Trademarks

Notice:

Owing to Microsoft's certifying schedule is various to every supplier, we might have some drivers not certified yet by Microsoft. Therefore, it might happen under Windows XP that a dialogue box (shown as below) pop out warning you this software has not passed Windows Logo testing to verify its compatibility with Windows XP. Please rest assured that our RD department has already tested and verified these drivers. Click the "Continue Anyway" button and go ahead the installation.
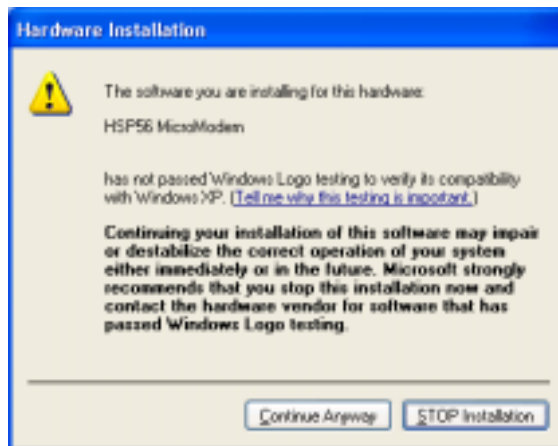
Table of Contents

Chapter 1

Introduction

This mainboard has a **Socket-478** supporting **Intel Pentium 4/ Hyper Threading Technology** processors with front-side bus (FSB) speeds up to 400/**533 MHz**.

Based on the highly integrated **VIA APOLLO P4X400**, this mainboard incorporates the VIA **VT8754** Northbridge and **VT8235** Southbridge chipsets that support **AC 97 audio codec** and provide **Ultra DMA** 33/66/**100/133** function. It also supports the Xabre200 GPU, which integrates a 256-bit 3D/2D graphics engines and motion compensation MPEG 1/MPEGII accelerator.

The built-in VIA VT8235 PCI USB 2.0 Controller is compliant with Universal Serial Bus Specification Revision 2.0.

The USB 2.0 supports data transfer rates up to 480Mb/sec for high-speed devices and specifies a microframe that will be $1/8^{th}$ of a 1msec frame. This allows the USB 2.0 devices to have small buffers even at high data rates. The USB 1.1 connectors and other full speed cables can support the higher speed of USB 2.0 without any changes.

This mainboard comes with an advanced full set of I/O ports, such as dual channel IDE interfaces, a floppy controller, one high-speed serial and VGA port, an EPP/ECP capable bi-directional parallel port connector, four USB (Universal Serial Bus) connector, a PS/2 keyboard and mouse connectors. In addition to superior hardware capabilities, the mainboard has three PCI local bus slots and one communication and networking riser (CNR) slot which provide expandability for add-on peripheral cards.

The mainboard is an ATX mainboard that uses a 4-layers printed circuit board and measures 305 mm x 244 mm.

Note: You must initiate the HT CPU function through BIOS setup. It is strongly recommended you refer to the Appendix (page 57) for relative details.

Key Features

This mainboard has these key features:

Socket-478 Processor

♦ Supports **Intel Pentium 4 series** CPUs
♦ Supports **Intel Pentium 4 series** CPU with **Hyper Threading** Technology
♦ Supports up to 400/**533** MHz front side bus (FSB)

> **Hyper-Threading** technology enables the operating system into thinking it's hooked up to two processors, allowing two threads to be run in parallel, both on separate 'logical' processors within the same physical processor.

Memory Support

♦ Three 184-pin 2.5V DDR DIMM sockets
♦ Support a total capacity of 3GB

Integrated VGA Specification

♦ GPU (Graphics Processing Unit)
– Xabre 200 AGP8X 256-bit GPU clock runs from 200MHz
♦ DISPLAY MEMORY
– Built-in 64MB DDR onboard runs from 400MHz (DDR400)
♦ 3D ENGINE FEATURES
– Supports Direct 3D version 8.1; pixel shader version 1.3
– Supports AGP 8X for texture/vertex fetch
– Built-in 32-bit floating point VLIW Geometry Transform/Lighting (T/L) and triangle setup engine
– Built-in 4 pixel programmable rendering pipelines and 8 texture units (4P8T)
– Supports up to 2048x2048 texture size
– Built-in hardware stereo auto rendering engine
– Supports 2X/4X full scene anti-aliasing
♦ 2D ENGINE FEATURES
– Built-in Direct Draw Accelerator
– MPEG-2 MP @ ML standards compliant
– Built-in motion compensation logig

- Supports up to 20Mbit/sec bit rate decoding
- Direct DVD to TV playback
- Supports single video windows with overlay function
- Supports graphics and video overlay function
- Supports DVD sub-picture playback overlay
- Built-in independent Gamma correction RAM
♦ RESOLUTION
- Supports VESA standards super high resolution graphics modes, up to 2048x1536x32 bpp

AC97 Audio Codec

♦ Compliant with AC'97 2.2 specification
♦ supports 18-bit ADC (Analog Digital Converter) and DAC (Digital Analog Converter) resolution
♦ Support 18-bit stereo full-duplex codec with independent and variable sampling rates
♦ Support for four analog line-level stereo inputs

Expansion Options

The mainboard comes with the following expansion options:

♦ Three 32-bit PCI slots
♦ Supports Ultra DMA bus mastering with transfer rates of 33/66/100/133 MB/sec
♦ Two IDE connectors which support four IDE channels and a floppy disk drive interface
♦ A Communications Network Riser (CNR) slot (AC97 interface only)

Onboard I/O Ports

The mainboard has a full set of I/O ports and connectors:

♦ Two PS/2 ports for mouse and keyboard
♦ One serial port
♦ One VGA port
♦ One parallel port
♦ Four USB ports
♦ One LAN port (optional)
♦ Audio jacks for microphone, line-in and line-out

Fast Ethernet LAN (optional)

- **Ethernet 10BASE-T and 100BASE-TX**
- Dual Speed – 100/10 Mbps
- Half And Full Duplex
- Meet All Applicable IEEE 802.3, 10Base-T and 100Base-Tx Standards
- Adaptive Equalizer

USB 2.0

- Compliant with Universal Serial Bus Specification Revision 2.0
- Supports data transfer rates up to 480Mb/sec for high-speed devices and specifies a microframe that will be $1/8^{th}$ of a 1msec frame
- Compliant with Enhanced Host Controller Interface (EHCI) Specification Revision 0.95 and Universal Host Controller Interface (UHCI) Specification Revision 1.1
- PCI multi-function device consists of two UHCI Host Controllers for full/low-speed signaling and one EHCI Host Controller core for high-speed signaling
- Supports PCI-Bus Power Management Interface Specification release 1.1
- Legacy support for all downstream facing ports

IEEE1394a (optional)

- Provides high performance serial connectivity
- Compliant with 1394 Open HCI 1.0 and 1.1 with DMA engine support for high performance data transfer via a 32-bit bus master PCI host bus interface
- Supports 100, 200 and 400 Mbit/sec transmission via an integrated 3-port PHY
- Performs arbitration requesting, packet generation and checking, and bus cycle master operations

BIOS Firmware

This mainboard uses Award BIOS that enables users to configure many system features including the following:

- ♦ Power management
- ♦ CPU and memory timing
- ♦ Modem wake up alarms

The firmware can also be used to set parameters for different processor clock speeds.

Bundled Software

- ♦ **PC-Cillin 2002** provides automatic virus protection under Windows 98/ME/NT/2000/XP
- ♦ **MediaRing Talk** provides PC to PC or PC to Phone internet phone communication
- ♦ **3Deep** delivers the precise imagery and displays accurate color in your monitor
- ♦ **PC DJ** is a dual-MP3 player that enables users to actually mix music right on their own personal computers.
- ♦ **Adobe Acrobat Reader V5.0** is the software to help users read .PDF files.

Dimensions

- ♦ ATX form factor of 305 x 244mm

Note: Hardware specifications and software items are subject to change without notification.

Package Contents

Attention: This mainboard serial has three models, M958FHLU (IEEE1394a, Hyper Threading CPU, LAN, USB2.0), M958HLU (Hyper Threading CPU, LAN, USB2.0) and M958HU (Hyper Threading CPU, USB2.0).
Please contact your local supplier for more information about your purchased model. Each model will support different specification listed as below:

Model	Specification
M958FHLU	Support Hyper Threading CPU, IEEE1394a port, Onboard VT6103 LAN chipset, and USB 2.0 + RJ-45 LAN connector
M958HLU	Support Hyper Threading CPU Onboard VT6103 LAN chipset, and USB 2.0 + RJ-45 LAN connector
M958HU	Support Hyper Threading CPU and USB2.0

Your mainboard package contains the following items:
- ❑ The mainboard
- ❑ The User's Manual
- ❑ One diskette drive ribbon cable
- ❑ One IDE drive ribbon cable
- ❑ Software support CD

Optional Accessories
You can purchase the following optional accessories for this mainboard.
- ❑ Extended USB module
- ❑ CNR v.90 56K Fax/Modem card
- ❑ Extended IEEE1394a module (optional)

Static Electricity Precautions

Static electricity could damage components on this mainboard. Take the following precautions while unpacking this mainboard and installing it in a system.

