

# Motherboard 4865PE

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# MEMO

# Chapter 1

## Motherboard 4865PE

### 1. 4865PE Specifications

#### 1.1 Introduction

The 4865PE motherboard is an integration of Intel P4 CPUs in Socket-478 packaging and the North Bridge i865PE (Springdale-PE) supporting 800/533/400 MHz Front Side Bus.

North Bridge i865PE on board supports Dual Channel DDR 400/333/266 DRAMs in DDR 400MHz main bandwidth, while the South Bridge ICH5 provides stable supports of ULTRA ATA 100, 6-channel Audio playback, USB 2.0/1.1 interface and 2 Serial ATA ports.

The resulting architecture will provide an ideal multi-task environment to support operating systems such as MS-DOS, Windows, Windows NT, Windows ME, Windows 2000, Novell, OS/2, Windows 95/98, Windows 98SE, Windows XP, UNIX, Linux, SCO UNIX etc. This user-friendly manual is to describe in detail how to install, configure and use this motherboard with drivers and BIOS setup illustrations.

**This manual is a general reference of the first release of this motherboard which is subject to update without notice. If any difference is found between this manual and the motherboard you are using, please refer to the Web Site provided on this manual.**

## 1.2 Package Contents

- ◆HDD UDMA66/100 Cable.
- ◆FDD Cable.
- ◆Flash Memory with BIOS.
- ◆USB2/3 Cable (Optional).
- ◆Fully Setup Driver CD with built in utilities.
- ◆User Manual.

## 1.3 Specifications and Features

### CPU Processor

- | Support 800/533/400MHz System Interface speed.
- | Single Socket 478 for Intel P4™(Northwood Processor) 1.6A to 3.06GHz (HT CPU included) or higher\*.
- | Support Intel Netburst™ Micro-architecture

\* The higher frequency CPU should be compatible with Intel CPU specification as well as the motherboard latest BIOS version which is released in our Web Site.

### Chipset

- | Intel 865PE North Bridge (Springdale-PE).
- | Intel ICH5 South Bridge.

### PCI

- | Supports 33MHz PCI Bus speed with 6 PCI slots.

### DDR SDRAM Memory

- | Supporting 64/128/256/512....MB DDR module
- | Supporting Synchronous 400/333/266MHz DDR SDRAM
- | Supporting Dual-channel DDR SDRAM in 2 x 2GB pairs (up to 4GB); only identical density and identical band-width DDR modules supported for Dual-channel data transfer.

### Bus Slots

- | 6 x 32-bit PCI slots.

### Universal Serial Bus

- | Supporting 4 on-board Universal Serial Bus(USB Ports) and 4 external Universal serial Bus(USB Ports).
- | Supporting USB 2.0/1.1

### WOL (Wake On LAN)

- | Supporting system power-on by LAN Ring-up signal.

### AGP

- | Supporting 1 x AGP4X/8X slot

**Award BIOS**

- | Supporting Plug & Play specification which detects the peripheral devices and expansion cards automatically
- | Supporting CD-ROM, SCSI, LAN BOOT, Temperature sensor, LAN, Alarm Bus CLK setup
- | Supporting Desktop Management Interface (DMI) function for recording mainboard specification

**ATA 100 On Board**

- | Supporting four IDE devices.
- | Supporting PIO Mode 5, Master Mode, high performance hard disk drives.
- | Supporting Ultra DMA 33/66/100 Bus Master Mode.
- | Supporting IDE interface for high density HDD and CD-ROM.
- | Supporting LBA mode.

**SATA Interface On Board**

- | 2 x SATA (Serial ATA) ports on board
- | Supporting data transfer rate up to 150MB/s in SATA Hard Disk Drive

**PCI-Based AC 97 Digital Audio Processor**

- | AC 97 2.2 compatible Codec, 6-channel Audio interface.
- | 18-bit Stereo Full-Duplex Codec with up to 48 KHz sampling rate
- | 4 Analog Line-level Stereo inputs for connection from Line, CD, Video and AUX; 2 Analog Line-level Stereo inputs for speakerphone and PC beep

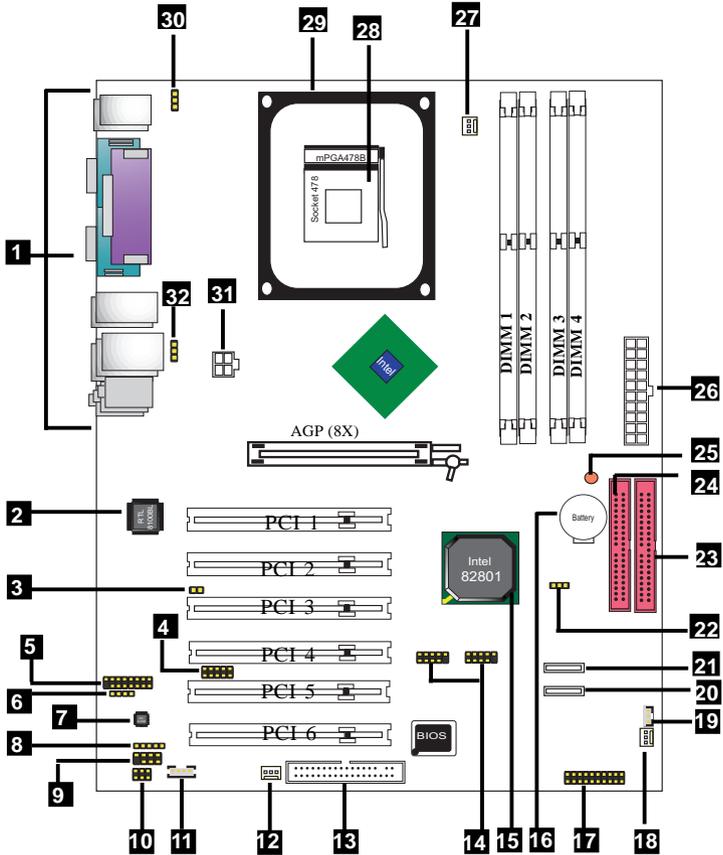
**LAN On Board (optional)**

- | LAN Controller RTL8100BL on board
- | Supporting 1 x RJ45 connector, with 10/100 Mb/s N-way auto-negotiation operation

**ATX Power Supply**

- | ATX and ATX +12V Power Connectors supported

# 1.4 4865PE Layout



**4865PE Component Layout Description:**

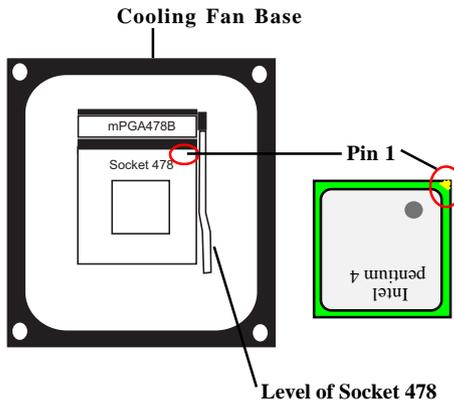
- 1. Back Panel: Back Panel I/O Connectors (Mouse, Keyboard, COM1, COM2, Printer, USB1/2/3/4, Mic in, Line in, Speaker-out.)**
- 2. Rtl8100: LAN Controller**
- 3. Case1: Case Alarm Connector**
- 4. IR1: Connector for Infrared signal transmission**
- 5. Game: Game / Joystick Port**
- 6. CD-IN: Pin-header for CD Audio-in**
- 7. ALC650: 6-channel AC'97 Audio Codec**
- 8. J1: SPDIF (Sony/Philip Digital Interface Format) Audio Connector**
- 9. J2: 4-channel Audio-out Connector**
- 10. J3: Audio Connector**
- 11. AUX\_IN: Audio-in Connector**
- 12. Case FAN: Cooling Fan Connector for case cooling fan**
- 13. FDC: Floppy Drive Connector**
- 14. USB Headers USB5/6 and USB7/8**
- 15. South Bridge Intel 82801EB (ICH5)**
- 16. Battery**
- 17. Panel1: Front Panel Connectors**
- 18. Sys FAN: Cooling Fan Connector for system cooling fan**
- 19. WOL1: Wake On LAN Connector**
- 20. SATA1: Serial ATA Connector**
- 21. SATA2: Serial ATA Connector**
- 22. JP1: Jumper for CMOS Data Setup**
- 23. IDE1: IDE Connector for UATA 66/100**
- 24. IDE2: IDE Connector for UATA 66/100**
- 25. LED1: Vcc2.5 LED for DIMM Powered On signal**
- 26. PWR1: ATX Main Power Connector**
- 27. CPU FAN: Cooling Fan Connector for CPU cooling fan**
- 28. Socket 478: P4 CPU Socket**
- 29. P4 CPU Fan Base**
- 30. JP2: Jumper for Keyboard/Mouse Power On**
- 31. JP3: Jumper for USB Keyboard/Mouse Power On**
- 32. PW2: ATX +12V Power Connector**

## 1.5 CPU and CPU Fan Installation

This motherboard is designed with Socket 478 for Intel P4™ processors (including Hyper-threading CPUs).

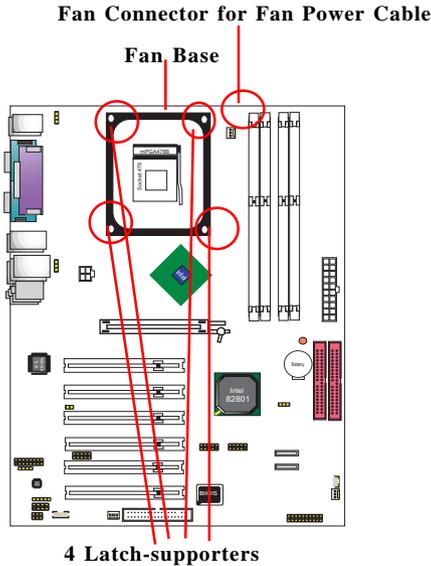
### 1.5.1 CPU Installation with Socket 478

1. Pull the lever sideways away from the socket then raise the lever to a 90-degree angle.
2. Locate Pin 1 in the socket. Pin 1 of CPU is marked by the yellow corner or cut edge on the CPU. Match Pin 1 of Socket 478 and Pin 1 of CPU.
3. Pull up the lever of Socket 478 to let the CPU in and press the lever down to lock the CPU.
4. Make sure that Pin 1 of Socket 478 is matching with Pin 1 of CPU.
5. Make sure that all CPU pins are completely in socket before pressing down the socket lever.
6. Hyper-threading CPU is supported in Windows 2000/XP only.



### 1.5.2 CPU Fan Installation with P4 Fan Base

1. P4 CPU Fan is typically designed with 4 latches and mounted with a thick heatsink. Please do not use other type of CPU fan which cannot match the P4 Fan base on board.
2. Install the P4 CPU fan into the Fan base in such a way that the 4 latches of the CPU Fan match with the 4 Supporters of the CPU Fan Base.
3. Press down the latches to lock CPU Fan to the Fan Base.
4. Then connect the Fan Power Cable to one of the Fan connectors on board.
5. Make sure that the Fan Power Cable is correctly connected to Fan Connector.



