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# WI-1P

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*Intel Pentium 4 Workstation Board  
Socket 478*

*User's Manual*

4200-0391-01  
Rev. 1.00

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# Table Of Contents

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<b>Chapter 1. Introduction .....</b>	<b>1-1</b>
1.1. Specifications .....	1-1
1.2. Layout.....	1-3
1.3. Jumpers & Connectors Description.....	1-4
<b>Chapter 2. Hardware Setup.....</b>	<b>2-1</b>
2.1. Install Pentium® 4 CPU and Heatsink Supporting-Base.....	2-1
2.2. System Memory .....	2-3
2.2.1. Memory Configuration Table .....	2-3
2.2.2. Installing and Removing Memory Modules.....	2-3
2.3. Connectors, Headers, and Switches .....	2-5
2.3.1. ATX Power Connectors.....	2-5
2.3.2. FAN Power Connectors.....	2-6
2.3.3. CMOS Memory Clearing Header.....	2-7
2.3.4. PS/2 & USB Device Wake-up Connection Header..	2-8
2.3.5. Front Panel Switches & Indicators Connection Headers .....	2-9
2.3.6. Front Panel Audio Connection Header.....	2-10
2.3.7. Internal Audio Sources Connectors.....	2-11
2.3.8. PCI Slots .....	2-12
2.3.9. Additional IEEE1394 Port Connection Header.....	2-13
2.3.10. Additional USB Port Connection Header.....	2-14
2.3.11. System Management Bus Connection Header .....	2-15
2.3.12. Infrared Device Connection Header .....	2-16
2.3.13. Chassis Intrusion Device Header.....	2-17
2.3.14. AGP Pro Display Card Slot.....	2-18
2.3.15. Additional COM2 Port Connection Header .....	2-19
2.3.16. Floppy and IDE Disk Drive Connectors.....	2-20
2.3.17. Serial ATA Connectors.....	2-21
2.3.18. Status Indicators.....	2-23
2.3.19. External I/O Panel Connectors .....	2-24

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<b>Chapter 3. BIOS Setup.....</b>	<b>3-1</b>
3.1. SoftMenu Setup.....	3-2
3.2. Standard CMOS Features.....	3-5
3.3. Advanced BIOS Features.....	3-9
3.4. Advanced Chipset Features.....	3-12
3.5. Integrated Peripherals.....	3-15
3.6. Power Management Setup.....	3-23
3.7. PnP/PCI Configurations.....	3-27
3.8. PC Health Status.....	3-30
3.9. Load Fail-Safe Defaults.....	3-32
3.10. Load Optimized Defaults.....	3-32
3.11. Set Password.....	3-32
3.12. Save & Exit Setup.....	3-32
3.13. Exit Without Saving.....	3-32
<b>Chapter 4. Driver Installation.....</b>	<b>4-1</b>
<b>Appendix A. How to Get Technical Support.....</b>	<b>A-1</b>

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## Chapter 1. Introduction

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### 1.1. Specifications

#### CPU

- Supports Intel Pentium 4 Northwood/ Prescott Socket 478 processors with 800/533MHz FSB
- Up to 3.06GHz and higher (Prescott supports 3.4GHz and higher)
- Supports Intel Hyper-Threading Technology

#### Chipset

- Intel 875P/ ICH-Hance Rapid
- Supports Dual Channel DDR 400/333 with ECC function and Turbo mode
- Supports Advanced Configuration and Power Interface (ACPI)

#### Memory

- Four 184-pin DIMM sockets
- Supports 144-bit wide Dual Channel DDR 400/333 memory
- Up to 4GB, un-buffered with ECC/ Non-ECC memory capacity

#### Graphics

- Accelerated Graphics Port slot supports AGP 8X/4X (0.8V/1.5V)

#### Serial ATA

- 2 channel Serial ATA 150MB/s data transfer rate via Intel Hance Rapid
- 4 channel Serial ATA 150MB/s data transfer rate via Silicon Image 3114 (Option)

