is perpendicular with the surface of the mainboard. Gently insert the CPU with Pin 1 at the same corner of Socket 478 that contains the end of the lever. Allow the weight of the CPU to push itself into place. Do not apply extra pressure as doing so may result in damaging your CPU. Snap the lever back into place.

Installing a standard Intel specified heat sink with cooling fan is necessary for proper heat dissipation from your CPU. Failing to install these items may result in overheating and possible burn-out of your CPU.

2-2 Setting Your CPU's Parameters

This mainboard use a new user friendly technology that enables the user to setup a mainboard's CPU parameters through an easy to use BIOS setup procedure. It is no longer necessary to make many jumper settings as on conventional mainboards.

After installing all your hardware into your PC system, you can manually configure your CPU clock ratio and CPU clock according to your processor's specifications. By turning on your system's power. Enter the CMOS Setup Utility by pressing the Delete key when your BIOS identification screen appears, then go to the Frequency/Voltage Control option and select your CPU clock ratio and CPU clock speed (See Chapter 3).

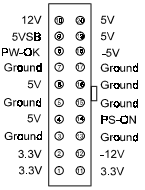
You do not need to make voltage settings because this mainboard will automatically sets your CPU voltage.

2-3 Connector and Jumper Settings

Connectors are used to link the system board with other parts of the system, including the power supply, the keyboard, and the various controllers of the system case.

The power supply connector is the last connection to be made while installing a mainboard. Before connecting the power supply, please make sure it is not connected to the power source.

ATX/ATX12V Power Supply Connector (PW1/PW2)



PW1

Pin	Signal	Wire
1	COM	BLK
2	COM	BLK
3	+12VDC	YEL
4	+12VDC	YEL

PW2

The ATX power supply provides a single 20-pin connector interface which incorporates standard +/-5V, +/-12V, optional 3.3V and Soft-power signals. The Soft-power signal, a 5V trickle supply is continuously supplied when AC power is available. When the system is in the Soft-Off mode, this trickle supply maintains the system in it's minimum power state.

The ATX12V power supply has a new +12 V (4-pin) To enable the delivery of more +12 VDC current to the motherboard.

Software Power-Off Control

This mainboard can be powered down using theWindows 9x Software Power-Off function. To power down your computer, click the START button on the Windows 9x task bar. Select "Shut Down The Computer" and the system turns off. The message "It is now safe to turn off your computer" will not be shown when using this function.

Power-On By Modem

While in Soft-off state, if an external modem ring-up signal occurs, the system wakes up and can be remotely accessed. You may enable this function in BIOS's Power Management Setup menu. (See Chapter 3)

Blinking LED in Suspend Mode

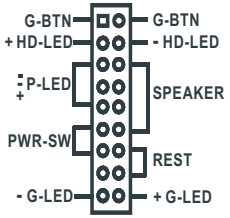
While in Suspend mode, the LED light on the front panel of your computer will flash. Suspend mode is entered by pressing the Override Power Button, pushing the Green button on your ATX case, or enabling the Power Management and Suspend Mode options in BIOS's Power Management menu. (See Chapter 3)

Poly-fuse Over Current Protection

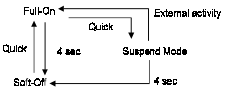
The poly-fuse protects the system from dangerous voltages the system might be exposed to via the keyboard or USB connectors. In case of such exposure, the poly-fuse will immediately be disconnected from the circuit, just like a normal fuse. After being disconnected for a certain period of time, the poly-fuse will return to its normal state, after which the keyboard or USB can function properly again.

Front Panel Connector Set (CN1A) A through F

A. Over-ride Power Button Connector



The power button on the ATX chassis can be used as a normal power switch as well as a device to activate Advanced Power Management Suspend mode. This mode is used for saving electricity when the computer is not in use for long periods of time. The Soft-off by PWRBTN function in BIOS's Power Management Setup menu must be set to "Delay 4 Sec." to activate this function.



Over-ride Power Button

When the Soft-off by PWRBTN function is enabled, pushing the power button rapidly will switch the system to Suspend mode. Any occurence of external activities such as pressing a key on the keyboard or moving the mouse will bring the system back to Full-On. Pushing the button while in Full-On mode for more than 4 seconds will switch the system completely off. See Over-ride Power Button Operation diagram.

B. Power Indicator LED Connector

The power indicator LED shows the system's power status. It is important to pay attention to the correct cables and pin orientation (i.e., not to reverse the order of these two connectors.)

C. Green Button/LED Connector

Some ATX cases provide a Green button switch which is used to put the system in Suspend mode. In Suspend mode, the power supply to the system is reduced to a trickle, the CPU clock is stopped, and the CPU core is in it's minimum power state. The system is woken up whenever the keyboard or mouse is touched. The system resumes in different ways as defined by Power Management Setup screen in BIOS.