## 1.6 DDR SDRAM Installation

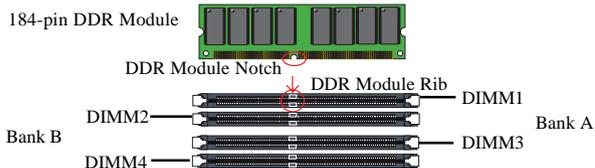
### 1.6.1 To Install DDR Memory Module

This motherboard supports a maximized 4GB DDR SDRAM. It provides 4 x 184-pin DDR sockets. It supports 64MB to 1GB DDR memory module.

1. The DDR socket has a “Plastic Safety Tab” and the DDR memory module has an asymmetrical notch”, so the DDR memory module can only fit into the slot in one direction.
2. Push the tabs out. Insert the DDR memory modules into the socket at a 90-degree angle then push down the module vertically to fit it into place.
3. To install Single-channel transfer, DDR SDRAM modules can be populated in any one of the DIMM slot. The module density and Band-width can be different from each other.
4. To install Dual-channel transfer, DDR SDRAM modules should be populated in pair, and each module of the pair should be identical in density and Band-width and chip. The modules should also be of the same brand.

#### Dual-channel DDR SDRAM Module Configuration

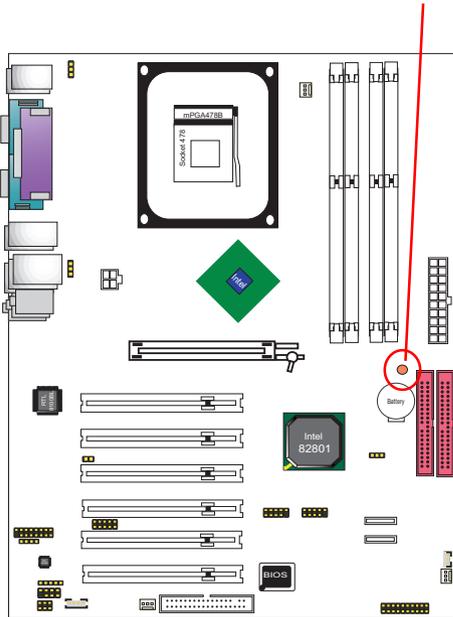
Dual-channel Bank		Configuration To Enable DDR Dual Channel
<b>Bank A</b>	DIMM 1	64MB ~ 1GB, identical with DIMM 3
	DIMM 3	64MB ~ 1GB, identical with DIMM 1
<b>Bank B</b>	DIMM 2	64MB ~ 1GB, identical with DIMM 4
	DIMM 4	64MB ~ 1GB, identical with DIMM 2



### 1.6.2 DIMM Powered-on LED: LED1

LED1 is a warning LED. Whenever system is in Suspend-to-RAM mode or system is powered on, LED1 will light up to give the warning signal that DIMM slots are powered on, and no DIMM should be applied to or removed from the DIMM slot at this moment.

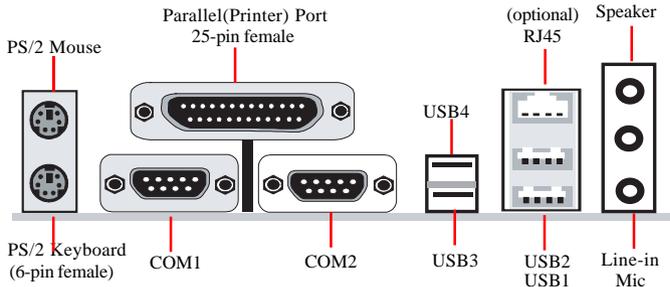
LED1 Lights Up: DIMM slots are powered on.



## 1.7 Connectors & Jumpers Setting

### 1.7.1 Back Panel I/O Connectors

This motherboard provides the following back panel connectors:



#### 1.7.1.1 PS/2 Mouse / Keyboard CONN.

The motherboard provides a standard PS/2 mouse / Keyboard mini DIN connector for attaching a PS/2 mouse. You can plug a PS/2 mouse / Keyboard directly into this connector.

#### 1.7.1.2 USB Ports: USB1/2/3/4

The motherboard provides a OHCI(Open Host Controller Interface)Universal Serial Bus Roots for attaching USB devices such as a keyboard, mouse and other USB devices. You can plug the USB devices directly into this connector.

### 1.7.1.3 Serial Interface Port: COM1/COM2

The serial interface port is sometimes referred to as an RS-232 port or an asynchronous communication port. Mice, printers, modems and other peripheral devices can be connected to a serial port. The serial port can also be used to connect computer systems together. If you like to transfer the contents of your hard disk to another system, it can be accomplished with serial port.



### 1.7.1.4 Parallel Interface Port

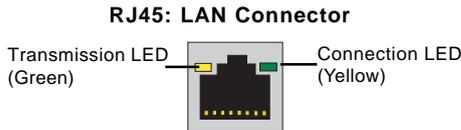
Unlike serial ports, parallel interface ports have been standardized. Sometimes called a Centronics port, the parallel port is almost exclusively used with printers. The parallel port on your system is a 25-pin, DB 25 connector.

### 1.7.1.5 Audio Port Connectors

Speaker out is a connector for Speakers or Headphones. Line-in is used for external CD player, Tape player, or other audio devices. Mic is a connector for the microphones.

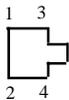
### 1.7.1.6 LAN Connector (optional): RJ45

One RJ45 connector is on Back Panel for networking connection and also provides support for Wake On LAN function.

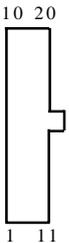


### 1.7.2 ATX Main Power Connectors: PW1/PW2

This connector supports the power button on-board. Using the ATX power supply, functions such as Modem Ring Wake-Up and Soft Power Off are supported on this motherboard. This power connector supports instant power-on functionality, which means that the system will boot up instantly when the power connector is inserted on the board. ATX 4-pin power connector only support +12V voltage.



Pin PW1 Signal		Pin PW1 Signal	
1	GND	2	GND
3	+12V	4	+12V



Pin PW2 Signal		Pin PW2 Signal	
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	GND	13	GND
4	5V	14	PS-ON
5	GND	15	GND
6	5V	16	GND
7	GND	17	GND
8	PW-OK	18	-5V
9	5V_SB	19	5V
10	12V	20	5V

**Note:**

When you set up P4 power supply, both PW1 and PW2 must be connected to power.

**Important:**

To switch on your power supply, please make sure:

1. Memory Module is properly installed.
2. Power supply setup is OK.

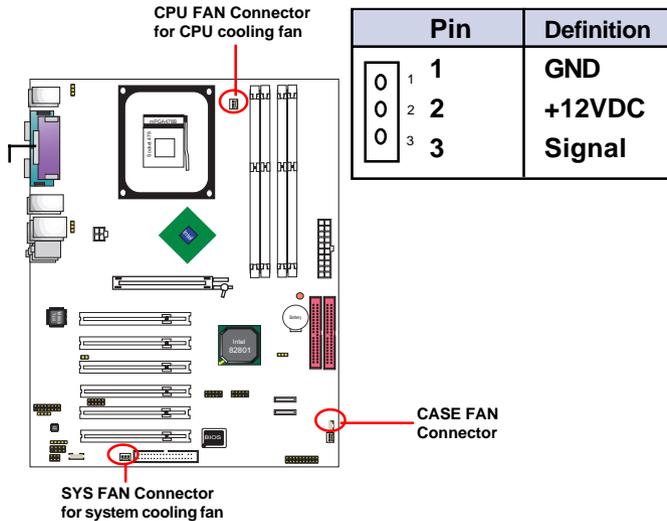
### 1.7.3 Floppy Disk Connector: FDD

This connector supports the provided floppy drive ribbon cable. After connecting the single end of the cable to the board, connect the two plugs on the other end to the floppy drives.

### 1.7.4 Hard Disk Connectors: IDE1/IDE2

These connectors are provided with IDE hard disk ribbon cable into the package. After connecting the end of cable with single connector to the mainboard, connect the other two connectors at the other end to your hard disk. If you install two hard disks, you must configure the second drive to Slave mode by setting its jumper settings. BIOS now supports SCSI device or IDE CD-ROM boot up (see "HDD Sequence SCSI/IDE First" & "Boot Sequence" in the BIOS Features Setup of the BIOS SOFTWARE).

### 1.7.5 Cooling Fan Connectors:



### 1.7.6 CD Audio-In: CD-IN

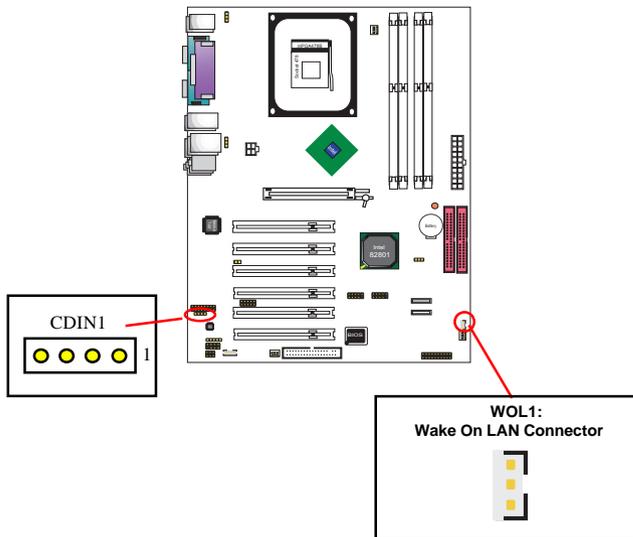
CDIN1 are the connectors for CD-Audio Input signal. Please connect them to CD-ROM CD-Audio output connector.

CDIN1 and CDIN2 have the same pin assignment but different pin pitch.

Pin	CDIN	Definition
1		CD-L
2		CD-GND
3		CD-GND
4		CD-R

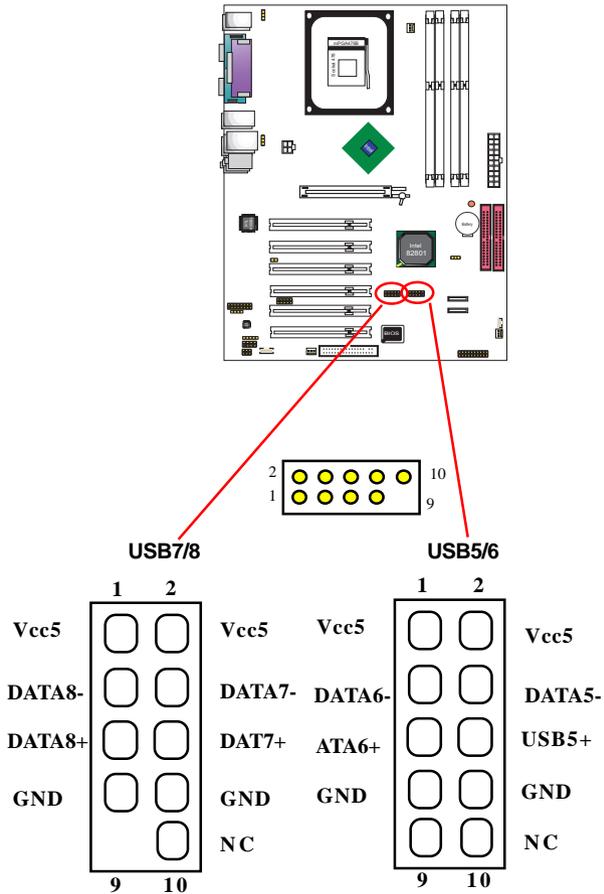
### 1.7.7 Wake On LAN Connector: WOL1

CN2 is an Wake On LAN (WOL) connector for transmitting the Ring signal from a PCI LAN card to wake up system. If you use a PCI LAN card for system networking, you can connect this Wake On LAN connector with the PCI LAN card on board for Wake On LAN function.