1. Don't take this mainboard and components out of their original static-proof package until you are ready to install them.
2. While installing, please wear a grounded wrist strap if possible. If you don't have a wrist strap, discharge static electricity by touching the bare metal of the system chassis.
3. Carefully hold this mainboard by its edges. Do not touch those components unless it is absolutely necessary. Put this mainboard on the top of static-protection package with component side facing up while installing.

Pre-Installation Inspection

1. Inspect this mainboard whether there are any damages to components and connectors on the board.
2. If you suspect this mainboard has been damaged, do not connect power to the system. Contact your mainboard vendor about those damages.

Chapter 2

Mainboard Installation

To install this mainboard in a system, please follow these instructions in this chapter:

❑ Identify the mainboard components
❑ Install a CPU
❑ Install one or more system memory modules
❑ Make sure all jumpers and switches are set correctly
❑ Install this mainboard in a system chassis (case)
❑ Connect any extension brackets or cables to connecting headers on the mainboard
❑ Install other devices and make the appropriate connections to the mainboard connecting headers

Note:
1. Before installing this mainboard, make sure jumper JP1 is under Normal setting. See this chapter for information about locating JP1 and the setting options.
2. Never connect power to the system during installation; otherwise, it may damage the mainboard.

Mainboard Components

Identify major components on the mainboard via this diagram underneath.
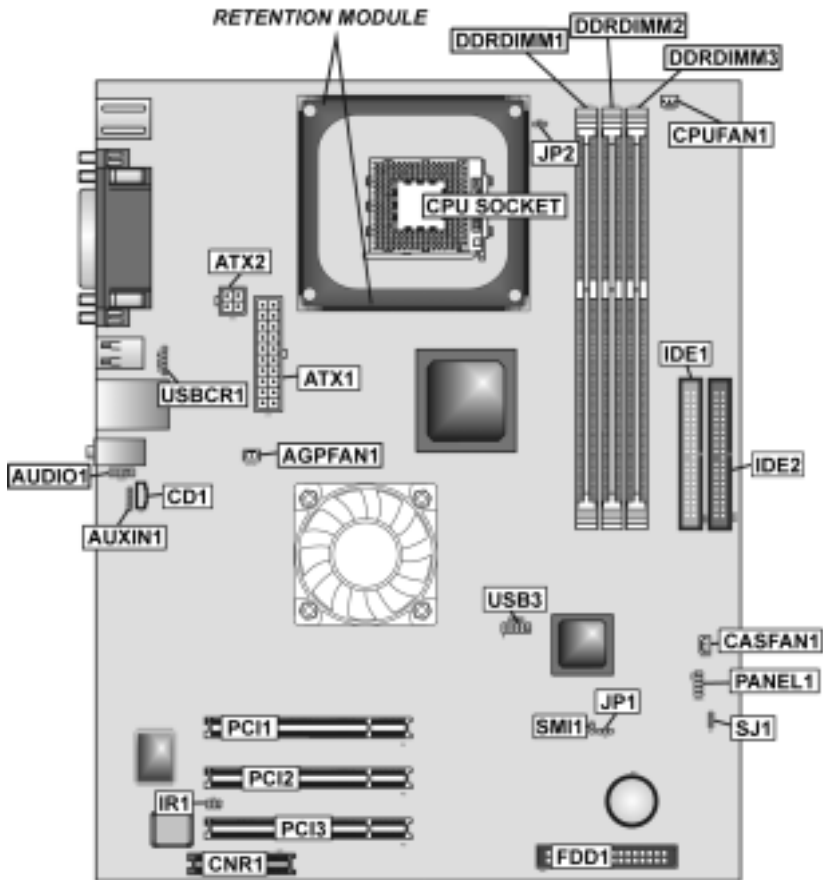
Note: Any jumpers on your mainboard not appearing in this illustration are for testing only.

I/O Ports

The illustration below shows a side view of the built-in I/O ports on the mainboard.

(optional)
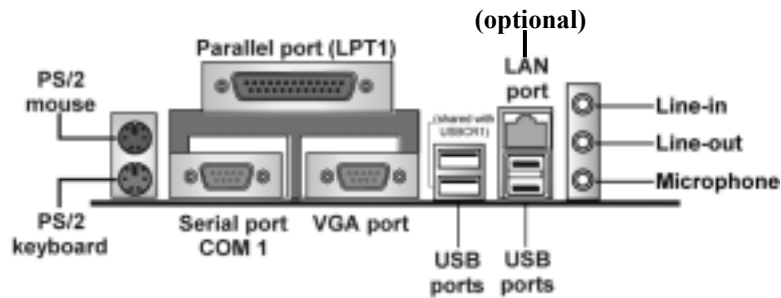
PS/2 Mouse	Use the upper PS/2 port to connect a PS/2 pointing device.
PS/2 Keyboard	Use the lower PS/2 port to connect a PS/2 keyboard.
LPT1	Use LPT1 to connect printers or other parallel communications devices.
COM1	Use the COM port to connect serial devices such as mice or fax/modems. COM1 is identified by the system as COM1.
VGA	Use the VGA port to connect VGA devices.
LAN Port (optional)	Connect an RJ-45 jack to the LAN port to connect your computer to the Network.
USB Ports	Use the USB ports to connect USB devices.
Audio Ports	Use the three audio ports to connect audio devices. The first jack is for stereo Line-In signal. The second jack is for stereo Line-Out signal. The third jack is for Microphone.

Installing the Processor

This mainboard has a Socket 478 processor socket. When choosing a processor, consider the performance requirements of the system. Performance is based on the processor design, the clock speed and system bus frequency of the processor, and the quantity of internal cache memory and external cache memory.

CPU Installation Procedure
Follow these instructions to install the CPU:

1. Unhook the CPU socket's locking lever by pulling it away from socket and raising it to the upright position.
2. Match the pin 1 corner of CPU socket to the one of processor, and insert the processor into the socket. Do not use force.
3. Push the locking lever down and hook it under the latch on the edge of socket.
4. Apply thermal grease to the top of the CPU.
5. Lower the CPU fan/heatsink unit onto the CPU and CPU socket, and then use the retention module clamps to snap the fan/heatsink into place.
6. Plug the CPU fan power cable into the CPU cooling fan power supply connector on the mainboard.

Installing Memory Modules

This mainboard accommodates three 184-pin 2.5V unbuffered Double Data Rate SDRAM (DDR SDRAM) Dual Inline Memory Module (DIMM) sockets, and supports up to 3.0 GB of 266/333 MHz DDR SDRAM.

DDR SDRAM is a type of SDRAM that supports data transfers on both edges of each clock cycle (the rising and falling edges), effectively doubling the memory chip's data throughput. DDR DIMMs can synchronously work with 100 MHz or 133 MHz memory bus.

DDR SDRAM provides 1.6 GB/s or 2.1 GB/s data transfer rate depending on whether the bus is 100 MHz or 133 MHz. DDR SDRAM uses additional power and ground lines and requires 184-pin 2.5V unbuffered DIMM module.

DIMM1 DIMM2 DIMM3
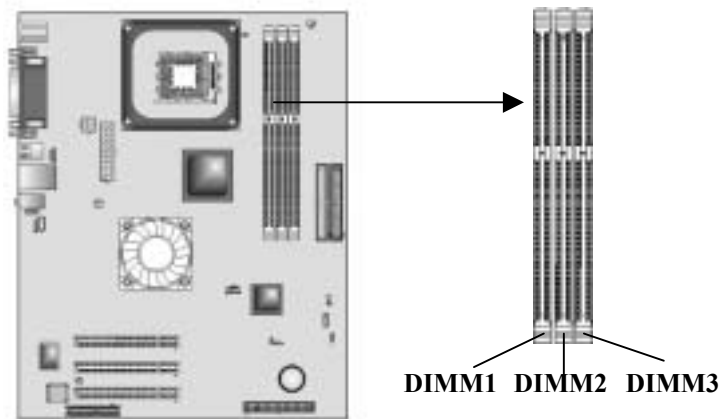
Installation Procedure

These modules can be installed with up to 3 GB system memory. Refer to the following to install the memory module.

1. Push the latches on each side of the DIMM socket down.
2. Align the memory module with the socket. The DIMM sockets are keyed with notches and the DIMMs are keyed with cutouts so that they can only be installed correctly.
3. Check that the cutouts on the DIMM module edge connector match the notches in the DIMM socket.
4. Install the DIMM module into the socket and press it firmly down until it is seated correctly. The socket latches are levered upwards and latch on to the edges of the DIMM.
5. Install any remaining DIMM modules.

Jumper Settings
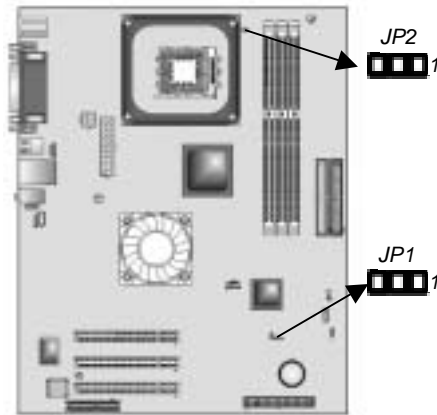
JP1: Clear CMOS Jumper
Use this jumper to clear the contents of the CMOS memory. You may need to clear the CMOS memory if the settings in the Setup Utility are incorrect and prevent your mainboard from operating. To clear the CMOS memory, disconnect all the power cables from the mainboard and then move the jumper cap into the CLEAR setting for a few seconds.