D. System Reset Switch Connector

This connector should be connected to the reset switch on the front panel of the system case. The reset switch allows you to restart the system without turning the power off.

E. Speaker Connector

This 4-pin connector connects to the case-mounted speaker

F. IDE Activity LED Connector

The IDE activity LED lights up whenever the system reads/writes to the IDE devices.

Clear CMOS Data (JP1)

Pin	Definition
1~2	Normal (default)
2~3	Clear CMOS Data

To clear the contents of the CMOS, please follow the steps below.

1. Disconnect the system power supply from the power source.
2. Set the jumper cap at location 2~3 for 5 seconds, then set it back to the default position.
3. Connect the system's power and then start the system.
4. Enter BIOS's CMOS Setup Utility and choose Load Setup Defaults. Type Y and press enter.
5. Set the system configuration in the Standard CMOS Setup menu.

Power On By Keyboard (JP5)

Pin	Definition
1~2	Disable (default)
2~3	Enable

This board is able to be turned on by the PS/2 keyboard (hot key). To use this function, select a hot key of your choice at the PS2KB Wakeup option under Wake Up Events in the BIOS's Power On Management screen. You must also set this jumper's cap to pins 2-3 to use this function.

Power On By USB 0/1 and 2/3 (JP6/JP6A)

Pin	Definition
1~2	Disable (default)
2~3	Enable

This board is able to be turned on by a USB keyboard hot key or a USB mouse click. To use this function, select a hot key of your choice at the USB Kb Power Wake-Up From S3 option under Wake Up Events in the BIOS's Power On Management screen. You must also set both jumper's cap to pins 2-3 to use this function.

On board Audio (JP8)

Pin	Definition
1~2	Enable
2~3	Disable (default)

This function allows you to enable or disable the on board audio. You must set the jumper cap to pins 1-2 to enable or set pins 2-3 to disable this function.

On board LAN (JP11)

Pin	Definition
1~2	Enable
2~3	Disable (default)

This function allows you to enable or disable the on board LAN. You must set the jumper cap to pins 1-2 to enable or set pins 2-3 to disable this function.

CD-ROM Audio-in Connector (CN2)

Use the audio cable enclosed with your CD-ROM disk drive to connect the CD-ROM to your mainboard. This will enable your CD-ROM's audio function.

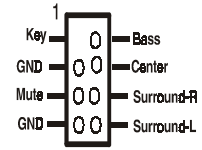
CD-ROM Audio-in Connector (CN2A)

Use the audio cable enclosed with your CD-ROM disk drive to connect the CD-ROM to your mainboard. This will enable your CD-ROM's audio function.

Auxiliary Audio-in Connector (CN3)

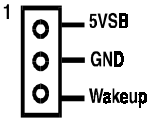
This connector is for use with a secondary CD-ROM, DVD-ROM or CDR/CDRW disk drive.

AC3 Surround/Center + Bass Connector (CN4B)



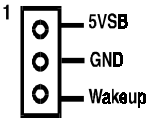
This connector is for Surround and Center+Bass speaker output ext. Plug in the optional AC3 Surround/Center+Bass jack extension into this connector. The black colored jack is for surround speaker output and the orange colored jack is for center+bass speaker output.

WOL (Wake-on-LAN) Connector (CN5)



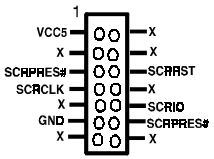
Enable the Wake Up On LAN selection in BIOS's Power Management Menu to use this function. The capability to remotely manage PCs on a network is a significant factor in reducing administrative and ownership costs. Magic Packet technology is designed to give WOL capability to the LAN controller. This header is used to connect an add-in NIC (Network Interface Card) which gives WOL capability to the mainboard.

WOM (Wake-on-Modem) Connector (CN5A)



Enable the Wake Up On Modem selection in BIOS's Power Management Menu to use this function. This header is used to connect an add-in modem card which gives WOM capability to the mainboard.

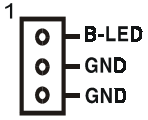
Smart Card Reader Connector (CN7)



This connector must be connected to an optional Smart card reader.

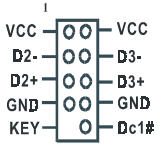
Sample of Smart Card Reader (Optional)

Blue LED Connector(CN17)



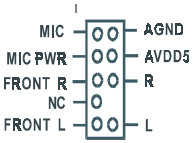
This feature work entirely the same as the power indicator LED, both shows the system's power status. The only difference is that this one is blue while the other is red LED.