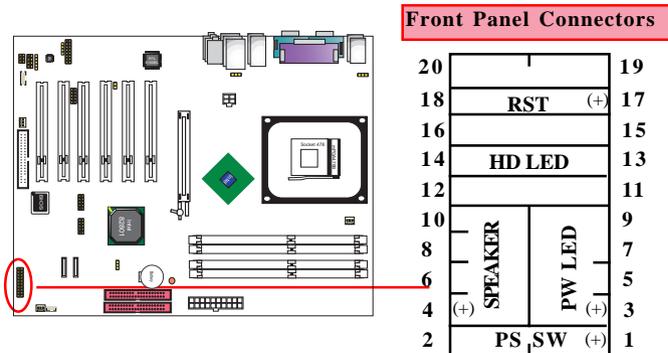


### 1.7.8 USB Pin Headers: USB5/6 & USB7/8

USB5/6 and USB7/8 are 2x5 Pin Headers for support of 4 external USB ports. Each USB pin header requires a USB cable to connect to the chassis Front Panel for expansion of two USB ports.



## 1.7.9 Front Panel Connectors: PANEL1



### PSSW

The system power is controlled by a momentary switch connected to this lead. Pushing the button once will switch the system ON.

### Power LED Lead (PW\_LED)

The system power LED lights when the system power is on.

### Speaker Connector (SPEAKER)

The speaker (onboard or offboard) provides error beep code information during the Power Self-Test when the computer cannot use the video interface. The speaker is not connected to the audio subsystem and does not receive output from the audio subsystem.

### Hard Drive LED Connector (HD\_LED)

This connector supplies power to the cabinet IDE activity LED. Read and write activity by devices connected to the Primary or Secondary IDE connectors will cause the LED to light up.

### Reset Switch Lead (RST)

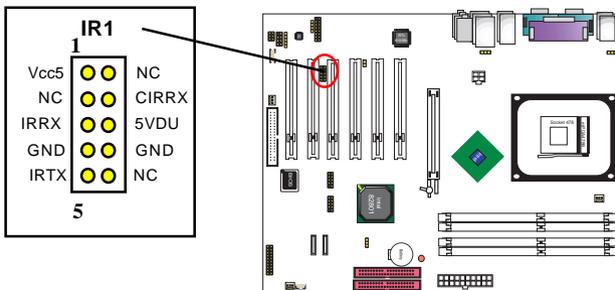
The connector can be connected to a reset switch. Press this reset switch to restart system.

### SMI Suspend Switch LED (G-BUN) (Disabled)

This allows the user to manually place the system into a suspend mode of Green mode. System activity will be instantly decreased to save electricity and expand the life of certain components when the system is not in use. This 2-pin connector (see the figure) connects to the case-mounted suspend switch. If you do not have a switch for the connector, you may use the "Turbo Switch" instead since it does not have a function. If you want to use this connector, the "Suspend Switch" in the Power Management Setup of the BIOS SOFTWARE section should be enabled.

### 1.7.10 IR infrared module: IR1 Connector

This connector supports the optional wireless transmission and reception infrared module. You must configure the setting through the BIOS setup to use the IR function.



### 1.7.11 2-channel Audio Connector: (J3)

This connector is a 2-channel audio-out connector supporting audio-out function.

### 1.7.12 SPDIF Digital Audio Connector: J1

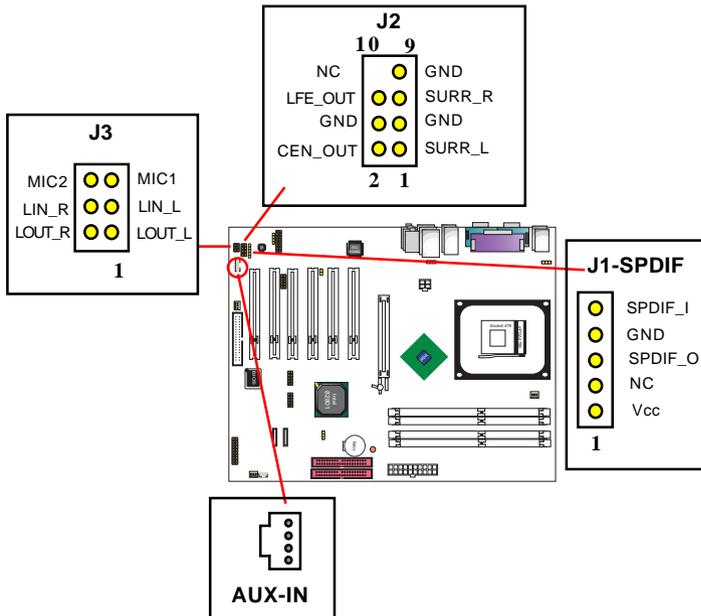
J1 supports the digital interface format SPDIF and provides the digital Audio input/output playback and supporting digital device (MD, Speaker)..

### 1.7.13 4-channel Audio-out Connector: J2

J2 connector is a 4-channel audio-out connector to transmit audio signals out.

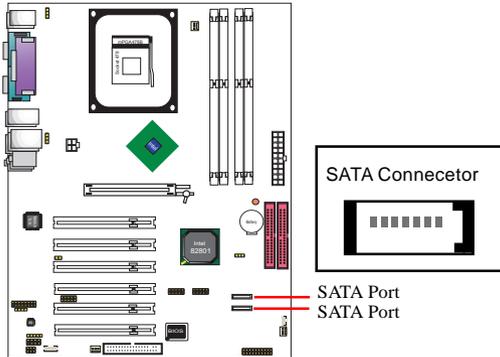
### 1.7.14 Audio-in Connector: AUX\_IN

AUX\_IN connector provides an audio-in channel for audio device to transmit audio signals to motherboard and out.



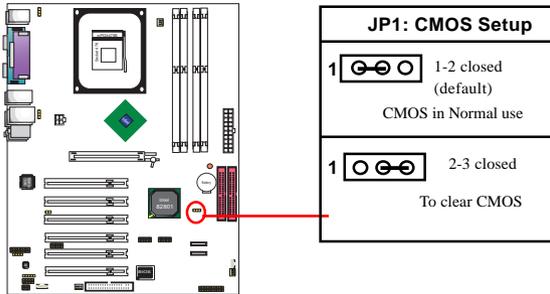
### 1.7.15 Serial ATA Connector:

Two SATA Connectors are built on board for high speed data transfer rate up to 150MB/s. Hard Disk Drive with Serial ATA Interface is supported by these two SATA Connector.



### 1.7.16 CMOS Function Selector: Jp1

When you have problem with booting system, you may clear CMOS to restore the optimum default BIOS data.



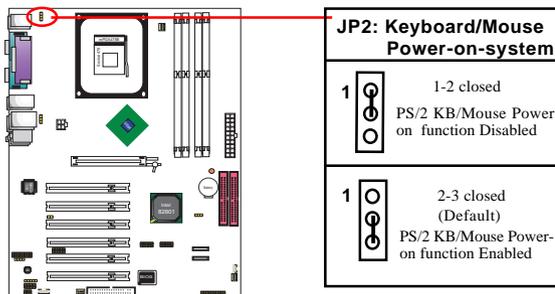
The “Clear CMOS” steps:

1. Remove the Jumper cap of Jp1 from 1-2.
2. After 1 or two seconds, set Jp1 to 2-3 closed with the jumper cap.
3. After 1 or two seconds, restore the Jp1 to 1-2 closed.

Now, the CMOS RAM has restored to the optimum default setting.

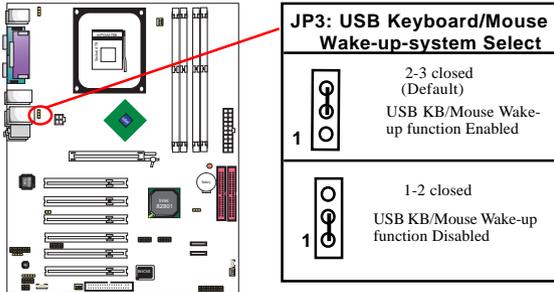
### 1.7.17 Keyboard/Mouse Wake-up select: Jp2

Jp2 is designed to enable/disable the Power-on-system function by PS/2 Keyboard/Mouse:



### 1.7.18 USB Keyboard/Mouse Wake-up Select: Jp3

Jp3 is designed to enable /disable the Wake-up--system function by USB Keyboard/Mouse (for USB1 and USB2 ports only):



# Chapter 2

## BIOS Setup

## 2. BIOS Setup

### 2.1 BIOS Support

This chapter discusses the Award BIOS Setup program built in the ROM BIOS. The Setup program allows the user to modify the basic system configuration. The modification is then stored in battery-backed RAM so that it can retain the setup information after the power is turned off. The Award BIOS installed in your computer system ROM (Read Only Memory) is a custom version of an industry standard BIOS. The BIOS provides critical low-level support for standard devices such as disk drives and serial and parallel ports. This chapter is intended for guiding you through the process of configuring your system BIOS.

#### **Plug and Play Support**

This AWARD BIOS supports the Plug and Play Version 1.0A specification. ESCD(Extended System Configuration Data) write is also supported.

#### **EPA Green PC Support**

This AWARD BIOS supports Version 1.03 of the EPA Green PC specification.

#### **PCI Bus Support**

This AWARD BIOS also supports Version 2.1 of the Intel PCI (Peripheral Component Interconnect) local bus specification.

### **APM Support**

This AWARD BIOS supports Version 1.1&1.2 of the Advanced Power Management(APM) specification.Power management features are implemented via the System Management Interrupt(SMI). Sleep and Suspend power management modes are supported. Power to the hard disk drives and video monitors can be managed by this AWARD BIOS.

### **DRAM Support**

SDRAM (Synchronous DRAM) are supported.

### **CPU Support**

This AWARD BIOS supports the Intel P4 Processor.

### **Setup Menu**

In general, you use the arrow keys to highlight items of the Main BIOS Setup Menu, press <Enter>to select, use the <PgUp>and <PgDn>keys to change entries, press<F1>for help and press <Esc> to quit The following table provides more detail about how to navigate in the Setup program by using the keyboard.

**Note:**

**(BIOS version 1.0 is for reference only. If there is a change in BIOS version, please use the latest updated version of the BIOS.)**

<b>Keystroke</b>	<b>Function</b>
Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item on the left(menu bar)
Right arrow	Move to the item on the right(menu bar)
Esc	Main Menu: Quit without saving changes Submenus: Exit Current page to the next higher level menu
Move Enter	Move to item you desired
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+Key	Increase the numeric value or make changes
-Key	Decrease the numeric value or make changes
Esc Key	Main menu-Quit and not save changes into CMOS Status Page Setup Menu and option Page Setup Menu-Exit Current page and return to Main Menu
F1 Key	General help on Setup navigation keys.
F5 Key	Load previous values from CMOS
F6 Key	Load the fail-safe defaults from BIOS default table
F7 Key	Load the optimized defaults
F10 Key	Save all the CMOS changes and exit



**Standard CMOS Features**

This setup page includes all the items in standard compatible BIOS.