Function	Jumper Setting
Normal	Short Pins 1-2
Clear CMOS	Short Pins 2-3

JP2: CPU Bus Speed Select Jumper
This jumper enables to set the CPU frequency.

Function	Jumper Setting
Auto	Short Pins 1-2
533 MHz	Short Pins 2-3

16

Install the Mainboard

Install the mainboard in a system chassis (case). The board is an Micro-ATX size mainboard. You can install this mainboard in an ATX case. Make sure your case has an I/O cover plate matching the ports on this mainboard.

Install the mainboard in a case. Follow the instructions provided by the case manufacturer using the hardware and internal mounting points on the chassis.
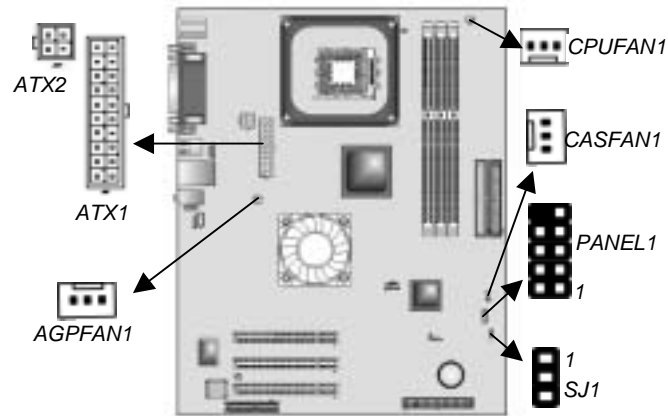
Connect the power connector from the power supply to the **ATX1** connector on the mainboard. **ATX2** is the CPU Vcore power connector.

Connect the CPU cooling fan cable to **CPUFAN1**, and the case cooling fan connector to **CASFAN1**. The VGA cooling fan cable is already connected to **AGPFAN1**.

Connect the case LED cable to **SJ1** header. Here is the SJ1 (Single color LED header) pin assignment:

Pin	Signal	Function
1	ACPI LED	MSG LED (-) Green
2	ACPI LED	MSG LED (-) Green
3	SB5V	Power LED (+)

ACPI LED Function	S0	S1	S3	S4/S5
	Light	Blinking	Blinking	Dark

17

Front Panel Connector

The front panel connector (PANEL1) provides a standard set of switch and LED connectors commonly found on ATX or micro-ATX cases. Refer to the table below for information:

PANEL1

Pin	Signal	Function	Pin	Signal	Function
1	HD_LED_P	Hard disk LED (positive)	2	FP PWR/SLP	MSG LED [dual color or single color (+)]
3	HD_LED_N	Hard disk active LED (negative)	4	FP PWR/SLP	MSG LED [dual color or single color (-)]
5	RST_SW_N	Reset Switch	6	PWR_SW_P	Power Switch
7	RST_SW_P	Reset Switch	8	PWR_SW_N	Power Switch
9	RSVD	Reserved	10	NC	No pin

Connecting Optional Devices

Refer to the following for information on connecting the mainboard's optional devices:
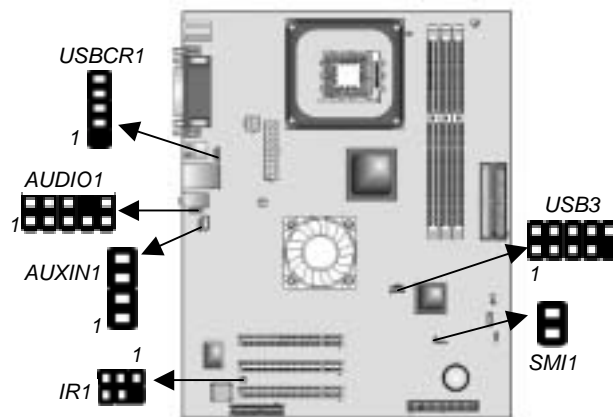
AUDIO1: Front Panel Audio header

This header allows the user to install auxiliary front-oriented microphone and line-out ports for easier access.

Pin	Signal Name	Function
1	AUD_MIC	Front Panel Microphone input signal
2	AUD_GND	Ground used by Analog Audio Circuits
3	AUD_MIC_BIAS	Microphone Power
4	AUD_VCC	Filtered +5 V used by Analog Audio Circuits
5	AUD_FPOUT_R	Right Channel Audio signal to Front Panel
6	AUD_RET_R	Right Channel Audio signal to Return from Front Panel
7	HP_ON	Reserved for future use to control Headphone Amplifier
8	KEY	No Pin
9	AUD_FPOUT_L	Left Channel Audio signal to Front Panel
10	AUD_RET_L	Left Channel Audio signal Return from Front Panel

USB3: Front panel USB connectors

The mainboard has four USB ports installed on the rear edge I/O port array. Additionally, some computer cases have USB ports at the front of the case. If you have this kind of case, use auxiliary USB connectors USB3 to connect the front-mounted ports to the mainboard.

Pin	Signal Name	Function
1	VREG_FP_USBPWR0	Front Panel USB Power
2	VREG_FP_USBPWR0	Front Panel USB Power
3	USB_FP_P0-	USB Port 0 Negative Signal
4	USB_FP_P1-	USB Port 1 Negative Signal
5	USB_FP_P0+	USB Port 0 Positive Signal
6	USB_FP_P1+	USB Port 1 Positive Signal
7	GND	Ground
8	GND	Ground
9	KEY	No pin
10	USB_FP_OC0	Overcurrent signal

Note: Please make sure that the USB cable has the same pin assignment as indicated above. A different pin assignment may cause damage or system hang-up.

IR1: Infrared port

The infrared port allows the wireless exchange of information between your computer and similarly equipped devices such as printers, laptops, Personal Digital Assistants (PDAs), and other computers.

Pin	Signal Name	Function
1	Not assigned	Not assigned
2	KEY	No pin
3	+5V	IR Power
4	GND	Ground
5	IRTX	IrDA serial output
6	IRRX	IrDA serial input

SMI1: System Management Interrupt

This connector is for use with SMI hardware interrupt power management.

Pin	Signal Name	Function
1	-EXTSMI	Sleep button
2	GND	Ground

AUXIN1: Extra line-in connector

This connector is an additional line-in audio connector. It allows you to attach a line-in cable when your rear line-in jack is set as line out port for 4-channel function.

Pin	Signal Name	Function
1	AUX_L	AUX In left channel
2	GND	Ground
3	GND	Ground
4	AUX_R	AUX In right channel

USBCR1: USB Card Reader connector

This connector is for connecting internal USB card reader. You can use a card reader to read or transfer files and digital images to your computer.

Pin	Signal Name	Function
1	USBVCC2	+5V dual
2	USB2-	Data signal port 2-
3	USB2+	Data signal port 2+
4	GND	Ground
5	Key	No pin

Note: The USBCR1 is shared with one of the USB ports of the I/O back panel. The USB port is located beside the serial port connectors. See "Connecting I/O Devices" for more information.

Install Other Devices

Install and connect any other devices in the system following the steps below.
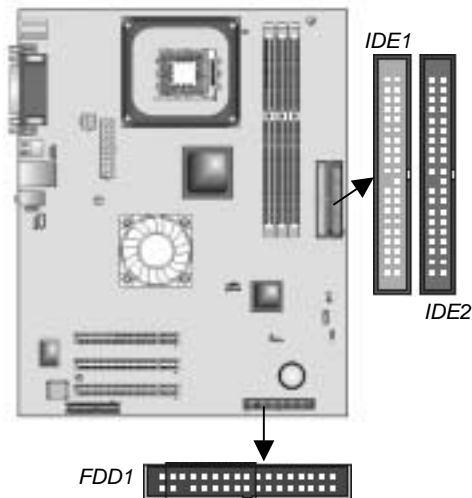
Floppy Disk Drive

The mainboard ships with a floppy disk drive cable that can support one or two drives. Drives can be 3.5" or 5.25" wide, with capacities of 360K, 720K, 1.2MB, 1.44MB, or 2.88MB.
Install your drives and connect power from the system power supply. Use the cable provided to connect the drives to the floppy disk drive connector **FDD1**.

IDE Devices

IDE devices include hard disk drives, high-density diskette drives, and CD-ROM or DVD-ROM drives, among others.
The mainboard ships with an IDE cable that can support one or two IDE devices. If you connect two devices to a single cable, you must configure one of the drives as Master and one of the drives as Slave. The documentation of the IDE device will tell you how to configure the device as a Master or Slave device. The Master device connects to the end of the cable.
Install the device(s) and connect power from the system power supply. Use the cable provided to connect the device(s) to the Primary IDE channel connector **IDE1** on the mainboard.
If you want to install more IDE devices, you can purchase a second IDE cable and connect one or two devices to the Secondary IDE channel connector **IDE2** on the mainboard. If you have two devices on the cable, one must be Master and one must be Slave.

Internal Sound Connections

If you have installed a CD-ROM drive or DVD-ROM drive, you can connect the drive audio cable to the onboard sound system.