USB 0/1 Ports and USB 2/3 Connectors (USB1/CN23)



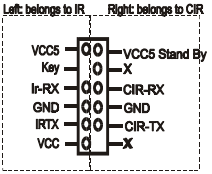
If you want to use a USB Keyboard, you must enable the USB keyboard support function in BIOS's Integrated Peripherals menu (See Section 3-4). This board contains a USB Host controller and includes a root hub with two USB 0/1 ports a connector for optional USB Adaptor (USB 3/4).

Front Panel Audio Connector (CN24)



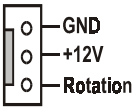
This connector give you the option of a front panel audio jack cable ext. to be plug into a special custom designed system case. Simply remove the two jumper caps at pin 5-6 and 9-10 then plug it into the (optional) cable ext. connector. Pin 5-6 and 9-10 are shorted (default) to enabled the back panel audio function.

IR/CIR Connector (IR2)



Select a UART Mode in BIOS's Integrated Peripherals menu the UART port to support IR/CIR functions. (See section 3-4)

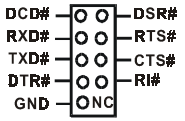
CPU/System/Case Cooling Fan Connectors (FAN1/FAN2/FAN3)



The board's management extension hardware is able to detect the CPU and system fan speed in rpm (revolutions per minute). The wiring and plug may vary depending on the manufacturer. On standard fans, the red is positive (+12V), the black is ground, and the yellow wire is the rotation signal.

FAN3 (Case Fan) is an independent power line that is not control by system health monitor and power management.

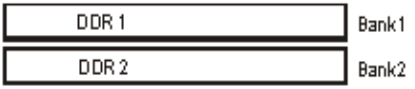
COM 2 Header (COM2)



Use the serial port cable(optional) enclosed with your mainboard. Plug into the header and attached the other end with the bracket to the system case back panel.

2-4 Main Memory Configuration

The DDR SDRAM memory system consists two banks and can supports the memory size up to **1GB** per bank**.** If you only use one bank it does not matter which one you use and if you use two or more banks, it does not matter which bank you install first.



DDR SDRAM Specifications

FSB Frequency	Internal System Bus Freq.
100 MHz	200 MHz
133 MHz	266 MHz

DIMM type: 2.5V, Registered 64/128/256-bit DDR SDRAM

Module size: Single/double-sided 64/128/256/512MB/1GB

Parity: Either parity or non-parity

Chapter 3

Phoenix-AwardBIOS Setup Program

Phoenix-AwardBIOS ROM has a built-in setup program that allows users to modify the basic system configuration. This information is stored in CMOS RAM so that it can retain the setup information, even when the power is turned off. When you turn on or reboot the system, press the Delete key to enter the Phoenix-AwardBIOS setup program. The primary screen as shown in Figure 3-1 is a list of the menus and functions available in the setup program. Select the desired item and press enter to make changes. Operating commands are located at the bottom of this and all other BIOS screens. When a field is highlighted, on-line help information is displayed on the right side of the screen.

Phoenix - AwardBIOS CMOS Setup Utility

▶ Standard CMOS Features	▶ Frequency/Voltage Setup
▶ Advanced BIOS Features	Load Fail-Safe Defaults
▶ Advanced Chipset Features	Load Optimized Defaults
▶ Integreted Peripherals	Set Supervisor Password
▶ Power Management Setup	Set User Password
▶ PnP/PCI Configurations	Save & Exit Setup
▶ PC Health Status	Exit Without Saving

Esc : Quit
F10 : Save & Exit Setup
↑↓→← : Select Item

Time, Date, Hard Disk Type...

Figure 3-1 Setup Program Initial Screen

3-1 Standard CMOS Setup

The Standard CMOS Setup allows users to configure system components such as hard disk drive, floppy disk drive and video display as well as date, time and boot-up error signaling. This configuration menu should be changed when installing a mainboard for the first time, changing hardware in your system such as the HDD, FDD, video display, or when the CMOS data has been lost or contaminated. Choose the Standard CMOS Setup option from the CMOS Setup Utility menu (Figure 3-1) to display the following screen.