**Advanced BIOS Features**

This setup page includes all the items of the BIOS special enhanced features.

**Advanced Chipset Features**

This setup page includes all the items of the Chipset special enhanced features.

**Integrated Peripherals**

This selection page includes all the items of the IDE hard drive and Programmed Input/Output features.

**Power Management Setup**

This setup page includes all the items of the power management features.

**PnP/PCI Configurations**

This setup page includes the user defined or default IRQ Setting.

**PC Health Status**

This page shows the hardware Monitor information of the system.

**Frequency/Voltage Control**

This setup page controls the CPU's clock and frequency ratio.

**Load Fail-safe Defaults**

Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate.

**Load Optimized Defaults**

These settings are for configuring a workable computer when something is wrong. If you cannot boot the computer successfully, select the BIOS Setup options and try to diagnose the problem after the computer boots. These settings do not provide optional performance.

**Set Supervisor/User Password**

Change, set, or, disable password. It allows you to limit access to the system and Setup, or just to Setup.

**Save & Exit Setup**

Save CMOS value changes to CMOS and exit setup.

**Exit Without Saving**

Abandon all CMOS value changes and exit setup.

## 2.3 Standard CMOS Features

This main option in the Standard CMOS Setup Menu is divided into 10 fields or items. Each field provides one or more setup choices. Use the arrow keys to highlight the field and then use the <PgUp> or <PgDn> keys to select the value or choice.

### Phoenix - AwardBIOS CMOS Setup Utility Standard CMOS Features

Date(mm:dd:yy)	Tue,Jun 6 2002	Item Help
Time (hh:mm:ss)	11:26:10	
▷ IDE Primary Master	[None]	Menu Level
▷ IDE Primary Slave	[None]	Change the day, month,year and century.
▷ IDE Secondary Master	[None]	
▷ IDE Secondary Slave	[None]	
Drive A	1.44M,3.5 in	
Drive B	None	
Floppy 3 Mode Support	Disabled	
Video	EGA/VGA	
Halt On	All,But Keyboard	
Base Memory	640K	
Extended Memory	65472K	
Total	1024K	

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

## Main Menu Selections

Item	Options	Description
Date (mm : dd :yy)	Month Day Year	Set the system,date. Note that the 'Day' automatically changes when you set the data.
Time (hh : mm : SS)	Hour Minute Second	Select the hour, minute and second of the time.
IDE Primary Master	Options are in its sub menu.	Press<Enter> to enter sub menu.
IDE Primary/ Slave	Options are in its sub menu.	Press<Enter> to enter sub menu.
IDE Second- ary Master	Options are in its sub menu.	Press<Enter> to enter sub menu.
IDE Second- ary Slave	Options are in its sub menu.	Press<Enter> to enter sub menu
Drive A Drive B	None 360K,5.25in, 1.2M,5.25in 720K,3.5M 1.44M,3.5in 2.88M,3.5in	Select the type of floppy disk drive installed in your system.
Floppy 3 Mode Support	Disabled Driver A Driver B Both	Disable or support the 3rd floppy mode in Drive A, or Drive B or both.
Video	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device.

Item	Options	Description
Halt On	All Errors No Errors All, but Keyboard All, but Diskette All, but Disk/Key	Select the situation in which you want the BIOS to stop the POST process and notify.
Base Memory	(640K)	The amount of conventional memory detected during boot up.
Extended Memory	( 65472K )	The amount of conventional memory detected during boot up.
Total Memory	( 1024K )	The total memory available in system.

### IDE Primary(Master/Slave)/Secondary(Master/Slave)

Press Enter on these items to show the following sub-menu:

#### Primary Master/Secondary

IDE HDD Auto-Detection	Press Enter	Item Help
IDE Primary Master	Auto	Menu Level
Access Mode	Auto	
Capacity	13022MB	
Cylinder	25232	
Head	16	
Precomp	0	
Landing Zone	25231	
Sector	61	

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

**IDE HDD Auto-Detection**

Press Enter on this item to let BIOS auto-detect your Hard Disk and show all the Primary Hard Disk Parameters ( Capacity, Cylinder, Head, Precomp, Landing Zone, Sector) on the menu.

**IDE Primary(Master/Slave)/Secondary(Master/Slave)**

This item allows you to detect the Hard Disk in 3 ways.

- The Choices: Auto: BIOS Auto-detect HDD;
- None: No Hard Disk detected;
- Manual: Manually detect HDD

**Access Mode**

This item allows you to select the Access mode to the Hard Disk..

The Choices:

- CHS: Select the Cylinder, Head, Sector addressing mode to access Hard Disk;
- LBA: Select the Logical Block Addressing mode to access Hard Disk.
- Large: Select Large Mode to access Hard Disk;
- Auto: Allow BIOS to auto-access Hard Disk;

**Capacity**

Showing the capacity of Hard Disk in MB.

**Cylinder**

Showing the number of cylinder in the Hard Disk.

**Head**

Showing the number of heads in the Hard Disk.

**Precomp**

The number of Pre-compensation.

**Landing Zone**

Number of Landing zone in the Hard Disk.

**Sector**

The number of Sector in the Hard Disk.

## 2.4 Advanced BIOS Features

### Phoenix - AwardBIOS CMOS Setup Utility Advanced BIOS Features

Virus Warning	Disabled	Item Help
CPU L1 & L2 Cache	Enabled	
Hyper-Threading Technology	Enabled	
Quick Power On Self Test	Enabled	
First Boot Device	Floppy	
Second Boot Device	HDD-0	
Third Boot Device	CD-ROM	
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	
x MPS Version Control For OS	1.4	
OS Select For DRAM >64MB	Non-OS2	
HDD S.M.A.R.T. Capability	Disabled	
EPA / (H/W Monitor) 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

#### Virus Warning

This option allows you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempts to write data into this area, BIOS will show a warning message on screen and alarm beep.

The Choices:

Disabled(default), Enabled.

**CPU L1 & L2 Cache**

These fields allow you to Enable or Disable the CPU's L1(Internal) / L2(External) cache to provide better performance.

The choices:

Enabled(default); Disabled

**Hyper-Threading Technology**

Use this item to enable/disable the Hyper-threading Technology.

The choices: Enabled(default); Disabled

**Quick Power On Self Test**

This category speeds up Power on self-Test(POST) after you power up the computer. If it is set to Enabled, BIOS will shorten or skip some check items during POST.

The choices:

Enabled(default); Disabled

**First/Secondary/Third Boot Device**

This BIOS attempts to load the operating system from the devices in the sequence selected in these items.

The Choices:

Floppy, LS120, HDD-0, SCSI, CDROM, HDD-1, HDD-2, HDD-3, ZIP100, LAN, USB-FDD, USB-Zip, USB-CDROM, USB-HDD, Disabled.

**Boot Other Device**

Allows user to set booting from other devices.

The Choices:

Enabled(default), Disabled.

**Swap Floppy Drive**

If the system has two floppy drives, you can swap the logical drive name assignments.

The Choices:

Disabled(default), Enabled.

**Boot Up Floppy Seek**

If enabled, this item allows BIOS to test floppy drives to determine whether they have 40 or 80 tracks.

The Choices:

Disabled(default), Enabled.

**Boot Up NumLock Status**

Select power on state for Numlock..

The Choices

On (default): Numpad is number keys;

Off: Numpad is arrow keys;

**Gate A20 Option**

Select if chipset or keyboard controller should control Gate A20.

The choices:

Normal: A pin in the keyboard controller controls Gate A20.

Fast (default): Lets chipset control Gate A20.

**Typematic Rate Setting**

Allows user to adjust the key stroke repeat rate.

The choices:

Enabled: Enabled this option to adjust the keystroke repeat rate; Disabled (default): Disabled.

**Typematic Rate (Char/Sec)**

Range between 6(**default**) and 30 characters per second. This option controls the speed of repeating keystrokes.

**Typematic Delay (Msec)**

This option sets the time interval for displaying the first and the second characters.

The Choices: 250(default), 500, 750, 1000.

**Security Option**

This category allows you to determine whether to use password access the system and Setup, or just Setup.

The choices:

System: To access system and BIOS Setup with correct password.

Setup (default): To access BIOS Setup with correct password.

**APIC Mode**

Use this item to enable/disable the APIC Mode.

The Choices: Enabled(default); Disabled

**MPS Version Control for OS**

Use this item to select the MPS Version Control for OS.

The Choices: 1.4(default); 1.1

**OS Select For DRAM >64MB**

Select the operating system that is running with greater than 64MB of RAM on the system.

The Choices: Non-OS2(default), OS2.

**HDDS.M.A.R.T. Capability**

Allows user to choose the Self-monitoring Analysis and Reporting Technology for Hard Disk Drive.

The choices: Disabled(default); Enabled

**EPA/(H/W Monitor) Show**

Use this item to enable/disable the Environmental Protection Association (EPA) / Hardware Monitor) logo on initiating screen..

The choices: H/W Monitor; EPA Logo

## 2.5 Advanced Chipset Features

This section allows you to configure the system based features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and external cache. It also coordinates communications of the PCI bus. It must be stated that these items should never be altered. The default settings are set up to provide the best operating conditions for your system. The time you might need to make any changes would be if you discover that data is lost while using your system.

### Phoenix - AwardBIOS CMOS Setup Utility Advanced Chipset Features

		Item Help
DRAM Timing Selectable	By SPD	
x CAS Latency Time	2.5	
x Active to Precharge Delay	7	
x DRAM RAS# to CAS# Delay	3	
x DRAM RAS# Precharge	3	
Memory Frequency for	Auto	
System BIOS Cacheable	Enabled	
Video BIOS Cacheable	Disabled	
Memory Hole At 15M-16M	Disabled	
Delay Prior to Thermal	16 Min	
AGP Aperture Size (MB)	128MB	
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

**DRAM Timing Selectable**

Use this item to select the DRAM Timing mode.

The Choices:

By SPD: DRAM Timing is by Serial Presence Detect (SPD) which is located on the memory module itself.

Manual: DRAM Timing is set manually with the options following this item below.

**CAS Latency Time**

This item is to set CAS (Column Access Stroke) Latency time.

The Choices: Auto; 1.5; 2; 2.5;

**Active to Precharge Delay**

This item is to set Active to Precharge Delay cycle.

The Choices: Auto; 7; 6; 5

**DRAM RAS# to CAS# Delay**

This item is to set the DRAM RAS (Row Access Stroke) to CAS (Column Access Stroke) Delay cycle.

The Choices: Auto; 3; 2

**DRAM RAS# Precharge**

This item is to set the DRAM RAS Precharge cycle.

The Choices: Auto; 3; 2

**Memory Frequency For**

This item is to set the DRAM frequency.

The Choices: Auto(default); DDR266; DDR333 (if DDR333 is applied)

**System BIOS Cacheable**

When enabled, the access to the system BIOS ROM address at F0000H-FFFFFFH is cached.

The Choices: Enabled(default), Disabled.

**Video BIOS Cacheable**

Enabled: Enable Video BIOS Cacheable.

Disabled (default):Disable Video BIOS Cacheable.

**Memory Hole At 15-16M**

In order to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory's space below 16MB.

The Choices: Disabled(default); Enabled.

**Delay Prior to Thermal**

This item is to set the Delay Prior to Thermal cycle.

The Choices: 4min; 8min; 16min(default); 32min.