CD1
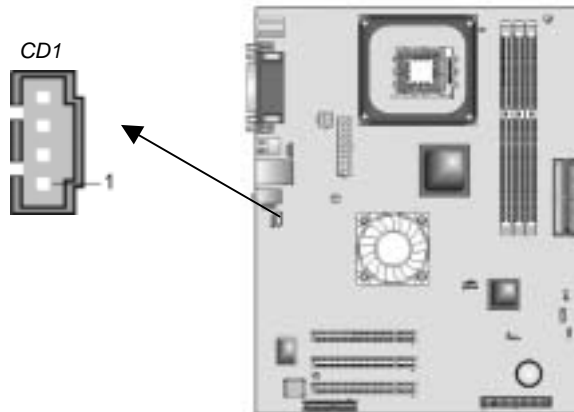
When you first start up your system, the BIOS should automatically detect your CD-ROM/DVD drive. If it doesn't, enter the Setup Utility and configure the CD-ROM/DVD drive that you have installed. On the mainboard, locate the two 4-pin connectors **CD1**.

CD1: Primary CD-in Connector

Pin	Signal Name
1	CD IN L
2	GND
3	GND
4	CD IN R

Expansion Slots

This mainboard has one CNR and three 32-bit PCI slots.
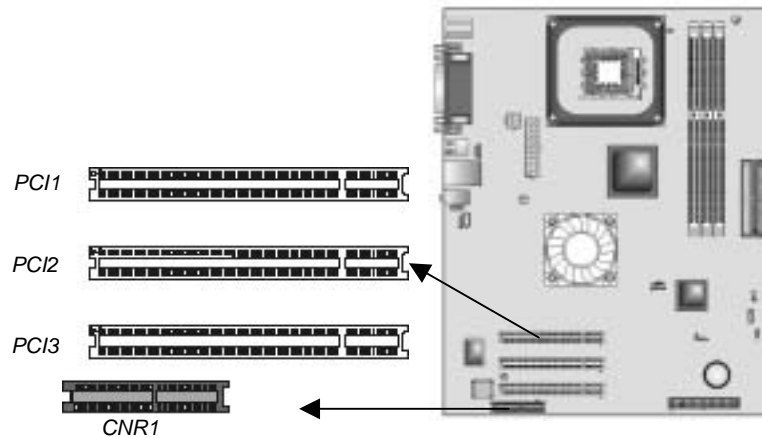
Follow the steps below to install a CNR/PCI expansion card.
1. Locate the CNR or PCI slots on the mainboard.
2. Remove the slot cover for this slot from the system chassis.
3. Insert the expansion card edge connector into the slot and press it firmly down into it so that it is fully inserted.
4. Secure the expansion card bracket to the system chassis with a screw.

PCI Slots
You can install the 32-bit PCI interface expansion cards in the slots. PCI stands for peripheral Component Interconnect and is a bus standard for expansion cards.

CNR Slot
You can install the CNR (Communications and Networking Riser) cards with Modem and Audio functionality.

Chapter 3

Using BIOS

About The Setup Utility

The computer uses the latest Award BIOS with support for
Windows Plug and Play. The CMOS chip on the mainboard
contains the ROM setup instructions for configuring the mainboard
BIOS.

The BIOS (Basic Input and Output System) Setup Utility displays
the system's configuration status and provides you with options to
set system parameters. The parameters are stored in battery-
backed-up CMOS RAM that saves this information when the
power is turned off. When the system is turned back on, the system
is configured with the values you stored in CMOS.

The BIOS Setup Utility enables you to configure:

- Hard drives, diskette drives, and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power management features

The settings made in the Setup Utility affect how the computer
performs. Before using the Setup Utility, ensure that you
understand the Setup Utility options.

This chapter provides explanations for Setup Utility options.

The Standard Configuration

A standard configuration has already been set in the Setup
Utility. However, we recommend that you read this chapter in
case you need to make any changes in the future.

This Setup Utility should be used:

- when changing the system configuration
- when a configuration error is detected and you are
  prompted to make changes to the Setup Utility
- when trying to resolve IRQ conflicts
- when making changes to the Power Management
  configuration

- when changing the password or making other changes to the Security Setup

Starting Setup

The BIOS is immediately activated when you first turn on the computer. The BIOS reads system configuration in CMOS RAM and begins the process of checking out the system and configuring it through the power-on self test (POST).
When these preliminaries are finished, the BIOS seeks an operating system on one of the data storage devices (hard drive, floppy drive, etc.). The BIOS launches the operating system and hands control of system operations to it.
During POST, you can start the Setup program in one on two ways:
1. By pressing Del immediately after switching the system on, or
2. By pressing Del or pressing Ctrl+Alt+Esc when the following message appears briefly at the bottom of the screen during POST:

TO ENTER SETUP BEFORE BOOT PRESS DEL KEY

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the RESET button on the system case. You may also restart by simultaneously pressing Ctrl+Alt+Del. If you do not press the keys at the correct time and the system does not boot, an error message appears and you are again asked to:

PRESS F1 TO CONTINUE, DEL TO ENTER SETUP

Phoenix – AwardBIOS CMOS Setup Utility

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

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

Time, Date, Hard Disk Type . . .

BIOS Navigation Keys

The BIOS navigation keys are listed below:

Key	Function
Esc	Exits the current menu
←↑↓→	Scrolls through the items on a menu
+/–/PU/PD	Modifies the selected field's values
F10	Saves the current configuration and exits setup
F1	Displays a screen that describes all key functions
F5	Loads previously saved values to CMOS
F6	Loads a minimum configuration for troubleshooting.
F7	Loads an optimum set of values for peak performance

Standard CMOS Features

In the Standard CMOS menu you can set the system clock and calendar, record disk drive parameters and the video subsystem type, and select the type of errors that stop the BIOS POST.

Phoenix – AwardBIOS CMOS Setup Utility
Standard CMOS Features

		Item Help
Date (mm:dd:yy)	Tue, July 11 2001	
Time (hh:mm:ss)	12 : 8 : 59	Menu Level ►
► IDE Primary Master		Change the day, month,
► IDE Primary Slave		year and century.
► IDE Secondary Master		
► IDE Secondary Slave		
Drive A	[1.44M, 3.5 in.]	
Drive B	[None]	
Floppy 3 Mode Support	[Disabled]	
Video	[EGA/VGA]	
Halt On	[All Errors]	
Base Memory	640K	
Extended Memory	31744K	
Total Memory	32768K	

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

Date and Time

The Date and Time items show the current date and time on the computer. If you are running a Windows OS, these items are automatically updated whenever you make changes to the Windows Date and Time Properties utility.

IDE Devices (None)

Your computer has two IDE channels (Primary and Secondary) and each channel can be installed with one or two devices (Master and Slave). Use these items to configure each device on the IDE channel. Here are these sub-items:

▲IDE HDD Auto-Detection

Press <Enter> while this item is highlighted to prompt the Setup Utility to automatically detect and configure an IDE device on the IDE channel.

> **Note:** If you are setting up a new hard disk drive that supports LBA mode, more than one line will appear in the parameter box. Choose the line that lists LBA for an LBA drive.

▲IDE Primary/Secondary Master/Slave (Auto)

Leave this item at Auto to enable the system to automatically detect and configure IDE devices on the channel. If it fails to find a device, change the value to Manual and then manually configure the drive by entering the characteristics of the drive in the items described below.
Refer to your drive's documentation or look on the drive casing if you need to obtain this information. If no device is installed, change the value to None.

> **Note:** Before attempting to configure a hard disk drive, ensure that you have the configuration information supplied by the manufacturer of your hard drive. Incorrect settings can result in your system not recognizing the installed hard disk.

▲Access Mode

This item defines ways that can be used to access IDE hard disks such as LBA (Large Block Addressing). Leave this value at Auto and the system will automatically decide the fastest way to access the hard disk drive.
Press <Esc> to return to the Standard CMOS Features screen.

Drive A/Drive B (1.44M, 3.5 in./None)

These items define the characteristics of any diskette drive attached to the system. You can connect one or two diskette drives.

Floppy 3 Mode Support (Disabled)

Floppy 3 mode refers to a 3.5-inch diskette with a capacity of 1.2 MB. Floppy 3 mode is sometimes used in Japan.

Video (EGA/VGA)

This item defines the video mode of the system. This mainboard has a built-in VGA graphics system; you must leave this item at the default value.

Halt On (All Errors)

This item defines the operation of the system POST (Power On Self Test) routine. You can use this item to select which types of errors in the POST are sufficient to halt the system.

Base Memory, Extended Memory, and Total Memory

These items are automatically detected by the system at start up time. These are display-only fields. You cannot make changes to these fields.

Advanced BIOS Setup

This screen contains industry-standard options additional to the core PC AT BIOS.

			Item Help
CPU L1 & L2 Cache	[Enabled]		
CPU Hyper-Threading	[Enabled]		Menu Level ►
CPU L2 Cache ECC Checking	[Enabled]		
Quick Power On Self Test	[Enabled]		Allows you to choose
First Boot Device	[Floppy]		the VIRUS warning
Second Boot Device	[HDD-0]		feature for IDE Hard
Third Boot Device	[CD-ROM]		Disk boot sector
Boot Other Device	[Enabled]		protection. If this
Swap Floppy Drive	[Disabled]		function is enabled
Boot Up Floppy Seek	[Disabled]		and someone attempts
Boot Up NumLock Status	[On]		to write data into this
ATA 66/100 IDE Cable MSG	[Disabled]		area, BIOS will show a
Typematic Rate Setting	[Disabled]		warning message on
x Typematic Rate (Chars/Sec)	6		screen and alarm beep
x Typematic Delay (Msec)	250		
Security Option	[Setup]		
APIC Miode	[Enabled]		
OS Select For DRAM > 64MB	[Non-OS2]		
HDD S.M.A.R.T. Capability	[Disabled]		
Report No FDD for WIN95	[Yes]		
Video BIOS Shadow	[Enabled]		
Small Logo (EPA) Show	[Disabled]		

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

CPU L1 & L2 Cache (Enabled)

All processors that can be installed in this mainboard use internal level 1 (L1) cache and level 2 (L2) cache memory to improve performance. Leave this item at the default value for better performance.