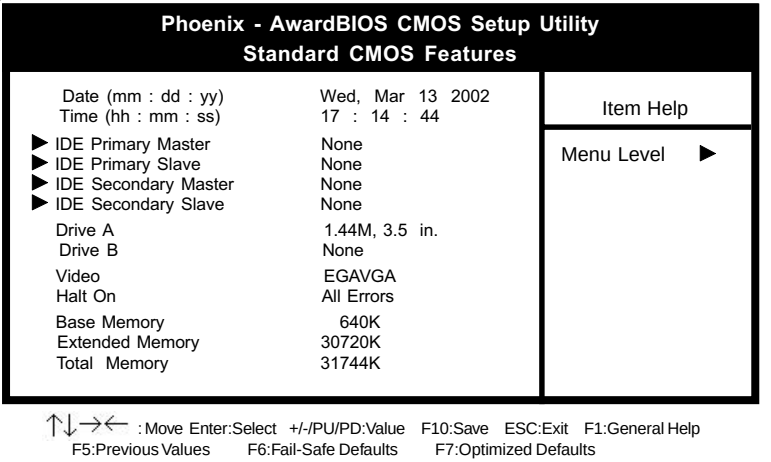


Figure 3-2 Standard CMOS Features Screen

Date/Time

Set the date and time. Do not skip this function as all of your timed events such as power management, saving files, etc. are based on this timer.

Hard Disk Setup (Primary/Secondary; Master/Slave)

This category identifies up to four IDE hard disk drives that have been installed in the computer. This section does not show information on other IDE devices such as CD-ROM drives or other hard drive types such as SCSI drives.

Floppy Disk Drives

Choose the memory capacity and disk size that corresponds with that of your floppy disk drive(s).

Video

Select the type of video adapter present in your system. You can ignore this setting if you are using a VGA monitor since VGA BIOS automatically configures this setting.

Halt

When the system is powered on, BIOS performs a series of diagnotic tests called POST (Power On Self Test). This function stops the computer if BIOS detects a hardware error. You can tell BIOS to halt on all errors, no errors, or not to halt on specific errors.

3-2 Advanced BIOS Features

By choosing the Advanced BIOS Features option from the Standard CMOS Features menu (Figure 3-1), the screen below is displayed. This sample screen is for referrence use only.

Phoenix - AwardBIOS CMOS Setup Utility
Advanced BIOS Features

		Item Help
Anti-Virus Protection	**Disabled**	Menu Level ►
CPU L1 & L2 Cache	**Enabled**	
Quick Power On Self Test	**Enabled**	
First Boot Device	**Floppy**	
Second Boot Device	**CDROM**	
Third Boot Device	**HDD-0**	
Boot Other Device	**Enabled**	
Swap Floppy Drive	**Disabled**	
Boot Up Floppy Seek	**Disabled**	
Boot Up NumLock Status	**On**	
Gate A20 Option	**Fast**	
Typematic Rate Setting	**Disabled**	
x Typematic Rate (Chars/Sec)	**6**	
x Typematic Delay (Msec)	**250**	
Security Option	**Setup**	
APIC Mode	**Enabled**	
MPS Version Control For OS	**1.4**	
OS (Select For DRAM > 64MB)	**Non-OS2**	
Small Logo(EPA) Show	**Enabled**	

↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 3-3 Advanced BIOS Features Screen

A. Virus Warning

Anti-Virus Protection is a code incorporated in the mainboard's BIOS firmware. During the boot-up sequence, BIOS loads before loading of the partition table or boot sector. Anti-Virus Protection loads with BIOS and is able to detect boot-up viruses before they have a chance to infect the hard drive. Anti-Virus Protection employs rule-based logic that doesn't look for specific viruses but rather detects patterns found in every virus, eliminating the need to perform periodical version updates after new viruses have been found.

B. CPU L1 and L2 Cache

Cache memory is much faster than conventional DRAM system memory. These fields allow you to enable or disable the CPUs Level 1 built-in cache and Level 2 external cache. Both settings are left enabled to significantly increase the performance of your computer.

C. Boot Up Features

After turning on the system, BIOS will perform a series of device initializations and diagnostic tests discussed below.

Quick Power On Self Test (POST)

Enable this function to reduce the amount of time required to run the POST (Power On Self Test). BIOS saves time by skipping some items during POST. It is recommended that you disable this setting. Discovering a problem during bootup is better than loosing data during your work.

First/Second/Third/Boot Other Device

This option sets the sequence of drives BIOS attempts to boot from after POST completes. BIOS will search these drives for an operating system.

Swap Floppy Drive

Enabling this function will swap the floppy drive assignment so that drive A will function as drive B, and drive B will function as drive A. Note that the boot sequence assignment mentioned directly above does not inlcude booting from floppy drive B. This function is useful if floppy drives B and A are of a different format and you want to boot from floppy drive B.

Boot up Floppy Seek

During POST, BIOS will determine if the installed floppy disk drive has 40 or 80 tracks. A 360K drive has 40 tracks and 720K, 1.2M and 1.44M drives have 80 tracks. All modern floppy disk drives have 80 tracks.