**AGP Aperture Size**

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

The Choices: 128MB(default); 64MB; 32MB; 16MB; 8MB; 4MB; 256MB

**Init Display First**

To select the initial display at system bootup.

The Choices: Onboard/AGP; PCI Slot.

## 2.6 Integrated Peripherals

This section allows you to configure the IDE Devices, Onboard Devices and Super IO Devices.

### Phoenix - AwardBIOS CMOS Setup Utility Integrated Peripherals

▶ Onchip IDE Device	Press Enter	Item Help
▶ Onboard Device	Press Enter	
▶ Super IO Device	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

### 2.6.1 OnChip IDE Device

Press <Enter> on the item “OnChip IDE Device to configure the onboard IDE devices. The following menu appears for user’s configuration:

### Phoenix - AwardBIOS CMOS Setup Utility OnChip IDE Device

IDE HDD Block Mode	Enabled	Item Help
OnChip Primary PCI IDE	Enabled	
IDE Primary Master PIO	Auto	
IDE Primary Slave PIO	Auto	
IDE Primary Master UDMA	Auto	
IDE Primary Slave UDMA	Auto	
On-Chip Secondary PCI IDE	Enabled	
IDE Secondary Master PIO	Auto	
IDE Secondary Slave PIO	Auto	
IDE Secondary Master UDMA	Auto	
IDE Secondary Slave UDMA	Auto	
*** On-Chip Serial ATA Setting ***		
On-Chip Serial ATA	Disabled	
x Serial ATA Port0 Mode	Primary Master	
x Serial ATA Port1 Mde	Primary Slave	

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

**IDE HDD Block Mode**

Use this item to enable or disable the IDE Hard Disk Block mode. If your hard drive supports block mode, select “Enabled” for automatic detection of the optimal number of block read/write per sector.

The Choices: Enabled; Disabled

**On-Chip Primary PCIIDE**

Use this item to enable or disable the primary IDE channels that are integrated on the mainboard.

The Choices: Enabled (default); Disabled

**IDE Primary Master/Slave PIO**

Auto (default):BIOS will automatically detect the IDE HDD Accessing mode.

Mode 0~4: Manually set the IDE Accessing mode.

**IDE Primary Master/Slave UDMA**

Auto (default):BIOS will automatically enable Ultra DMA mode of the IDE HDD Accessing .

Disabled: UDMA mode is disabled

**On-Chip Secondary PCIIDE**

Use this item to enable or disable the secondary IDE channels that are integrated on the mainboard.

The Choices: Enabled (default); Disabled

**IDE Secondary Master/Slave PIO**

Auto (default):BIOS will automatically detect the IDE HDD Accessing mode.

Mode 0~4: Manually set the IDE Accessing mode.

**IDE Secondary Master/Slave UDMA**

Auto (default):BIOS will automatically enable the Ultra DMA mode of the IDE HDD Accessing mode.

Disabled: Ultra DMA disabled.

**OnChip Serial ATA**

Use this item to select the onchip serial ATA mode.

The Choices: Disabled; Auto; Combined Mode; Enhanced Mode; SATA only

**Serial ATA port0 Mode**

If OnChip Serial ATA is set at “Manual”, use this item to select the serial ATA port mode.

The Choices: Primary Master/Slave; Secondary Master/Slave; SATA0 Master; SATA1 Master; Primary Master; Secondary Master

**Serial ATA port1 Mode**

If OnChip Serial ATA is set at “Manual”, use this item to select the serial ATA port mode.

The Choices: Primary Master/Slave; Secondary Master/Slave; SATA0 Master; SATA1 Master; Primary Master; Secondary Master

**2.6.2 Onboard Device**

Press <Enter> on the item “Onboard Device to configure the onboard USB, audio devices etc. The following menu appears for user’s configuration:

Phoenix - AwardBIOS CMOS Setup Utility  
OnChip IDE Device

USB Controller	Enabled	Item Help
USB 2.0 Controller	Enabled	
USB Keyboard Support	Enabled	
USB Mouse Support	Disabled	
AC97 Audio	Auto	
AC97 Modem	Auto	
RTL 8100 LAN chip (optional)	Disabled	

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

**USB Controller**

If USB Controller is enabled, use this item to enable or disable USB devices.

The Choices: Enabled (default); Disabled

**USB 2.0 Controller**

If USB Controller is enabled, use this item to enable or disable USB 2.0 controller.

The Choices: Enabled (default); Disabled

**USB Keyboard Support**

If USB Controller is enabled, use this item to enable or disable the USB Keyboard Support.

The Choices: Enabled (default); Disabled

**USB Mouse Support**

If USB Controller is enabled, use this item to enable or disable USB Mouse.

The Choices: Enabled (default); Disabled

**AC97 Audio/Modem**

Use this item to enable/disable the AC97 Audio/Modem.

The Choices: Auto(Automatically enabled); Disabled

**RTL 8100 LAN chip**

Use this item to enable/disable the RTL 8100 LAN chip.

The Choices: Enabled; Disabled

### 2.6.3 Super IO Device

Press <Enter> on the item “Super IO Device” to configure the Super IO devices. The following menu appears for user’s configuration:

Phoenix - AwardBIOS CMOS Setup Utility  
OnChip IDE Device

		Item Help
Onboard FDC Controller	Enabled	
Onboard Serial Port 1	3F8/IRQ4	
Onboard Serial Port 2	2F8/IRQ3	
UART Mode Select	Normal	
x Rx/D, Tx/D Active	Hi, Lo	
x IR Transaction Delay	Enabled	
x UR2 Duplex Mode	Half	
x Use IR Pins	IR-Rx2Tx2	
Onboard Parallel Port	378/IRQ7	
Parallel Port Mode	ECP	
x EPP Mode Select	EPP1.7	
x ECP Mode Use DMA	3	
PWRON After PWR-Fail	Off	
Game Port Address	201	
MIDI Port Address	330	
MIDI Port IRQ	10	

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

#### Onboard FDC Controller

The choices: Enabled (default) Disabled

#### Onboard Serial Port 1/2

Select an address and corresponding interrupt for the first and second serial ports.

The Choices: Auto; 3F8/IRQ4; 2F8/IRQ3; 3E8/IRQ4; 2E8/IRQ3; Disabled.

#### UART Mode Select

This item allows you to select which Infra Red(IR) function of the onboard I/O chip you wish to use.

The Choices: Normal(default), IrDA, ASKIR.

#### UR2DuplexMode

This item allows you to select which Infra Red(IR) function of the onboard I/O chip you wish to use.

The Choices: Half (default), Full.

**RxD, TxD Active**

If UART Mode Select is at “IRDA or ASKIR, this item allows you to select the RxD, TxD Active mode.

The Choices: Hi, Lo; Lo, Hi; Lo, Lo; Hi, Hi.

**IR Transaction Delay**

If UART Mode Select is at IRDA or ASKIR, this item allows you to enable/disable the IR Transaction Delay function.

The Choices: Enabled; Disabled

**UR2 Duplex Mode**

This item allows you to select the UR2 Duplex mode.

The Choices: Full; Half

**Use IR Pins**

This item allows you to select the IR pins.

The Choices: 3IR-R2Tx2; RxD2, TxD2;

**Onboard Parallel Port**

This item allows you to select the onboard parallel port and IRQ.

The Choices: 378/IRQ7; 278/IRQ5; 3BC/IRQ7; Disabled

**Parallel Port Mode**

The choices are for Parallel Port Mode select:

The choices: SPP; EPP; ECP; ECP+EPP

**EPP Mode Select**

This item is a submenu of “Parallel Port Mode”.

The choices: EPP1.7; EPP1.9

**ECP Mode Use DMA**

This item is a submenu of “Parallel Port Mode” for selecting the ECP Mode Use DMA..

The choices: 3; 1

**PWRON After PWR-Fail**

Set the Power-on mode when power resumes after power fails.:

The choices: Off (default); On; Former-Sts (former status)

**Game Port Address**

The choices are for setting Game Port Address:  
201 (default); 209; Disabled

**MIDI Port Address**

The choices are for setting MIDI Port Address:  
300; 330 (default); Disabled.

**MIDI Port IRQ**

The choices are for setting MIDI Port IRQ:  
10 (default); 5

## 2.7 Power Management Setup

Phoenix - AwardBIOS CMOS Setup Utility

### Power Management Setup

		Item Help
ACPI Function	Enabled	
ACPI Suspend Type	S1(POS)	
x Run VGABIOS If S3 Resume	Auto	
Power Management	User Define	
Video Off Method	V/H Sync+Blank	
Video Off In Suspend	Yes	
Suspend Type	Stop Grant	
Modem Use IRQ	3	
Suspend Mode	Disabled	
HDD Power Down	Disabled	
Soft-off by PWR-BTTN	Instant-off	
Power On By PME	Disabled	
Power On By Ring	Disabled	
Power On By WOL	Disabled	
Power On By USB	Disabled	
Resume by Alarm	Disabled	
x Date (of Month) Alarm	0	
x Time(hh:mm:ss) Alarm	0 : 0 : 0	
Power ON Function	Button Only	
x KB Power On Password	Enter	
x Hot Key Power On	Ctrl-F1	
** 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	

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

#### ACPIFunction

The choices are for enabling or disabling the Advanced Configuration and Power Management (ACPI).

#### ACPI Suspend Type

The choices are for setting the ACPI Suspend Type.

S1(Power On Suspend)(default); S3(Suspend To RAM); S1&S3

**Run VGABIOS If S3 Resume**

If ACPI Suspend Type is S3, use this item to select the “Run VGABIOS If S3 Resume” function.

The choices: Auto; Yes; No

**Power Management**

The choices are for setting the Power management mode:

User Define (default); Min Saving; Max Saving.

**Video Off Method**

The choices are for determining the manner in which the monitor is blanked.

The choices:

V/H SYNC+Blank (default): Turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.

Blank Screen: Writes blanks to the video buffer.

DPMS Supported: Initial display power management signaling.

**Video Off in Suspend**

This field determines when to activate the video off feature for monitor power management.

The Choices: Always on; No; Yes(default)

**Suspend type**

Use this item to select the Suspend Type.

The choices: Stop Grant(default); Power On Suspend

**Modem Use IRQ**

This determines the IRQ, which can be applied in Modem use.

The choices: 3 (default); 4;5; 7; 9; 10; 11; NA

**Suspend Mode**

Use this item to set the Suspend time.

The choices: Disabled(default); 1~60 min.

**HDD Power Down**

Use this item to set the HDD Power Down time.

The choices: Disabled(default); 1~15 min..

**Soft-off by PWR-BTTN**

Enables you to set the power button function in DOS.  
The Choices: Instant off(default); Delay 4 Sec.

**Power On By PME**

Use this item to enable/disable the Power On by PME function.

**Power On By Ring**

Use this item to enable/disable the Power On by Modem Ring signal.

**Power On By WOL**

Use this item to enable/disable the Power On by WOL function.

**Power On By USB**

Use this item to enable/disable the Power On by USB function..

**Resume by Alarm**

Use this item to enable/disable the RTC Alarm Resume function.  
Date: If RTC Alarm Resume is enabled, set the date with this item.  
Time: If RTC Alarm Resume is enabled, set the time with this item.

**Power On Function**

Use this item to select the Power On Mode.  
The Choices: Button Only; Keyboard 98; Password; Hot Key;  
Mouse Move; Mouse Click; Any Key

**KB Power On Password**

Enables you to set the Password by keyboard for Power On.