CPU Hyper-Threading (Enabled)

This item is only available when the chipset supports Hyper-Threading and you are using a Hyper-Threading CPU.

CPU L2 Cache ECC Checking (Enabled)

This item enables or disables ECC (Error Correction Code) error checking on the CPU cache memory. We recommend that you leave this item at the default value.

Quick Power On Self Test (Enabled)

Enable this item to shorten the power on testing (POST) and have your system start up faster. You might like to enable this item after you are confident that your system hardware is operating smoothly.

First/Second/Third Boot Device (Floppy/HDD-0/CD-ROM)

Use these three items to select the priority and order of the devices that your system searches for an operating system at start-up time.

Boot Other Device (Enabled)

When enabled, the system searches all other possible locations for an operating system if it fails to find one in the devices specified under the First, Second, and Third boot devices.

Swap Floppy Drive (Disabled)

If you have two floppy diskette drives in your system, this item allows you to swap the assigned drive letters so that drive A becomes drive B, and drive B becomes drive A.

Boot Up Floppy Seek (Disabled)

If this item is enabled, it checks the size of the floppy disk drives at start-up time. You don't need to enable this item unless you have a legacy diskette drive with 360K capacity.

Boot Up NumLock Status (On)

This item defines if the keyboard Num Lock key is active when your system is started.

ATA 66/100 IDE Cable Msg. (Enabled)

This item enables or disables the display of the ATA 66/100 Cable MSG.

Typematic Rate Setting (Disabled)

If this item is enabled, you can use the following two items to set the typematic rate and the typematic delay settings for your keyboard.

- **Typematic Rate (6 Chars/Sec):** Use this item to define how many characters per second are generated when a key is held down.
- **Typematic Delay (250 Msec):** Use this item to define how many milliseconds must elapse before a held-down key begins generating repeat characters.

Security Option (Setup)

If you have installed password protection, this item defines if the password is required at system start up, or if it is only required when a user tries to enter the Setup Utility.

APIC Mode (Enabled)

This option is use to enabled or disabled APIC (Advanced Programmable Interrupt Controller) functionality. The APIC is an Intel chip that provides symmetric multiprocessing (SMP) for its Pentium systems.

OS Select For DRAM > 64 MB (Non-OS2)

This item is only required if you have installed more than 64 MB of memory and you are running the OS/2 operating system. Otherwise, leave this item at the default.

HDD S.M.A.R.T Capability (Disabled)

The S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology) system is a diagnostics technology that monitors and predicts device performance. S.M.A.R.T. software resides on both the disk drive and the host computer.
The disk drive software monitors the internal performance of the motors, media, heads, and electronics of the drive. The host software monitors the overall reliability status of the drive. If a device failure is predicted, the host software, through the Client WORKS S.M.A.R.T applet, warns the user of the impending condition and advises appropriate action to protect the data.

Report No FDD for WIN95 (Yes)

Select Yes to release IRQ6 when the system contains no floppy drive, for compatibility with Windows 95 logo certification.

Video BIOS Shadow (Enabled)

This function, when enabled allows VGA BIOS to be copied to the system DRAM for enhanced performance.

Small Logo (EPA) Show (Disabled)

Determines whether or not the EPA logo appears during boot up.

Advanced Chipset Setup

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.

Phoenix – AwardBIOS CMOS Setup Utility
Advanced Chipset Setup

			Item Help
► DRAM Clock/Drive Control	[Press Enter]		
► AGP & P2P Bridge Control	[Press Enter]		Menu Level ►
► CPU & PCI Bus Control	[Press Enter]		
Memory Hole	[Disabled]		
System BIOS Cacheable	[Disabled]		
Video RAM Cacheable	[Disabled]		
Delay Prior to Thermal	[16 min]		

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

DRAM Clock/Drive Control

This item has several sub-items:

▲Current FSB Frequency

This item displays the frontside bus (FSB) frequency. This is a display-only item. You cannot make changes to this field.

▲Current DRAM Frequency

This item displays the memory (DRAM) frequency. This is a display-only item. You cannot make changes to this field.

▲DRAM Clock (By SPD)

This item enables you to manually set the DRAM Clock. We recommend that you leave this item at the default value.

▲DRAM Timing (Manual)

Set this By SPD to enable the system to automatically set the SDRAM timing by SPD (Serial Presence Detect). SPD is an EEPROM chip on the DIMM module that stores information about the memory chips it contains, including size, speed, voltage, row and column addresses, and manufacturer. If you disable this item, you can use the following three items to manually set the timing parameters for the system memory.

▲SDRAM CAS Latency (2.5T)

Enables you to select the CAS latency time in HCLKs of 2/2 or 3/3. The value is set at the factory depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU.

▲Bank Interleave (4 Bank)

Enable this item to increase memory speed. When enabled, separate memory banks are set for odd and even addresses and the next byte of memory can be accessed while the current byte is being refreshed.

▲Precharge to Active (3T)

This item is used to designate the minimum Row Precharge time of the SDRAM devices on the module.

DRAM must continually be refreshed or it will lose its data. Normally, DRAM is refreshed entirely as the result of a single request. This option allows you to determine the number of CPU clocks allocated for the Row Address Strobe (RAS) to accumulate

its charge before the DRAM is refreshed. If insufficient time is allowed, refresh may be incomplete and data lost.

▲Active to Precharge (7T)

This item specifies the number of clock cycles needed after a bank active command before a precharge can occur.

▲Active to CMD (3T)

This item specifies the minimum required delay between activation of different rows.

▲DRAM Command Rate (2T command)

This item enables you to specify the waiting time for the CPU to issue the next command after issuing the command to the DDR memory. We recommend that you leave this item at the default value.

▲DRAM Burst Len (8)

This item describes which burst lengths are supported by the devices on the mainboard.

▲Write Recovery Time (3T)

This item controls the timing between write and precharge command.

Press <Esc> to return to the Advanced Chipset Setup screen.

AGP & P2P Bridge Control

This item has several sub-items:

▲AGP Aperture Size (128 MB)

This item defines the size of the aperture if you use an AGP graphics adapter. The AGP aperture refers to a section of the PCI memory address range used for graphics memory. We recommend that you leave this item at the default value.

▲AGP Mode (4X)

This item allows you to enable or disable the caching of display data for the processor video memory. Enabling AGP-4X Mode can greatly improve the display speed. Disable this item if your graphics display card does not support this feature.

▲AGP Driving Control (Auto)

This item is used to signal driving current on AGP cards to auto or manual. Some AGP cards need stronger than normal driving

current in order to operate. We recommend that you set this item to the default.

- **AGP Driving Value:** When AGP Driving Control is set to Manual, use this item to set the AGP current driving value.

▲AGP Fast Write (Disabled)

This item lets you enable or disable the caching of display data for the video memory of the processor. Enabling this item can greatly improve the display speed. Disable this item if your graphics display card does not support this feature.

▲AGP Master 1 WS Write (Disabled)

This implements a single delay when writing to the AGP Bus. By default, two-wait states are used by the system, providing greater stability.

▲AGP Master 1 WS Read (Disabled)

This implements a single delay when reading to the AGP Bus. By default, two-wait states are used by the system, allowing for greater stability.

▲DBI Output for AGP Trans. (Disabled)

This item is use to improve the signal quality for the AGP 3.0.

Press <Esc> to return to the Advanced Chipset Features screen.

CPU & PCI Bus Control

This item has several sub-items:

▲CPU to PCI Write Buffer (Enabled)

When enabled, writes from the CPU to PCI bus is buffered, to compensate for the speed differences between the CPU and PCI bus. When disabled, the writes are not buffered and the CPU must wait until the write is complete before starting another write cycle.

▲PCI Master 0 WS Write (Enabled)

When enabled, writes to the PCI bus are executed with zero wait states.

▲PCI Delay Transaction (Enabled)

The mainboard's chipset has an embedded 32-bit post write buffer to support delay transactions cycles. Select Enabled to support

compliance with PCI specification version 2.1.

▲ Vlink 8x support (Enabled)

Use this item to enable or disable the 8-bit Vlink Host controller.
Press <Esc> to return to the Advanced Chipset Features screen.

Memory Hole (Disabled)

This item is used to reserve memory space for ISA expansion cards
that require it.

System BIOS/Video RAM Cacheable (Disabled)

These items allow the video and system to be cached in memory
for faster execution. Leave these items at the default value for
better performance.

Delay Prior to Thermal (16 Min)

Enables you to set the delay time before the CPU enters auto
thermal mode.

Integrated Peripherals

These options display items that define the operation of peripheral components on the system's input/output ports.