Boot Up NumLock Status

This function defines the keyboard's numberpad as number keys or arrow keys.

D. Gate A 20 Option

Gate A20 refers to the way the system addresses memory above 1 MB (extended memory). When set to Fast, the system chipset controls Gate A20. When set to Normal, a pin in the keyboard controller controls Gate A20. Setting Gate A20 to Fast improves system speed, particularly with OS/2 and Windows.

E. Keyboard Interface

Typematic Rate Setting

When enabled, you can set the following two typematic control items. When disabled, keystrokes are determined arbitrarily by the keyboard controller in your system.

Typematic Rate (Chars/Sec)

The typematic rate sets the rate at which characters on the screen repeat when a key is pressed and held down.

Typematic Delay (Msec)

The typematic delay sets how long after you press a key that a character begins repeating.

F. Security Option

The Supervisor and/or User Password functions shown in Figure 3-1 must be set to take advantage of this function. See Section 3-11 for password setting information. When the Security Option is set to System, a password must be entered to boot the system or enter the BIOS setup program. When the Security Option is set to Setup, a password is required to enter the BIOS setup program.

G. OS Select (For DRAM > 64MB)

If your system's DRAM is larger than 64MB and you are running OS/2, select OS/2 as the item value. Otherwise, set the item value to Non-OS/2 for all other operating systems.

3-3 Advance Chipset Features

By choosing the Advanced Chipset Features option from the Standard CMOS Features menu(Figure 3-1), the screen below is displayed.This sample screen is for referrence use only.

Phoenix - AwardBIOS CMOS Setup Utility
Advanced Chipset Features

		Item Help
DRAM Timing Selectable	By SPD	Menu Level ►
CAS Latency Time	1.5	
Active to Precharge Delay	7	
DRAM RAS# to CAS# Delay	3	
DRAM RAS# Precharge	3	
VGA Turbo Mode	Enabled	
Memory Frequency For	Auto	
System BIOS Cacheable	Enabled	
Memory Hole At 15M-16M	Disabled	
Delayed Transaction	Enabled	
Delay Prior to Thermal	16 Min	
AGP Aperture Size (MB)	64	
On-Chip Video Window Size	128MB	
On-Chip Frame Buffer Size	8MB	
Flash BIOS Protection	Disabled	

↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 3-4 Advanced Chipset Features Screen

All of the above settings have been determined by the mainboard manufacturer and should not be changed unless you are absolutely sure of what you are doing. Explanation of the DRAM timing and chipset features setup is lengthy, highly technical and beyond the scope of this manual. Below are some abbreviated descriptions of the functions in this setup menu.

A. AGP Aperture Size

Select the size of Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation.

B. Flash BIOS Protection

The mainboard manufacturer developed BIOS protection technology that protects the System BIOS from accidental corruption by unauthorized users or computer viruses. When enabled, the BIOS data cannot be changed when attempting to update BIOS with the the FLASH utility. When disabled, the BIOS data can be updated by using the FLASH utility.

3-4 Integrated Peripherals

This section provides information on setting peripheral devices. By choosing the Integrated Peripherals option from the Standard CMOS Features menu (Figure 3-1), the screen below is displayed. This sample screen is for referrence use only.

Phoenix - AwardBIOS CMOS Setup Utility
Integrated Peripherals

		Item Help
► OnChip IDE Device	Press Enter	
► OnChip PCI Device	Press Enter	
► SuperIO Device	Press Enter	Menu Level ►
USB Controller	Enabled	
USB Keyboard Support	Disabled	
Init Display First	Onboard/AGP	

↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 3-5 Integrated Peripherals Screen

A. OnChip IDE Device

On-chip Primary/Secondary PCI IDE

You can set this to disable the On-chip IDE controller if you are going to add a higher performance IDE board.

IDE Primary/Secondary Master/Slave PIO

The four IDE PIO (programmed Input/Output) fields let you set a PIO mode (0-4) for each IDE device that the internal PCI IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

B. OnChip IDE Device

AC97 Audio

Select Enabled if you install the audio riser card.

AC97 Modem

Select Enabled if you install the soft modem riser card.

C. Super IO Device

Onboard FDC Controller

Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install an add-in FDC or the system has no floppy drive, select Disabled in this field.

COM2 Select

This function allows you to select an operating mode for the second serial port. (Standard RS-232C serial port/IrDA/ASKIR/SCR infrared port)

Onboard Parallel Port

Select a logical LPT port address and corresponding interrupt for the physical parallel port.

D. USB Controller

Enable the on-board Universal Serial Bus (USB) controller if you want to connect a USB keyboard to your system. Note that if this setting is disabled, you can still temporarily use a USB keyboard during bootup so that you can enter BIOS and enable this setting. If you pass the bootup stage without enabling this function, your PS/2 keyboard will no longer work.