**Hot Key Power On**

Enables you to set the Hot Key for Power On.  
The Choices: Ctrl-F1 ~ Ctrl-F12

**Reload Global Timer Events:**

When enabled, the following devices listed below will restart the global timer for Standby mode.

**Primary IDE 0/1**

The choices: Disabled (default); Enabled

**Secondary IDE 0/1**

The choices: Disabled (default); Enabled.

**FDD, COM, LPT Port**

The choices: Disabled (default); Enabled

**PCIIRQ[A-D]#**

The choices: Disabled (default); Enabled

## 2.8 PnP/PCI Configurations

This section describes configuration of the PCI bus system. PCI or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed of the CPU itself when communicating with the components on board. This section covers some very technical items 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

Reset Configuration Data	Disabled	Item Help
Resources Controlled By x IRQ Resources	Auto(ESCD) Press Enter	
PCI/VGA Palette Snoop	Disabled	

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

**Reset Configuration Data**

The system BIOS supports the PnP feature so the system needs to record which resource is assigned and proceeds to get rid of resource conflict. Every peripheral device has a node, which is called ESCD (Extended System Configuration Data. This node records which resources are assigned to it. If Disabled (Default) is chosen, the system ESCD will update only when the new configuration varies from the last one. If Enabled is chosen, the system is forced to update ESCDs and then is automatically reset to the “Disabled” mode.

**Resources Controlled By**

By Choosing “Auto”(default), the system BIOS will detect the system resources and automatically assign the relative IRQ and DMA channel for each peripheral. By choosing “Manual”, the user will need to assign IRQ & DMA for add-on cards. Be sure that no IRQ/DMA and I/O port conflict exists.

**IRQ Resources :**

Press Enter to configure the following Submenus

**IRQ Resources**

IRQ-3 assigned to : PCI Device IRQ-4 assigned to : PCI Device IRQ-5 assigned to : PCI Device IRQ-7 assigned to : PCI Device IRQ-9 assigned to : PCI Device IRQ-10 assigned to : PCI Device IRQ-11 assigned to : PCI Device IRQ-12 assigned to : PCI Device IRQ-14 assigned to : PCI Device IRQ-15 assigned to : PCI Device	Item Help
---	-----------

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

**IRQ Resources**

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.

**PCI/VGA Palette Snoop**

Choose Disabled or Enabled. Some graphic controllers which are not VGA compatible take the output from a VGA controller and map it to their display as a way to provide boot information and VGA compatibility.

However, the color information coming from the VGA controller is drawn from the palette table inside the VGA controller to generate the proper colors, and the graphic controller needs to know what is in the palette of the VGA controller. To do this, the non-VGA graphic controller watches for the write access to the VGA palette and registers the snoop data. In PCI based systems, the Write Access to the palette will not show up on the ISA bus if the PCI VGA controller responds to the Write.

In this case, the PCI VGA controller should not respond to the Write, it should only snoop the data and permit the access to be forwarded to the ISA bus. The non-VGA ISA graphic controller can then snoop the data on the ISA bus. Unless you have the above situation, you should disable this option.

The choices: Disabled (default); Enabled

## 2.9 PC Health Status

Phoenix - AwardBIOS CMOS Setup Utility

### PC Health Status

	Item Help
System Temperature	
CPU Temperature	
CPU FAN	
SYS FAN	
Vcore	
Vcc 3.3V	
Vcc 5.0V	
Vcc 12.0V	
Voltage Battery	
Vsb 5.0V	

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

This menu shows the current status of the system, CPU and CPU Fan. No value in this menu can be changed manually.

#### **System/CPU Temp**

This item shows the current System/CPU temperature.

#### **CPU/SYSFAN**

This item shows the CPU/System fan speed running on board.

#### **Vcc3.3V/5.05V/12.0V**

These items show the respective voltage running on board.

#### **Voltage Battery**

These items show the battery voltage used on board.

## 2.10 Frequency/Voltage Control

### Phoenix - AwardBIOS CMOS Setup Utility Frequency/Voltage Control

		Item Help
Auto Detect PCI CLK	Enabled	
Spread Spectrum	Disabled	
CPU Clock	100MHz	

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

#### Auto Detect PCI CLK

This item allows you to enable/disable auto detect PCI CLOCK.  
The Choices: Disabled; Enabled (default)

#### Spread Spectrum

This function is designed for the EMI test only.  
The Choices: Disabled(default); +/- 0.25; +/- 0.35; +/- 0.45; -0.5

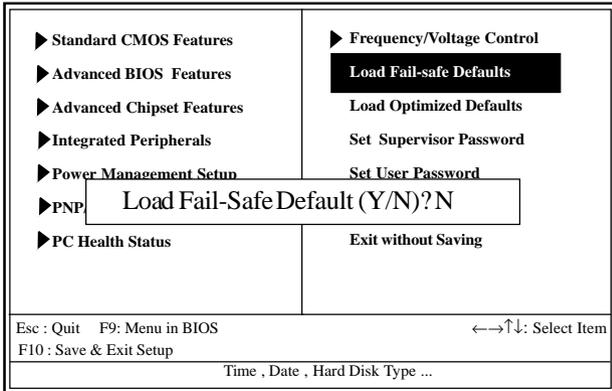
#### CPU Clock

Allows you to set the CPU clock for next boot..  
The Choices: 100MHz ~233MHz in 1MHz stepping

## 2.11 Load Fail-Safe Defaults

When you press <Enter> on this item, you get a confirmation dialog box with a message similar to below:

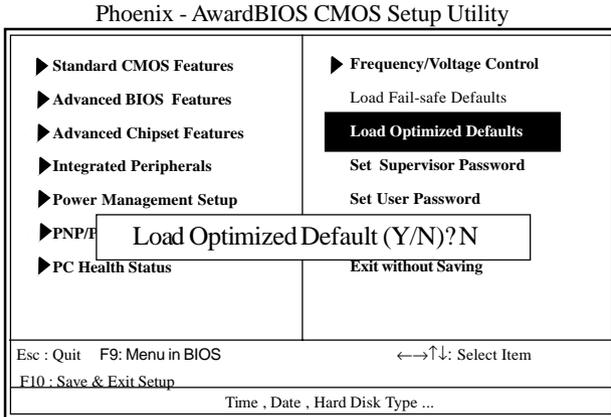
Phoenix - AwardBIOS CMOS Setup Utility



Pressing ‘Y’ loads the default values that are factory settings for optimal performance of system operations.

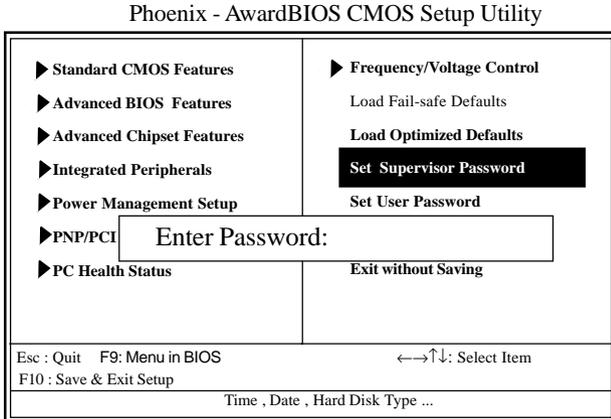
## 2.12 Load Optimized Defaults

When you press <Enter> on this item, you get a confirmation dialog box with a message similar to:



Pressing ‘Y’ loads the default values that are factory settings for optimal performance of system operations.

## 2.13 Set Supervisor / User Password



When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

### Enter Password (for Supervisor/User)

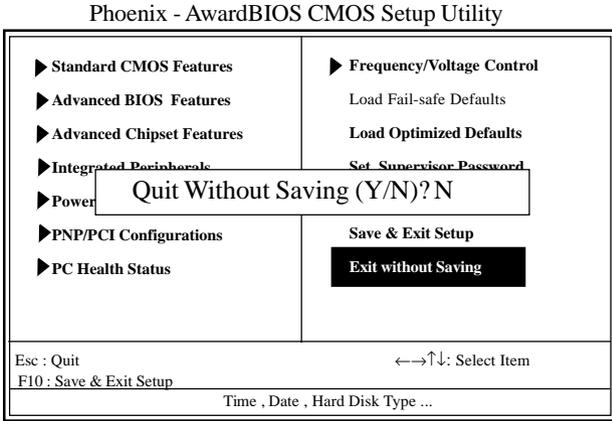
Type a password, up to eight characters, and press <Enter>. The password you type now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <ESC> to abort the selection and not enter a password. To disable the password, just press <Enter> when you are prompted to enter a password. A message will confirm that you wish to disable the password. Once the password is disabled, the system will boot without asking user to enter a password.

### Password for System or BIOS Setup

If you select “System” at the Security Option of BIOS Features Setup Menu, you will be prompted for the password every time when the system is rebooted, or any time when you try to enter Setup. If you select “Setup” at the Security Option of BIOS Features Setup Menu, you will be prompted only when you try to enter Setup.



## 2.15 Exit Without Saving



Typing “Y” will quit the Setup Utility without saving to RTC CMOS RAM.

Typing “N” will return to the Setup Utility.

# Chapter 3

## Drivers & Utilities

### 3. Drivers & Utilities

There are motherboard drivers and utilities included in the disc attached in this motherboard package. You don't have to install all of them for booting your system. But after you have finished the hardware installation, you have to install an operation system (such as windows XP) before you are able to install any drivers or utilities.

**Note: Please be aware of the different Procedures for installing drivers for Windows 98/ME/XP/2000 .**

#### 3.1 Auto-run Menu

You can use the auto-run menu in the driver CD attached in the motherboard package. Then choose the utility or driver and select model name. The autorun starting screen looks like below:



## 3.2 Installing Intel Inf

Enter the item "INTEL CHIPSET INSTALLATION" of the Autorun program and install Intelinf for Intel Chipsets support and Plug-n-Play INF support. Follow the illustrations below :



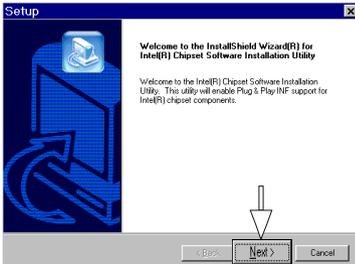
(1)  
Click "Driver" Item.



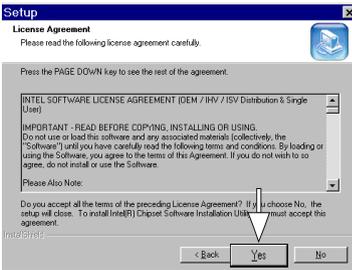
(2)  
Click "Chipset" Item.



(3)  
Click "Intel Chipsets Installation" Item.



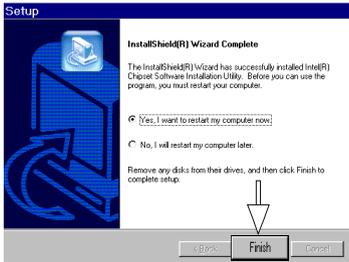
(4)  
Click "Next".



(5)  
Click "Yes".



(6)  
Click "Next".



(7)  
Click "Finish".

**Note:** While Intel INF Driver is necessary for Intel 865 plus ICH5 chipset, the installation of Intel Application accelerator Driver is no longer necessary.