Phoenix – AwardBIOS CMOS Setup Utility
Integrated Peripherals

		Item Help
► VIA OnChip IDE Device	[Press Enter]	
► VIA On Chip PCI Device	[Press Enter]	Menu Level ►
► Super I/O Device	[Press Enter]	
Init Display First	[PCI Slot]	
OnChip USB Controller	[All Enabled]	
USB 2.0 Support	[Enabled]	
USB Keyboard Support	[Disabled]	
BIOS Flash Protect	[Disabled]	
IDE HDD Block Mode	[Enabled]	

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

VIA OnChip IDE Device

This item has several sub-items:

▲On-Chip IDE Channel 0/1 (Enabled)

Use these items to enable or disable the PCI IDE channels that are integrated on the mainboard.

▲IDE Prefetch Mode (Enabled)

The onboard IDE drive interfaces supports IDE prefetching, for faster drive access. If you install a primary and secondary add-on IDE interface, set this field to Disabled if the interface does not support prefetching.

▲IDE Primary/Secondary Master/Slave PIO (Auto)

Each IDE channel supports a master device and a slave device. These four items let you assign which kind of PIO (Programmed Input/Output) is used by IDE devices. Choose Auto to let the system auto detect which PIO mode is best, or select a PIO mode from 0-4.

38

▲IDE Primary/Secondary Master/Slave UDMA (Auto)

Each IDE channel supports a master device and a slave device.
This mainboard supports UltraDMA technology, which provides
faster access to IDE devices.
If you install a device that supports UltraDMA, change the
appropriate item on this list to Auto. You may have to install the
UltraDMA driver supplied with this mainboard in order to use an
UltraDMA device.
Press <Esc> to return to the Integrated Peripherals screen.

VIA OnChip PCI Device

This item has several sub-items:

▲VIA-3058 AC97 Audio (Auto)

Enables and disables the onboard audio chip. Disable this item if
you are going to install a PCI audio add-on card.

▲VIA-3068 MC97 Modem (Auto)

Enables and disables the onboard modem. Disable this item if you
are going to install an external modem.

▲Onboard LAN Device (Enabled)

Enables and disables the onboard LAN.

▲Onboard LAN Boot ROM (Disabled)

Use this item to enable and disable the booting from the onboard
LAN or a network add-in card with a remote boot ROM installed.
Press <Esc> to return to the Integrated Peripherals screen.

SuperIO Device

This item has several sub-items:

▲Onboard FDC Controller (Enabled)

This option enables the onboard floppy disk drive controller.

▲Onboard Serial Port 1 (3F8/IRQ4)

This option is used to assign the I/O address and address and
interrupt request (IRQ) for onboard serial port 1 (COM1).

▲Onboard Serial Port 2 (2F8/IRQ3)

This option is used to assign the I/O address and address and
interrupt request (IRQ) for onboard serial port 2 (COM2).

▲UART Mode Select (Normal)

This field is available if the Onboard Serial Port 2 field is set to any option but Disabled. UART Mode Select enables you to select the infrared communication protocol-Normal (default), IrDA, or ASKIR. IrDA is an infrared communication protocol with a maximum baud rate up to 115.2K bps. ASKIR is Sharp's infrared communication protocol with a maximum baud rate up to 57.6K bps.

▲UR2 Duplex Mode (Half)

This field is available when UART 2 Mode is set to either ASKIR or IrDA. This item enables you to determine the infrared (IR) function of the onboard infrared chip. The options are Full and Half (default).

Full-duplex means that you can transmit and send information simultaneously. Half-duplex is the transmission of data in both directions, but only one direction at a time.

▲Onboard Parallel Port (378/IRQ7)

This option is used to assign the I/O address and interrupt request (IRQ) for the onboard parallel port.

▲Parallel Port Mode (ECP)

Enables you to set the data transfer protocol for your parallel port. There are four options: SPP (Standard Parallel Port), EPP (Enhanced Parallel Port), ECP (Extended Capabilities Port) and ECP+EPP.

SPP allows data output only. Extended Capabilities Port (ECP) and Enhanced Parallel Port (EPP) are bi-directional modes, allowing both data input and output. ECP and EPP modes are only supported with EPP and ECP aware peripherals.

▲ECP Mode Use DMA (3)

When the onboard parallel port is set to ECP mode, the parallel port can use DMA 3 or DMA 1.

Press <Esc> to return to the Integrated Peripherals screen.

Init Display First (PCI Slot)

Use this item to specify whether your graphics adapter is installed in one of the PCI slots or is integrated on the mainboard.

OnChip USB Controller (All Enabled)

Enable this item if you plan to use the Universal Serial Bus ports on this mainboard.

USB 2.0 Support (Enabled)

Select enabled if your system support the USB 2.0 function.

USB Keyboard Support (Disabled)

Enable this item if you plan to use a USB mouse.

BIOS Flash Protect (Disabled)

This item is used to control the write access to the BIOS. Set to enabled to write-protect the BIOS from being modified or any virus attack. Disable this feature if you want to update the BIOS.

IDE HDD Block Mode (Enabled)

Enable this field if your IDE hard drive supports block mode. Block mode enables BIOS to automatically detect the optimal number of block read and writes per sector that the drive can support and improves the speed of access to IDE devices.

Power Management Setup

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

```
                  Phoenix – AwardBIOS CMOS Setup Utility
                          Power Management Setup
 ┌────────────────────────────────────────────────┬──────────────────┐
 │  ACPI function                  [Enabled]        │     Item Help    │
 │  ACPI Suspend Type              [S1(POS)]        ├──────────────────┤
 │  Power Management Option        [User Define]    │  Menu Level   ►  │
 │  HDD Power Down                 [Disabled]       │                  │
 │  Suspend Mode                   [Disabled]       │                  │
 │  Video Off Option               [Suspend --> Off]│                  │
 │  Video Off Method               [DPMS Support]   │                  │
 │  MODEM Use IRQ                  [3]              │                  │
 │  Soft-Off by PWRBTN             [Instant-Off]    │                  │
 │  Run VGABIOS if S3  Resume      [Auto]           │                  │
 │  PWRON After PWR-Fail           [Off]            │                  │
 │► IRQ/Event Activity Detect      [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
```

ACPI Function (Enabled)

This mainboard supports ACPI (Advanced Configuration and Power management Interface). Use this item to enable or disable the ACPI feature.

> **Note:** ACPI is a power management specification that makes hardware status information available to the operating system. ACPI enables a PC to turn its peripherals on and off for improved power management. It also allows the PC to be turned on and off by external devices, so that mouse or keyboard activity wakes up the computer.

ACPI Suspend Type (S1(POS))

Use this item to define how your system suspends. In the default, S1(POS), the suspend mode is equivalent to a software power down. If you select S3 (STR), the suspend mode is a suspend to

42

RAM - the system shuts down with the exception of a refresh current to the system memory.

Power Management Option (User Define)

This item acts like a master switch for the power-saving modes and hard disk timeouts. If this item is set to Max Saving, power-saving modes occur after a short timeout. If this item is set to Min Saving, power-saving modes occur after a longer timeout. If the item is set to User Define, you can insert your own timeouts for the power-saving modes.

HDD Power Down (Disabled)

The IDE hard drive will spin down if it is not accessed within a specified length of time. Options are from 1 Min to 15 Min and Disable.

Suspend Mode (Disabled)

After the selected period of system inactivity, all devices except the CPU shut off.

Video Off Option (Suspend --> Off)

This option defines if the video is powered down when the system is put into suspend mode.

Video Off Method (DPMS Support)

This item defines how the video is powered down to save power. This item is set to DPMS (Display Power Management Software) by default.

MODEM Use IRQ (3)

If you want an incoming call on a modem to automatically resume the system from a power-saving mode, use this item to specify the interrupt request line (IRQ) that is used by the modem. You might have to connect the fax/modem to the mainboard Wake On Modem connector for this feature to work.

Soft-Off by PWRBTN (Instant-Off)

Under ACPI (Advanced Configuration and Power management Interface) you can create a software power down. In a software power down, the system can be resumed by Wake Up Alarms. This item lets you install a software power down that is controlled by the normal power button on your system. If the item is set to Instant-Off, then the power button causes a software power down. If the item is set to Delay 4 Sec. then you have to hold the power button down for four seconds to cause a software power down.

Run VGABIOS if S3 Resume (Auto)

This item allows the system to initialize the VGA BIOS from S3 (Suspend to RAM) sleep state.

PWRON After PWR-Fail (Off)

This item enables your computer to automatically restart or return to its last operating status after power returns from a power failure.

IRQ/Event Activity Detect

This item has several sub-items enabling you to set events that will resume the system from a power saving mode.

▲PS2KB Wakeup Select (Hot key)

This option allows you to set hot key combination to turn on the system by keyboard.

▲Resume By PS2MS/KB from S3 (Disabled/Disabled)

These options enable you to allow keyboard or mouse activity to awaken the system from power saving mode.

▲Power Button Lock (Enabled)

When this item is enabled, you can set the password to lock the system.

▲Resume By USB from S3 (Disabled)

When set to Enabled, the system power will resume the system from a power saving mode if there is any USB port activity.

▲VGA (Off)
When set to On, the system power will resume the system from a power saving mode if there is any VGA activity.