E. USB Keyboard Support

If your current operating system doesn't support USB drivers (i.e., DOS) this function must be enabled for USB keyboard operation in these operating systems.

F. Init Display First

This function allows user to choose between AGP slot or PCI slot to initialise display first .

3-5 Power Management Setup

This section provides information on the Green PC power management funtcions. By choosing the Power Management Setup option from the Standard CMOS Features menu (Figure 3-1), the screen below is displayed. This sample screen is for referrence use only.

Phoenix - AwardBIOS CMOS Setup Utility
Power Management Setup

		Item Help
ACPI Suspend Type	S1(POS)	
x Run VGABIOS if S3 Resume	Auto	
Power Management	User Define	Menu Level ►
Video Off Method	DPMS	
Video Off In Suspend	Yes	
Suspend Type	Stop Grant	
MODEM Use IRQ	4	
Suspend Mode	Disabled	
HDD Power Down	Disabled	
Soft-Off by PWR-BTTN	Instant-Off	
** Reload Global Timer Events **		
Primary IDE 0	Disabled	
Primary IDE 1	Disabled	
Secondary IDE 0	Disabled	
Secondary IDE 1	Disabled	
FDD,COM,LPT Port	Disabled	
PCI PIRQ[A-D]#	Disabled	
►Wake Up Events	Press Enter	

↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 3-6 Power Management Setup Screen

A. ACPI Suspend Type

This feature allows user to select a suspend type for the operating system to turn off peripherals devices, such as CD-ROM players, when they are not in use.

B. Power Management

Power management allows the computer to save electricity when it is not in use by entering increasingly deep power saving modes.

C. Video Off Method

This function serves as both a screen saver and power saver for monitors. See the next function, Video Off After, for setting the video timer.

Blank - BIOS will only blank the monitor's screen. The electricity saved in this mode is negligible and this function is only used as a screen saver to prevent screen damage while the screen is on but not in use.

V/H SYNC+Blank - The system turns off the vertical and horizontal synchronization ports, writes blanks to the VGA buffer and the monitor's electron gun turns off. This function requires a monitor with Green features in order to take advantage of the power saving function. If you enable this function and do not have a Green monitor, the result will be the same as if you had selected Blank. This function serves as both a screen saver and an electricity saver.

DPMS Supported - Select this option if your video card supports the Display Power Management Signaling (DPMS) standard (i.e., you have a monitor that supports Green features). Use software supplied by your your video subsystem to set video power management options.

D. Video Off In Suspend

This setting determines when the monitor enters power saving mode. If set to Yes, the monitor enters the power saving mode after the chosen event expires. The Power Management function must be enabled to use this function.

E. Modem Use IRQ

If your computer has an modem, use this function to tell BIOS which IRQ is being occupied by the modem card. When the system is in Green mode, the modem requires an IRQ assignment to wake up the system and perform tasks. This assignment is compliant with the APM 1.2 specification and is to be used in coordination with APM 1.2 compliant operating systems.

F. Suspend Mode

The Power Management function must not be set to disabled to enable this function. If the system runs in Standby mode and the Suspend timer expires, all devices regulated by power management will shut off and the CPU speed will be 0 MHz.

G. HDD Power Down

The Power Management function must not be set to disabled to enable this function. When the HDD idle time has elapsed, BIOS sends a command to the hard disk to turn off the motor. Set a time between 1 and 15 to indicate time required to wait before the hard drive enters a power saving mode. Some old hard drives may not support this function.

H. Soft-Off by PWR-BTN

When set to Delay 4 Sec., this function allows the power button to put the system in Suspend, a power saving mode. See Section 2-3 for operation instructions of the over-ride power button operation wich puts the system in Suspend mode. When set to Instant-Off the Soft-Off by PWR-BTN function is disabled and the computer turns completely off when the power button is pressed.

I. Wake Up Events

Power On PCI Card

When enabled, a PCI interface that receives a signal will wake up the system from soft off and green mode.

Power On By Modem

When enabled, a modem that receives a signal will wake up the system from soft off and green mode. You should connect the modem to the COM port and turn on the resume event in green mode.

Wake Up On LAN

When enabled, a LAN that receives a signal will wake up the system from soft off and green mode.

USB Power On from S3

When enabled, the system is able to power on from S3 mode by a USB keyboard hot key or mouse click.

Power On By Alarm

When enabled, this setting allows the system to turn back on at a designated time of the month. User must designate date of month and time of day. This function is only available when using an ATX power supply and the Software Power-Off function to turn off the computer. See the Software Power-Off feature in Section 2-4 of this manual for instructions.