## 3.3 Installing Audio Driver

This motherboard comes with an AC97 CODEC V2.2, 6-channel compatible. You can find the Audio driver from this Auto-run menu.

### 3.4.1 Installing 6-channel Driver



(1)

Click "Driver" Item.



(2)

Click "Audio" Item.



(3)

Click "Avance Logic Codec" to install 6-channel Audio Driver.



(4)  
Click "Next".

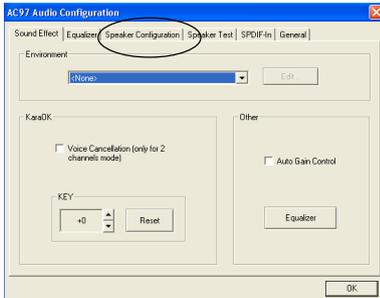


(5)  
Click "Finish".

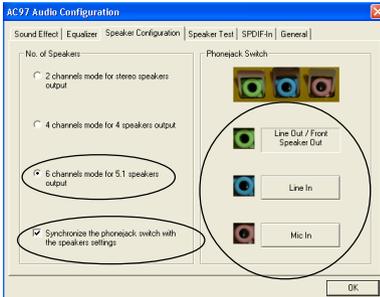
### 3.4.2 Verifying 6-channel Driver

(1) Click the Audio Manager "Sound Effect" on the Start Screen.

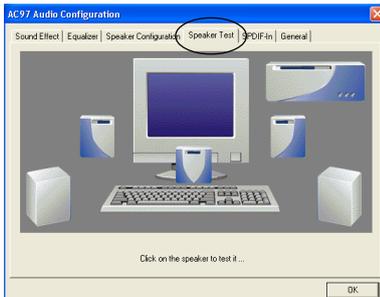




(2)  
Click "Speaker Configuration" button to configure the Audio connectors on mainboard.



(3)  
Follow the instructions on the screen to configure the Audio connectors on board.



(4)  
Click "Speaker Test" button to test the 6-channel speakers.

## 3.4 Installing USB 2.0 Driver



(1)  
Click the "USB " item.



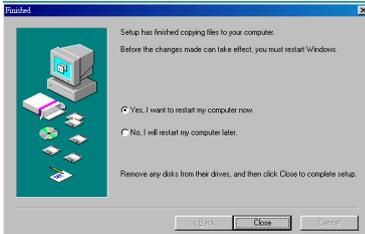
(2)  
Click the "USB 2.0  
ICH5 INF Package" for  
Win 98/ME.

**Note:** Please note that this USB 2.0 Driver only supports Win 98 and Win ME.



(3)

**Click "Yes" button to agree to the License Agreement and continue.**

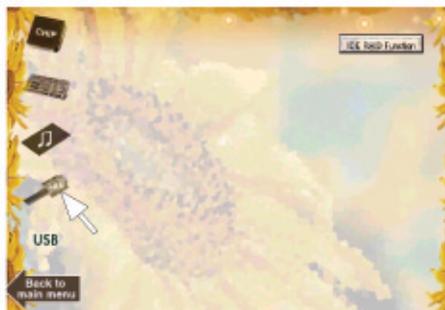


(4)

**In a few seconds, setup completes. Click the "Close" button to restart system and complete setup.**

(5) For USB 2.0 driver for Windows 2K /XP, user must install the latest Service Pack for the respective operating system. The latest Service Pack for Windows 2K/XP can be found and downloaded for free from Microsoft Web Site: <http://www.microsoft.com>

## 3.6 Installing LAN Drivers (For 4865PEN)



(1)  
Click the "LAN" item.



(2)  
Click the "for Windows 98" bar to install LAN driver for Windows 98.

### (3) Follow the instructions on the screen to install LAN driver for Windows 98.

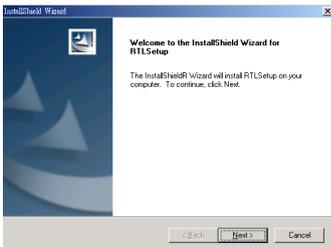
Install Realtek RTL8139C&RTL8100 PCI Fast Ethernet NIC Windows 98 Driver Manually

1. Right click the "My Computer" icon on the desktop.  
When the menu appears click "Properties" item.
2. Select "Hardware" page and then click [Device Manager] button.
3. View device by type and find "Network adapters" node.
4. Right click the " PCI Ethernet Controller " node.
5. When the menu appears, click the "Properties" item.
6. Please select [Driver] page and click "Update Driver..." button.
7. When the "Upgrade Device Driver Wizard" window appears, click Next to continue.
8. Select "Search for a suitable driver for my device(recommended)" option and click Next. Choose "Specify a location" check box and then click Next.  
or you can also select "Display a list of the known drivers for this device so that I can choose a specific driver" option and click Next. Click "Have Disk..." button.
9. Type or browse the path {CD-ROM Drive}:\\MB\8139&8100LAN\windows\Win98 to the driver.
10. Follow the instruction to complete the installation.



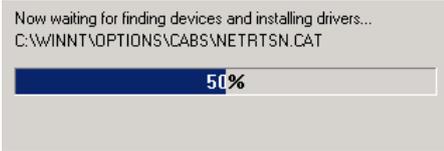
(4)

If you are running Windows 2K/XP, click the "for Windows 2K/XP" bar to install LAN driver for Windows 2K/XP.



(5)

Instantly, the InstallShield Wizard will show up for the setup.



**(6)**  
**The Setup is in progress.**



**(7)**  
**In a few seconds, setup completes. Click the "Finish" button to restart system and complete setup.**

# Appendices

## Motherboard Compatibility Test

### (1) CPU Compatibility Test

System Configuration	Workstation - 1	Workstation - 2	Workstation - 3	Workstation - 4					
<b>Memory</b>	Kingmax 256MB	HYNIX 256MB							
	China 333*1	China 266*4							
	KDL684T4AA-60(D)	HY5DU28822AT-H(D)							
<b>Display Card</b>	MATROX WinFast								
	G450	GF4 Ti4200-8X							
<b>Hard Drive</b>	Seagate 40G	Seagate 30G							
	ST320414A-100	ST330620A-100							
<b>CD-ROM</b>	GENUINE	ACER							
	GC-852 52x	650P-073 50x							
<b>Power Supply</b>	Snake	Enlight							
	TC-300P(220V)	HPC-300-101(110V)							
Nucleus	Model	CLK	Voltage	Bus Speed	CPU S.P.E.C	Stepping	RESET 10 Time	PW On/Off 10 Time	CC WS 2002 Test
Northwood	3.0G	15	1.5V	200	GWN3ES		PASS	PASS	43.7
Northwood	2.6G	13	1.5V	200	GWK0ES		PASS	PASS	40.6
Northwood	3.06G	15	1.5V	133			PASS	PASS	38.9
Northwood	2.8G	21	1.5V	133	SL6H6		PASS	PASS	42.2
Northwood	2.53G	19	1.5V	133	SL665		PASS	PASS	39.3
Northwood	2.4BG	18	1.5V	133			PASS	PASS	37.9
Northwood	2.66G	20	1.5V	133			PASS	PASS	34
Northwood	2.4G	24	1.5V	100			PASS	PASS	37
Northwood	2.2G	22	1.5V	100	SL5YS		PASS	PASS	29.5
Northwood	2.0G	20	1.5V	100	SL5UH		PASS	PASS	51.7
Northwood	1.8AG	18	1.475V	100	SL660		PASS	PASS	29.7
Northwood	1.6AG	16	1.475V	100	SL668		PASS	PASS	28.4
Celeron	2.4G	24	1.475V	100			PASS	PASS	29.2
Celeron	2.2G	22	1.475V	100			PASS	PASS	28.4
Celeron	2.1G	21	1.5V	100			PASS	PASS	27
Celeron	2.0G	20	1.5V	100			PASS	PASS	37.6

## Appendices

### (2) Memory Compatibility Test

System Configuration	Workstation - 1	Workstation - 2	Workstation - 3	Workstation - 4
<b>Processor</b>	Northwood	Northwood	Northwood	Northwood
	2.4BG	3.06(HT)	2.8G	2.8G
<b>Display Card</b>	3DFX	ASUS	ELSA	PROLINK
	Voodoo4500	V7100PRO	GeForce 2 MX400 511	GeForce 4 Ti4200-8X
<b>Hard Drive</b>	IBM 60	Quantum 40G	Seagate 30G	MAXTOR 60G
	IC35L060AVER07-0-100	AS40000AT-100	ST330620A-100	ST060H6-100
<b>CD-ROM</b>	ASUS	CREATIVE	ACER	GENUINE
	CD-S500/A 50x	CD5230E 52x	650P-073 50x	GC-852 52x
<b>Power Supply</b>	CWT	Enlight	Enlight	Enhance
	CWT-300ATX12(110V)	HPC-340-101(110V)	HPC-300-101(110V)	ENP-0730(110V)

Module Vendor	IC_Vender	IC_Serial Numbers	CAPACITY	SIDE	DRAM CLK	Location	Memtest 1.04	WS 2001 Business
Kingmax	KINGMAX	KDL684T4AA-50	256M	D	400	DIMM 1,2,3,4	PASS	71.6
Adata	WINBOND	W942508BH-5	512M	D	400	DIMM 1,2,3,4	PASS	69.2
Adata	SAMSUNG	K4H560838D-TCC4	512M	D	400	DIMM 1,2,3,4	PASS	2.5
Transcend	SAMSUNG	K4H560838C-TCB3	512M	D	333	DIMM 1,2,3,4	PASS	57.6
TwinMos	WINBOND	W942508AH-6	512M	D	333	DIMM 1,2,3,4	PASS	46.5
Kingmax	KINGMAX	KDL684T4A2A-05	256M	D	333	DIMM 1,2,3,4	PASS	47
China	Hynix	HY5DU56822AT-H	512M	D	266	DIMM 1,2,3,4	PASS	61.5
Retail	NANYA	NT5DS16M8AT-7K	512M	D	266	DIMM 1,2,3,4	PASS	67.9
Weblink	ELMIK	N2DS1280AT-75B	256M	D	266	DIMM 1,2,3,4	PASS	57.8
Apacer	INFINEON	HYB25D256800AT-7	256M	D	266	DIMM 1,2,3,4	PASS	47.6
Kingmax	KINGMAX	KDL684T4AA-50	256M	D	400	DIMM 1,3	PASS	70.1
Adata	WINBOND	W942508BH-5	512M	D	400	DIMM 1,3	PASS	71
Adata	SAMSUNG	K4H560838D-TCC4	512M	D	400	DIMM 1,3	PASS	70.3
Transcend	SAMSUNG	K4H560838C-TCB3	512M	D	333	DIMM 1,3	PASS	67.8
TwinMos	WINBOND	W942508AH-6	512M	D	333	DIMM 1,3	PASS	47.8
Kingmax	KINGMAX	KDL684T4A2A-05	256M	D	333	DIMM 1,3	PASS	47.5
China	Hynix	HY5DU56822AT-H	512M	D	266	DIMM 1,3	PASS	63.2
Retail	NANYA	NT5DS16M8AT-7K	512M	D	266	DIMM 1,3	PASS	59.3
Weblink	ELMIK	N2DS1280AT-75B	256M	D	266	DIMM 1,3	PASS	57.8
Apacer	INFINEON	HYB25D256800AT-7	256M	D	266	DIMM 1,3	PASS	47.7
Kingmax	KINGMAX	KDL684T4AA-50	256M	D	400	DIMM 2,4	PASS	59.3
Adata	WINBOND	W942508BH-5	512M	D	400	DIMM 2,4	PASS	68.3
Adata	SAMSUNG	K4H560838D-TCC4	512M	D	400	DIMM 2,4	PASS	62.7
Transcend	SAMSUNG	K4H560838C-TCB3	512M	D	333	DIMM 2,4	PASS	67.6
TwinMos	WINBOND	W942508AH-6	512M	D	333	DIMM 2,4	PASS	55.6
Kingmax	KINGMAX	KDL684T4A2A-05	256M	D	333	DIMM 2,4	PASS	46.7
China	Hynix	HY5DU56822AT-H	512M	D	266	DIMM 2,4	PASS	66
Retail	NANYA	NT5DS16M8AT-7K	512M	D	266	DIMM 2,4	PASS	61.9
Weblink	ELMIK	N2DS1280AT-75B	256M	D	266	DIMM 2,4	PASS	66.7
Apacer	INFINEON	HYB25D256800AT-7	256M	D	266	DIMM 2,4	PASS	54.7