▲LPT & COM (LPT/COM)
When this item is enabled, the system will restart the power-saving timeout counters when any activity is detected on the serial ports, or the parallel port.

▲HDD & FDD (ON)
When this item is enabled, the system will restart the power-saving timeout counters when any activity is detected on the hard disk drive or the floppy diskette drive.

▲PCI Master (OFF)
When set to Off, any PCI device set as the Master will not power on the system.

▲Resume By PCI PME (Enabled)
Use this item to enable PCI activity to wakeup the system from a power saving mode.

▲Resume By Ring (Disabled)
Use this item to enable LAN or modem activity to wakeup the system from a power saving mode.

▲Resume By Alarm (Disabled)
When set to Enabled, the following two fields become available and you can set the date (day of the month), hour, minute and second to turn on your system. When set to 0 (zero) for the day of the month, the alarm will power on your system every day at the specified time.

Press <Esc> to return to the Power Management screen.

PNP/PCI Configurations

This section describes configuring the PCI bus system. PCI (Peripheral Component Interconnect) is a system, which allows I/O devices to operate at speeds nearing CPU's when they communicate with own special components.

All the options describes in this section are important and technical and it is strongly recommended that only experienced users should make any changes to the default settings.

```
                     Phoenix – AwardBIOS CMOS Setup Utility
                             PnP/PCI Configurations
┌─────────────────────────────────────────────────┬──────────────────────────┐
│  PNP OS Installed              [No]              │       Item Help          │
│  Reset Configuration Data      [Disabled]        │                          │
│                                                  ├──────────────────────────┤
│  Resources Controlled by       [Auto(ESCD)]      │ Menu Level    ►          │
│ x  IRQ Resources               Press Enter       │ Default is Disabled.     │
│                                                  │ Select Enabled to reset  │
│  PCI/VGA Palette Snoop         [Disabled]        │ Extended System          │
│  Assign IRQ For VGA            [Enabled]         │ Configuration Data (ESCD)│
│  Assign IRQ For USB            [Enabled]         │ when you exit Setup if you│
│   INT Pin1 Assignment          [Auto]            │ have installed a new add-│
│  INT Pin2 Assignment           [Auto]            │ on and the system        │
│  INT Pin3 Assignment           [Auto]            │ reconfiguration has      │
│  INT Pin4 Assignment           [Auto]            │ caused such a serious    │
│                                                  │ conflict that the OS cannot│
│                                                  │ boot                     │
└─────────────────────────────────────────────────┴──────────────────────────┘
↑↓→← : Move    Enter: Select      +/-/PU/PD: Value:   F10: Save   ESC: Exit   F1:General Help
           F5:Previous Values      F6:Fail-Safe Defaults         F7:Optimized Defaults
```

PNP OS Installed (No)

Setting this option to Yes allows the PnP OS (instead of BIOS) to assign the system resources such as IRQ and I/O address to the ISA PnP device. The default setting is No.

Reset Configuration Data (Disabled)

If you enable this item and restart the system, any Plug and Play configuration data stored in the BIOS setup is cleared from memory. New updated data is created.

Resources Controlled By (Auto(ESCD))

You should leave this item at the default Auto (ESCD). Under this setting, the system dynamically allocates resources to Plug and

Play devices as they are required. If you select the "Manual" option, the prompt on the following line, "IRQ Resources" will become available to you.

You should leave this item at the default Auto (ESCD). Under this setting, the system dynamically allocates resources to Plug and Play devices as they are required.

If you cannot get a legacy ISA (Industry Standard Architecture) expansion card to work properly, you might be able to solve the problem by changing this item to Manual, and then opening up the IRQ Resources and Memory Resources submenus.

IRQ Resources

The item has several sub-items that allows you to individually assign an interrupt type for interrupts IRQ-3 to IRQ-15:

▲PCI/VGA Palette Snoop (Disabled)
This item is designed to overcome problems that can be caused by some non-standard VGA cards. This board includes a built-in VGA system that does not require palette snooping so you must leave this item disabled.

▲Assign IRQ for VGA/USB (Enabled)
Names the interrupt request (IRQ) line assigned to the USB/VGA (if any) on your system. Activity of the selected IRQ always awakens the system.

▲INT Pin1~4 Assignment (Auto)
Names the interrupt request (IRQ) line assigned to a device connected to the PCI interface on your system.
Press <Esc> to return to the PNP/PCI Configuration screen.

PC Health Status

On mainboards that support hardware monitoring, this item lets you monitor the parameters for critical voltages, critical temperatures, and fan speeds.

Phoenix – AwardBIOS CMOS Setup Utility
PC Health Status

Shutdown Temperature	[Disabled]	Item Help
CPU VCORE		
2.50V		Menu Level ►
3.30V		
5.00V		
12.00V		
Voltage Battery		
Current System Temp		
Current CPU Temp		
CPU FAN Speed		
CASE FAN Speed		

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

Shutdown Temperature

Enables you to set the maximum temperature the system can reach before powering down.

System Component Characteristics

These fields provide you with information about the systems current operating status. You cannot make changes to these fields.

Frequency/Voltage Control

This item enables you to set the clock speed and system bus for your system. The clock speed and system bus are determined by the kind of processor you have installed in your system.

Phoenix – AwardBIOS CMOS Setup Utility
Frequency/Voltage Control

CPU Clock Ratio	[Auto]	Item Help
Auto Detect PCI/DIMM Clk	[Enabled]	
Spread Spectrum	[Enabled]	Menu Level ►
CPU Host/AGP/PCI Clock	[Default]	
CPU Voltage Regulator	[Default]	
DDR Voltage Regulator	[Default]	

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

CPU Clock Ratio

Use this item to select a multiplier for the system frontside bus (FSB) frequency. The value of the multiplier must be set so that:
Multiplier x Frontside Bus Frequency = CPU Clock Speed
For example, if you have a processor that is rated to run at 450 MHz and the system is running a frontside bus frequency of 100 MHz, you should select a multiplier of 4.5 so that:
4.5 (Multiplier) x 100 MHz (frontside bus) = 450 MHz (CPU clock)

Auto Detect DIMM/PCI Clk (Enabled)

When this item is enabled, BIOS will disable the clock signal of free DIMM and PCI slots.

Spread Spectrum (Enabled)

If you enable spread spectrum, it can significantly reduce the EMI (Electro-Magnetic Interference) generated by the system.

CPU Host/AGP/PCI Clock (Default)

Use the CPU Host Clock to set the frontside bus frequency for the installed processor (usually 133 MHz, 100 MHz or 66 MHz).

CPU/DDR Voltage Regulator (Default)

If you are manually configuring the CPU/DDR clock, use these items to set the CPU/DDR voltage for more stability.

Load Fail-Safe Defaults

This option opens a dialog box that lets you install fail-safe defaults for all appropriate items in the Setup Utility:
Press <Y> and then <Enter> to install the defaults. Press <N> and then <Enter> to not install the defaults. The fail-safe defaults place no great demands on the system and are generally stable. If your system is not functioning correctly, try installing the fail-safe defaults as a first step in getting your system working properly again. If you only want to install fail-safe defaults for a specific option, select and display that option, and then press <F6>.

Load Optimized Defaults

This option opens a dialog box that lets you install optimized defaults for all appropriate items in the Setup Utility. Press <Y> and then <Enter> to install the defaults. Press <N> and then <Enter> to not install the defaults. The optimized defaults place demands on the system that may be greater than the performance level of the components, such as the CPU and the memory. You can cause fatal errors or instability if you install the optimized defaults when your hardware does not support them. If you only want to install setup defaults for a specific option, select and display that option, and then press <F7>.

Set Supervisor/User Password

When this function is selected, the following message appears at the center of the screen to assist you in creating a password.
ENTER PASSWORD
Type the password, up to eight characters, and press <Enter>. The password typed now will clear any previously entered password

50

from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection.

To disable password, just press <Enter> when you are prompted to enter password. A message will confirm the password being disabled. Once the password is disabled, the system will boot and you can enter BIOS Setup freely.

<div align="center">

PASSWORD DISABLED

</div>

If you have selected "**System**" in "Security Option" of "BIOS Features Setup" menu, you will be prompted for the password every time the system reboots or any time you try to enter BIOS Setup.

If you have selected "**Setup**" at "Security Option" from "BIOS Features Setup" menu, you will be prompted for the password only when you enter BIOS Setup.

Supervisor Password has higher priority than User Password. You can use Supervisor Password when booting the system or entering BIOS Setup to modify all settings. Also you can use User Password when booting the system or entering BIOS Setup but can not modify any setting if Supervisor Password is enabled.

Save & Exit Setup

Highlight this item and press <Enter> to save the changes that you have made in the Setup Utility and exit the Setup Utility. When the Save and Exit dialog box appears, press <Y> to save and exit, or press <N> to return to the main menu:

Exit Without Saving

Highlight this item and press <Enter> to discard any changes that you have made in the Setup Utility and exit the Setup Utility. When the Exit Without Saving dialog box appears, press <Y> to discard changes and exit, or press <N> to return to the main menu.

Note: If you have made settings that you do not want to save, use the "Exit Without Saving" item and press <Y> to discard any changes you have made.

Chapter 4

Software & Applications

Introduction

This chapter describes the contents of the support CD-ROM that comes with the mainboard package.