#### Audio

- 6-Channel AC97 CODEC on board

#### System BIOS

- Supports ABIT SoftMenu
- Supports Plug-and-Play (PNP)
- Supports Advanced Configuration Power Interface (ACPI)
- Write-Protect Anti-Virus function by AWARD BIOS
- 4MB Flash ROM

**LAN**

- Intel 82547GI single port Gigabit Ethernet Controller
- Front panel LAN Active/Link LED

**Extension Slot**

- 1x AGP
- 1x PCI 32bit/33MHz (5V)
- 3x PCI-X 64bit/66MHz (3.3V)

**Internal I/O Connectors**

- 1x Floppy Port supports up to 2.88MB
- 2x Ultra ATA 100/66/33 connectors
- 1x COM port header (COM2)
- 6x Serial ATA 150 connectors
- 1x USB 2.0 header (Each header supports two USB 2.0 devices)
- 1x SM Bus header (For SM Bus and I<sup>2</sup>C)
- 1x CD-IN, 1x AUX-IN connector
- 1x IEEE1394 header
- 1x IrDA header

**External I/O Connectors**

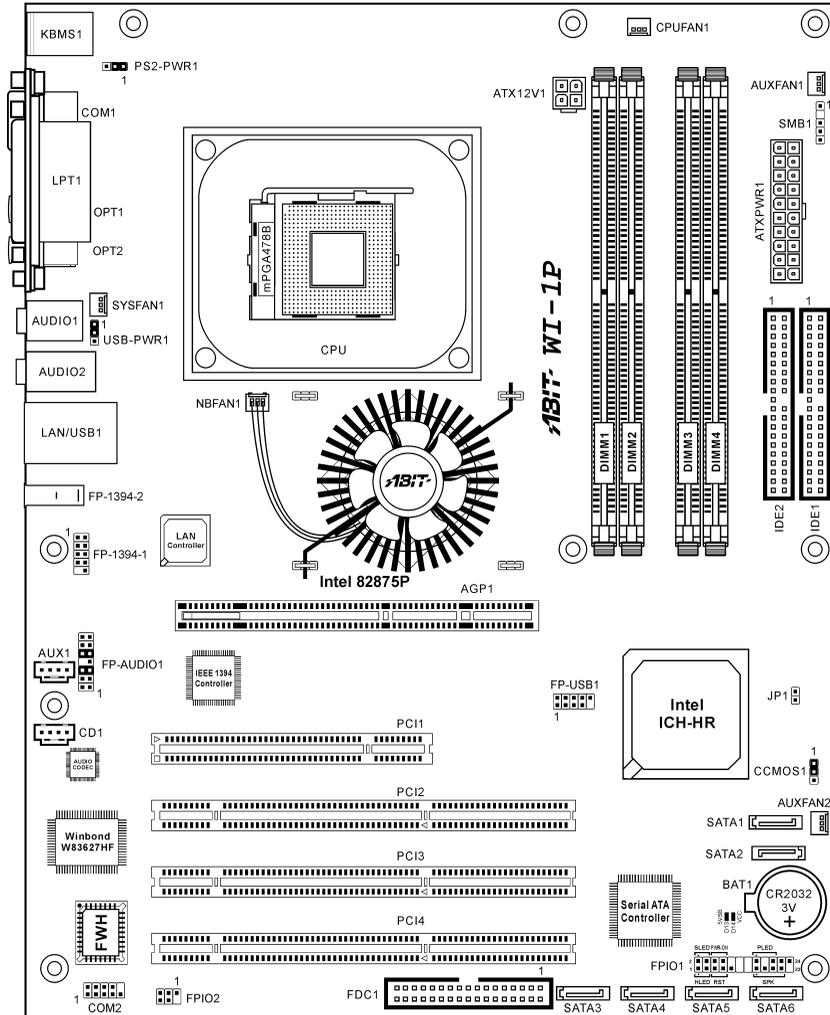
- 1x PS/2 keyboard, 1x PS/2 mouse port
- 1x printer port
- 1x COM port
- 1x S/PDIF in
- 1x S/PDIF out
- 1x audio connector (Lin-out, Line-in, Mic)
- 1x audio connector (Surround-out, Center/Subwoofer)
- 2x USB 2.0, 1x RJ-45 w/Transformer LAN Connector
- 1x IEEE 1394 connector