Power On Function

Select Button Only to control your computer power by the button on your system case. Set this function to Any Key to turn on the computer by touching any key on the keyboard. Set this function to Mouse Click to turn on the computer by clicking on the mouse. If you set this function to Hot Key or Password you must designate the keystrokes that will turn on the computer. Note that the power button is always able to turn on the computer regardless of how this function is set.

3-6 PNP/PCI Configuration

This section provides IRQ and DMA setting information. By choosing the PNP/PCI Configuration option from the Standard CMOS Features menu (Figure 3-1), the screen below is displayed. This sample screen is for referrence use only.

Phoenix - AwardBIOS CMOS Setup Utility
PnP/PCI Configurations

		Item Help
Reset Configuration Data	Disabled	
Resources Controlled By	Auto(ESCD)	Menu Level ►
x IRQ Resources	Press Enter	
PCI/VGA Palette Snoop	Disabled	
Slot 4 Use IRQ No.	Auto	
Slot 1,5 Use IRQ No.	Auto	
Slot 2,6 Use IRQ No.	Auto	
Slot 3 Use IRQ No.	Auto	
FDD IRQ Can Be Free	Yes	

↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 3-7 PnP/PCI Configurations Screen

A. Resources Controlled By

When set to Manual the system BIOS will not refer to the ESCD for IRQ & DMA information. Instead, it will refer to the items in the setup menu for assigning IRQ & DMA. When set to Auto the system BIOS will refer to the ESCD for all legacy information.

ESCD(Extended System Configuration Data) provides a detailed format of the configuration data structures stored in flash memory. Each data structure defines the resources used by a device or a card in the system. This includes legacy and PCI/ISA PnP devices.

B. FDD IRQ Can Be Free

This function allows user to choose if the FDD IRQ is able to be freed up. The default setting is Yes and this does not allow the IRQ to be free.

3-7 PC Health Status

By choosing the PC Health Status option from the CMOS Setup Utility menu (Figure 3-1), the screen below is displayed. This field shows you the current system temperature/ external voltages input and the current CPU FAN and System FAN operating speed.

Phoenix - AwardBIOS CMOS Setup Utility
PC Health Status

		Item Help
Shutdown Temperature	Disabled	Menu Level ►
CPU VCore	1.75V	
+1.5V	1.49V	
+3.3V	3.32V	
+ 5 V	5.05V	
+ 12V	12.18V	
- 12V	-11.98V	
- 5 V	-5.02	
5VSB(V)	4.89V	
Voltage Battery	2.98V	
Current SYSTEM Temp.	48 °C	
Current CPU Temp.	48 °C	
Current CPU FAN Speed.	4500 RPM	
Current SYSTEM FAN Speed.	4500 RPM	

↑↓→← : Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 3-8 PC Health Status Screen

3-8 Frequency/Voltage Control

By choosing the Frequency/Voltage Control option from the CMOS Setup Utility menu (Figure 3-1), the screen below is displayed. This sample screen is for referrence use only.

Phoenix - AwardBIOS CMOS Setup Utility
Frequency/Voltage Control

		Item Help
CPU Vcore Select	Default	Menu Level ►
CPU Clock Ratio	X 8	
Auto Detect PCI Clk	Enabled	
Linear Spread Model	4	
Linear Spread Base	4	
Linear Spread Range	2	
CPU Clock	100 MHz	

↑↓→← : Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 3-9 Frequency/Voltage Control Screen

A. CPU Clock Ratio

This feature allows user to manually configure your CPU clock ratio according to your processor's specifications.

B. CPU Clock

This feature allows the system memory to run at CPU clock speed. The default setting is at 100MHz.

3-9 Load Fail-Safe Defaults

Load Fail-Safe Defaults loads the default BIOS values directly from the CMOS Setup Utility menu (Figure3-1). If the stored record created by the setup program becomes corrupted and therefore unusable, these defaults will be loaded automatically when you turn on the computer.