The support CD-ROM contains all useful software, necessary drivers and utility programs to properly run our products. More program information is available in a README file, located in the same directory as the software.

To run the support CD, simply insert the CD into your CD-ROM drive. An Auto Setup screen automatically pops out, and then you can go on the auto-installing or manual installation depending on your operating system.

If your operating system is Windows 98/ME/2000/XP, it will automatically install all the drivers and utilities for your mainboard; if Windows NT or manual installation, please follow the instructions described as the Installing under Windows NT or Manual Installation section.

Installing Support Software

1. Insert the support CD-ROM disc in the CD-ROM drive.
2. When you insert the CD-ROM disc in the system CD-ROM drive, the CD automatically displays an Auto Setup screen.
3. The screen displays three buttons of **Setup**, **Browse CD** and **Exit** on the right side, and three others **Setup**, **Application** and **ReadMe** at the bottom. Please see the following illustration.

The **Setup** button runs the software auto-installing program as explained in next section.

The **Browse CD** button is a standard Windows command that you can check the contents of the disc with the Windows 98 file browsing interface.

The **Exit** button closes the Auto Setup window. To run the program again, reinsert the CD-ROM disc in the drive; or click the CD-ROM driver from the Windows Explorer, and click the Setup icon.

The **Application** button brings up a software menu. It shows the bundled software that this mainboard supports.

The **ReadMe** brings you to the Install Path where you can find out path names of software driver.

Auto-Installing under Windows 98/ME/2000/XP

If you are under Windows 98/ME/2000/XP, please click the **Setup** button to run the software auto-installing program while the Auto Setup screen pops out after inserting the support CD-ROM:

1. The installation program loads and displays the following screen. Click the **Next** button.

2. Select the items that you want to setup by clicking on it (the default options are recommended). Click the **Next** button to proceed.

3. The support software will automatically install.

Once any of the installation procedures start, software is automatically installed in sequence. You need to follow the onscreen instructions, confirm commands and allow the computer to restart as few times as needed to complete installing whatever software you selected. When the process is finished, all the support software will be installed and start working.

Installing under Windows NT or Manual Installation

If you are under Windows NT, the auto-installing program doesn't work out; or you have to do the manual installation, please follow this procedure while the Auto Setup screen pops out after inserting the support CD-ROM:

1. Click the **ReadMe** to bring up a screen, and then click the Install Path at the bottom of the screen.
2. Find out your mainboard model name and click on it to obtain its correct driver directory.
3. Install each software in accordance with the corresponding driver path.

Bundled Software Installation

All bundled software available on the CD-ROM is for users' convenience. You can install bundled software as follows:

1. Click the **Application** button while the Auto Setup screen pops out after inserting the support CD-ROM.
2. A software menu appears. Click the software you want to install.
3. Follow onscreen instructions to install the software program step by step until finished.

Set Up the Audio System

Set up the Audio configuration of 2-channel, 4-channel and 6-channel speaker-out system through the audio driver. It also provides users with **Xear Technology**, the virtual rear sound effect compensation for any multi-channel audio systems simply by using a pair of open-aired headphones.

Note: 4-channel and 6-channel speaker-out system are optional.

- An ear/headphone-like device, capable of delivering the rear audio in a multi-channel audio system.
- Structurally comprising two housing units for receiving the rear signal, wherein the housings are opposite each other. Both housing units may be joined by a headband or other unification device.
- Open-aired design, allowing the listener to perceive the front signal at the same time.

- Rear output adjustable in position, height, and width via C-Media's user friendly API, capable of offering a freely defined cyberspace to the listener.
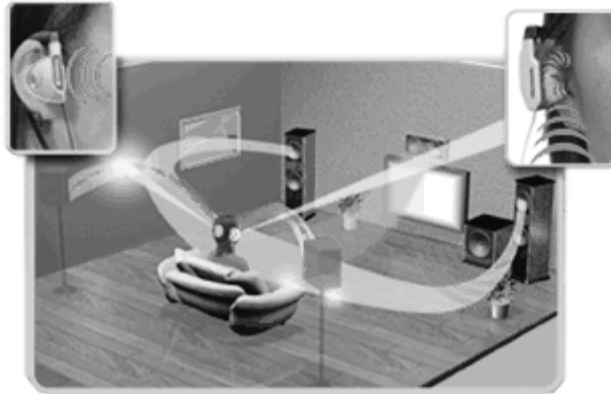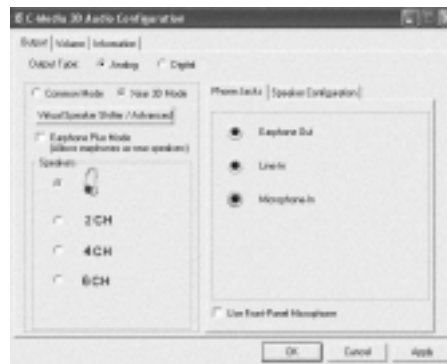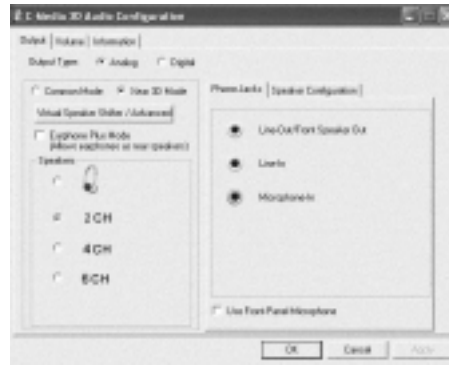

Xear 3D Mode
In Xear 3D Mode, there are Virtual Speaker Shifter/Advance and Earphone Plus Mode options and channel selections. Each channel has a corresponding position of phone jacks and description. **(Three audio jacks on the screen show these colors: top-- lime, middle-- light blue, bottom-- pink)**
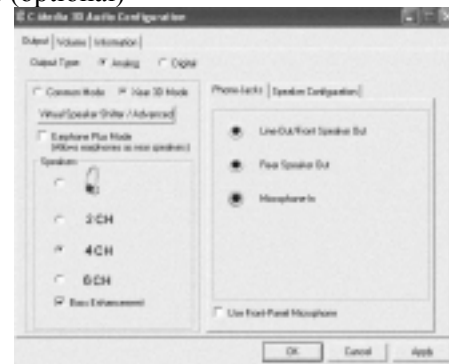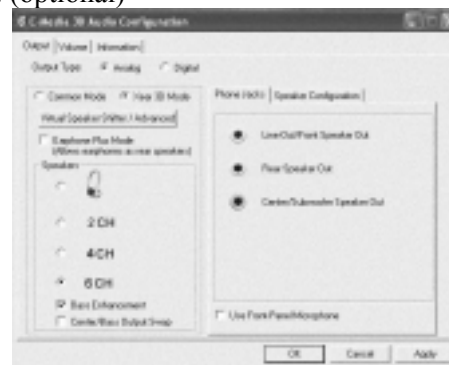
EARPHONE

2-CHANNEL

4-CHANNEL (optional)
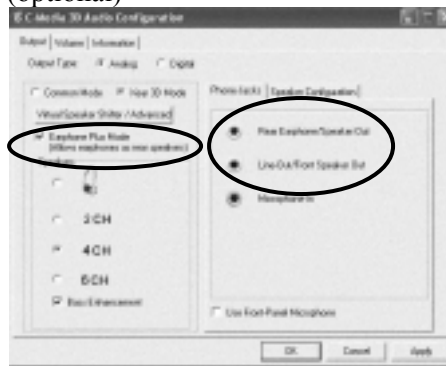

6-CHANNEL (optional)

54

Earphone Plus Mode

While enabling Earphone Plus Mode, it activates the Xear function; moreover, original Front Out and Rear Out positions will be exchanged in Multi-Channel mode. EARPHONE and 2-CHANNEL don't support Xear function.
(Three audio jacks on the screen show these colors: top-- lime, middle-- light blue, bottom-- pink)

4-CHANNEL (optional)

6-CHANNEL (optional)
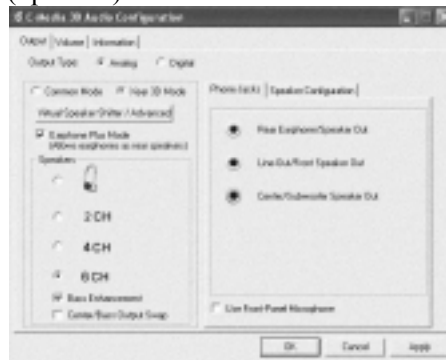
Virtual Speaker Shift/Advance
Click the Virtual Speaker Shift/Advance button, it provides some
3D Sound Effect and DEMO program for testing.

Hyper Threading CPU

You must update BIOS to initiate BIOS Hyper Threading
Function and use HT CPU function under WinXP Operating
System; if not, please disable this option.

♦ When BIOS detects the HT CPU, it shows the "Hyper
Threading Function (default Disabled)" option, which you must
set Enabled if you want to test HT CPU function. If there is no
HT CPU, this option is hidden and default Disabled.

♦ You must re-install WINXP to activate the HT CPU function.

While you are in Windows Task Manager, please push down
ctrl+Alt Del keys. A dual CPU appears in the CPU Usage
History&Device Manager under WinXP.

> **Note**: Hyper Threading Function only works under
> WINXP Operating System; therefore, disable it
> under other Operating System.