## Appendices

Module Vendor	IC_Vendor	IC_SerialNumbers	CAPACITY	SIDE	DRAM CLK	Location	Memtest 1.04	WS 2001 Business
Kingmax	KINGMAX	KDL684T4AA-50	256M	D	400	DIMM 1,2	PASS	60.8
Adata	WINBOND	W942508BH-5	512M	D	400	DIMM 1,2	PASS	60.8
Adata	SAMSUNG	K4H560838D-TCC4	512M	D	400	DIMM 1,2	PASS	68.1
Transcend	SAMSUNG	K4H560838C-TCB3	512M	D	333	DIMM 1,2	PASS	66.4
TwinMos	WINBOND	W942508AH-6	512M	D	333	DIMM 1,2	PASS	54.8
Kingmax	KINGMAX	KDL684T4A2A-05	256M	D	333	DIMM 1,2	PASS	55.4
China	Hynix	HY5DU56822AT-H	512M	D	266	DIMM 1,2	PASS	60
Retail	NANYA	NT5DS16M8AT-7K	512M	D	266	DIMM 1,2	PASS	60.3
Weblink	ELNIR	N2DS12880AT-75B	256M	D	266	DIMM 1,2	PASS	54.7
Apacer	INFINEON	HYB25D256800AT-7	256M	D	266	DIMM 1,2	PASS	54.1
Kingmax	KINGMAX	KDL684T4AA-50	256M	D	400	DIMM 3,4	PASS	69.1
Adata	WINBOND	W942508BH-5	512M	D	400	DIMM 3,4	PASS	68.4
Adata	SAMSUNG	K4H560838D-TCC4	512M	D	400	DIMM 3,4	PASS	59.7
Transcend	SAMSUNG	K4H560838C-TCB3	512M	D	333	DIMM 3,4	PASS	66.2
TwinMos	WINBOND	W942508AH-6	512M	D	333	DIMM 3,4	PASS	46.8
Kingmax	KINGMAX	KDL684T4A2A-05	256M	D	333	DIMM 3,4	PASS	65.3
China	Hynix	HY5DU56822AT-H	512M	D	266	DIMM 3,4	PASS	58.6
Retail	NANYA	NT5DS16M8AT-7K	512M	D	266	DIMM 3,4	PASS	50.3
Weblink	ELNIR	N2DS12880AT-75B	256M	D	266	DIMM 3,4	PASS	62.8
Apacer	INFINEON	HYB25D256800AT-7	256M	D	266	DIMM 3,4	PASS	54.6
Kingmax	KINGMAX	KDL684T4AA-50	256M	D	400	DIMM 1	PASS	65
Adata	WINBOND	W942508BH-5	512M	D	400	DIMM 1	PASS	54
Adata	SAMSUNG	K4H560838D-TCC4	512M	D	400	DIMM 1	PASS	67.5
Transcend	SAMSUNG	K4H560838C-TCB3	512M	D	333	DIMM 1	PASS	64.1
TwinMos	WINBOND	W942508AH-6	512M	D	333	DIMM 1	PASS	47.6
Kingmax	KINGMAX	KDL684T4A2A-05	256M	D	333	DIMM 1	PASS	49.2
China	Hynix	HY5DU56822AT-H	512M	D	266	DIMM 1	PASS	60
Retail	NANYA	NT5DS16M8AT-7K	512M	D	266	DIMM 1	PASS	60.3
Weblink	ELNIR	N2DS12880AT-75B	256M	D	266	DIMM 1	PASS	61.9
Apacer	INFINEON	HYB25D256800AT-7	256M	D	266	DIMM 1	PASS	40.5
Kingmax	KINGMAX	KDL684T4AA-50	256M	D	400	DIMM 2	PASS	65.5
Adata	WINBOND	W942508BH-5	512M	D	400	DIMM 2	PASS	57.2
Adata	SAMSUNG	K4H560838D-TCC4	512M	D	400	DIMM 2	PASS	57.9
Transcend	SAMSUNG	K4H560838C-TCB3	512M	D	333	DIMM 2	PASS	64.2
TwinMos	WINBOND	W942508AH-6	512M	D	333	DIMM 2	PASS	48
Kingmax	KINGMAX	KDL684T4A2A-05	256M	D	333	DIMM 2	PASS	39.3
China	Hynix	HY5DU56822AT-H	512M	D	266	DIMM 2	PASS	59.5
Retail	NANYA	NT5DS16M8AT-7K	512M	D	266	DIMM 2	PASS	60.5
Weblink	ELNIR	N2DS12880AT-75B	256M	D	266	DIMM 2	PASS	56.8
Apacer	INFINEON	HYB25D256800AT-7	256M	D	266	DIMM 2	PASS	49.7
Kingmax	KINGMAX	KDL684T4AA-50	256M	D	400	DIMM 3	PASS	64
Adata	WINBOND	W942508BH-5	512M	D	400	DIMM 3	PASS	59.2
Adata	SAMSUNG	K4H560838D-TCC4	512M	D	400	DIMM 3	PASS	58.3
Transcend	SAMSUNG	K4H560838C-TCB3	512M	D	333	DIMM 3	PASS	56.7
TwinMos	WINBOND	W942508AH-6	512M	D	333	DIMM 3	PASS	54.8
Kingmax	KINGMAX	KDL684T4A2A-05	256M	D	333	DIMM 3	PASS	49.7
China	Hynix	HY5DU56822AT-H	512M	D	266	DIMM 3	PASS	58.7
Retail	NANYA	NT5DS16M8AT-7K	512M	D	266	DIMM 3	PASS	59.5
Weblink	ELNIR	N2DS12880AT-75B	256M	D	266	DIMM 3	PASS	51.9
Apacer	INFINEON	HYB25D256800AT-7	256M	D	266	DIMM 3	PASS	49.6

Module Vendor	IC_Vendor	IC_SerialNumbers	CAPACITY	SIDE	DRAM CLK	Location	Memtest 1.04	WS 2001 Business
Kingmax	KINGMAX	KDL684T4AA-50	256M	D	400	DIMM 4	PASS	55.5
Adata	WINBOND	W942508BH-5	512M	D	400	DIMM 4	PASS	58.5
Adata	SAMSUNG	K4H560838D-TCC4	512M	D	400	DIMM 4	PASS	55.4
Transcend	SAMSUNG	K4H560838C-TCB3	512M	D	333	DIMM 4	PASS	56
TwinMos	WINBOND	W942508AH-6	512M	D	333	DIMM 4	PASS	54.5
Kingmax	KINGMAX	KDL684T4A2A-05	256M	D	333	DIMM 4	PASS	39
China	Hynix	HY5DU56822AT-H	512M	D	266	DIMM 4	PASS	58.7
Retail	NANYA	NT5DS16M8AT-7K	512M	D	266	DIMM 4	PASS	59.6
Weblink	ELNIR	N2DS12880AT-75B	256M	D	266	DIMM 4	PASS	53.8
Apacer	INFINEON	HYB25D256800AT-7	256M	D	266	DIMM 4	PASS	40.2

## Appendices

### (3) AGP Display Card Compatibility Test

System Configuration	WIN98SE	WIN 2000	WIN XP	Workstation - 4
<b>Processor</b>	Northwood	Northwood	Northwood	
	2.60G	2.48G	1.6AG	
<b>Memory</b>	Kingmax 256MB	Winbond 512MB	Infineon 512MB	
	Kingmax 256MB*2	TwinMos 333*1	APACER 266*1	
	KDL684T4A-60(D)	W942508AH-6(D)	HYB25D756800AT-7(D)	
<b>Hard Drive</b>	MXTOR 80G	Seagate 30G	IBM 60G	
	6L080J4-133	ST330320A-100	IC35L0604VER07-0-100	
	CREATIVE	ACER	ASUS	
<b>CD-ROM</b>	CD5230E 50x	650P-073 50x	CD-S500IA 50x	
	Enlight	Enlight	CWT	
<b>Power Supply</b>	HPC-340-101(110V)	HPC-300-101(110V)	CWT-300ATX12(110V)	

#### Win98 SE 1024 x 768 x 32 bit

AGP Model	Vendor	AGP Mode	Dirver Version	SiMRRP 2001SE Benchmark Mode	Quake III Demo 001		
					frames	seconds	fps
V7100PRO	ASUS	4X	4.13.01.2183	3030	1346	7.4	181.5
RADEON 8500LE	ATI	4X	4.13.01.9031	9366	1346	5.1	261.8
GeForce 2 TI 64M	ONDATA	4X	4.13.01.2183	4548	1346	5.8	234.1
GeForce 4 Mx440	ASUS	4X	4.13.01.4109	6530	1346	5.5	246.2
GeForce 2 Mx200	COLORFUL	4X	4.13.01.2183	1226	1346	17	79.3

#### Win98 SE 800 x 600 x 16 bit

AGP Model	Vendor	AGP Mode	Dirver Version	SiMRRP 2001SE Benchmark Mode	Quake III Demo 001		
					frames	seconds	fps
GeForce 4 Ti4200-8X	WinFast	8X	4.13.01.4109	13620	1346	5.4	247.2
GeForce 2 Mx400	Triplex	4X	4.13.01.2832	5435	1346	6.6	205.2
GF3 GLADIAC 921 DVI	ELSA	4X	4.13.01.2832	10246	1346	5.3	255.7
Ti500	WinFast	4X	4.13.01.2183	10384	1346	5.4	251.4
GeForce 2 Mx400 511	ELSA	4X	4.13.01.2183	4709	1346	6.6	203.6

#### Win 2000 1024 x 768 x 32 bit

AGP Model	Vendor	AGP Mode	Dirver Version	SiMRRP 2001SE Benchmark Mode	Quake III Demo 001		
					frames	seconds	fps
GeForce 4 Mx420	Ennyah	4X	6.13.10.4109	1904	1346	2.9	104.6
RADEON 8500	ATI	4X	5.13.01.6166	3531	1346	10.7	126.3
MS-9822	MSI	4X	5.13.01.2183	7663	1346	5.5	243.5
GeForce 4 Mx440	PROLINK	4X	6.13.10.4109	6352	1346	5.5	244.2
XABRE-8X	TRIPLEX	8X	6.13.10.3090	7202	1346	6.3	214.2