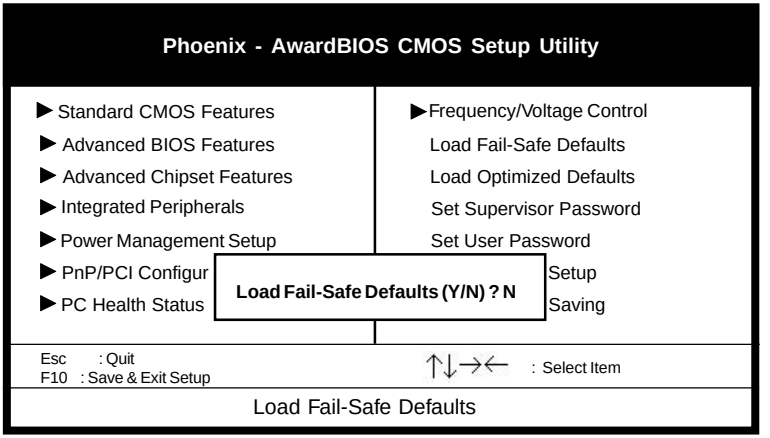


Figure 3-10 Load Fail-Safe Defaults Screen

3-10 Load Optimized Defaults

Load Optimized Defaults loads the default system values directly from the CMOS Setup Utility menu (Figure3-1). If the stored record created by the setup program becomes corrupted and therefore unusable, these defaults will be loaded automatically when you turn on the computer.

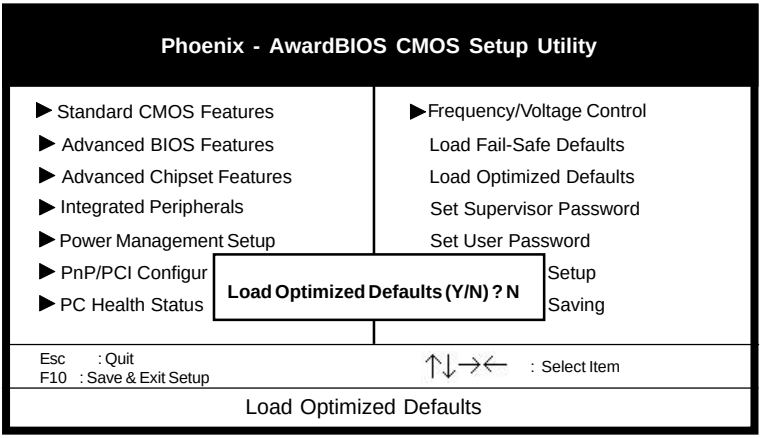


Figure 3-11 Load Optimized Defaults Screen

3-11 Supervisor Password & User Password Setting

There are four different variables that control password settings. The first two are located under the Security Option function in BIOS Features Setup Menu (Figure 3-1). When the Security Option function is set to Setup, a password is required to enter BIOS and change BIOS settings. When the Security Option function is set to System, a password is required to enter both BIOS and the computer's operating system (for example Windows 98) found on the boot drive.

The third and fourth variables are user password and supervisor password selected in BIOS (Figure 3-1). The main purpose of separating user and supervisor is to allow only the supervisor to have control over the settings in BIOS. The user, on the other hand, is only allowed to access the computer's operating system and change the user password in BIOS. Note that when there is no supervisor password set, the user password controls access to all BIOS settings.

3-12 Save and Exit Setup

If you select this and type Y (for yes) followed by the [Enter] key, the values entered in the setup utilities will be recorded in the CMOS memory of the BIOS chip.

3-13 Exit Without Saving

Selecting this option and pressing Y followed by the [Enter] key lets you exit the Setup program without recording any new values or changing old ones.

Appendix I

CMedia 8738 Audio Subsystem

The CMedia 8738 offers a new generation PCI audio solution: it utilizes the state-of-the-art CRL® 3D Audio technology (HRTF 3D positional audio), and supports Microsoft® Direct Sound®3D and Aureal®'s A3D® interfaces. Better yet, it supports two/four/six speakers and DLS based (Down Loadable Sound) wave table music synthesizer which supports the Direct Music®.

Feature

- Advanced 64-voice wavetable synthesizer
- Programmable independent sample rate form 4KHz to 48KHz for record and playback
- Full-duplex operation for simultaneous recording and playback
- Supports MS DLS (Downloadable sample) level-1 technology with limitless variety of instrument samples using PC RAM
- Supports HRTF 3D positional audio with MSDS, DS3D, DirectMusic, Aureal A3D and Creative EAX (Environment Audio Extensions), C3DX APIs
- 6-Channel speaker audio support is easy to build up a Home Theater environment
- Supports Fiber Optic module for Internet music, PC, and MD connections
- Supports MIDI and dual game ports
- Embedded 32OHM .5w earphone amplifier

6 Speakers System

The CMedia 8738 Audio subsystem provides 3 wave channels (front/rear/center+bass), known as the 6 speakers system. When games or application programs via DirectSoundR 3D or A3DR 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:

Installation

1. 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. Install the audio driver and Audio Rack application software.
3. There is a multi 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.

Multi Speaker selector Button

Note: You can test your multi-channel system by clicking the Multi-Channel Audio Demo at C:\WINDOWS\Start Menu\Programs\PCI Audio Application\Multi-Channel Audio Demo(as shown in figure below).