**Miscellaneous**

- ATX form factor (305mm x 243mm)
- Hardware monitoring – Including Fan speeds, Voltages, System environment temperature
- Chassis intrusion detector header

\* **Specifications and information contained herein are subject to change without notice.**

## 1.2. Layout



### 1.3. Jumpers & Connectors Description

<b>Jumpers</b>	<b>Description</b>	<b>Default Setting</b>
CCMOS1	CMOS Memory Clearing Header	Pins 1-2 Closed (Normal)
JP1	Chassis Intrusion Device Header	Opened

<b>Connectors</b>	<b>Description</b>
AGP1	AGP Pro Display Card Slot
ATXPWR1/ATX12V1	ATX Power Connectors
CPUFAN1	CPU Fan Power Connector
NBFAN1	Chipset Fan Power Connector
SYSFAN1	System Fan Power Connector
AUXFAN1/AUXFAN2	Auxiliary Fan Power Connectors
CD1/AUX1	Internal Audio Sources Connectors
COM2	Additional COM2 Port Connection Header
DIMM 1~4	DDR DIMM Slots
FDC1	Floppy Disk Drive Connector
FP-1394-1	Additional IEEE1394 Port Connection Header
FP-AUDIO1	Front Panel Audio Connection Header
FPIO1	Front Panel Switches & Indicators Connection Headers
FPIO2	Infrared Device Connection Header
FP-USB1	Additional USB Port Connection Header
IDE1/IDE2	Hard Disk Drive Connectors
PCI1	32bit/33MHz PCI Slot
PCI2/PCI3/PCI4	64bit/66MHz PCI-X Slots
PS2-PWR1	PS/2 & USB Device Wake-up Connection Header
USB-PWR1	
SATA1~SATA6	Serial ATA Connectors
SMB1	System Management Bus Connection Header

## Chapter 2. Hardware Setup

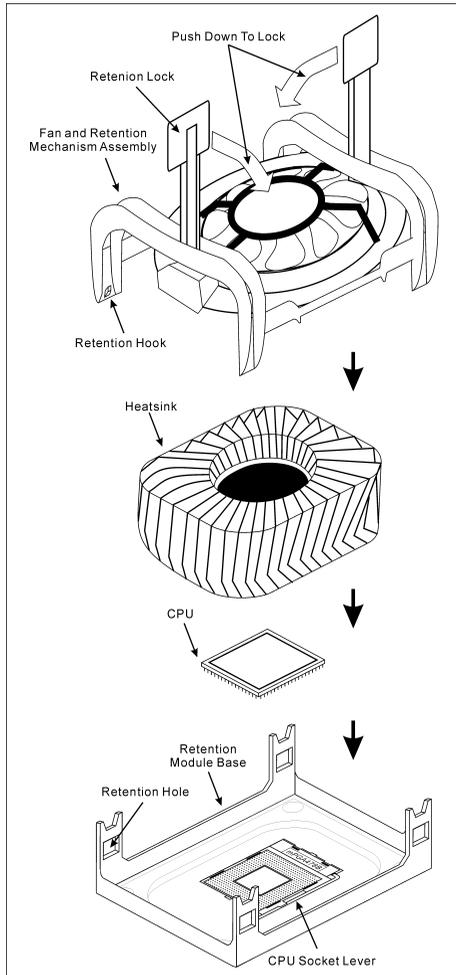
### 2.1. Install Pentium® 4 CPU and Heatsink Supporting-Base

This motherboard provides a ZIF (Zero Insertion Force) Socket 478 to install Intel® Pentium® 4 CPU. The CPU you bought should have a kit of heatsink and cooling fan along with. If that's not the case, buy one specially designed for Pentium® 4 Socket 478.

1. Locate the 478-pin ZIF socket on the motherboard. Fasten the Retention Module Base onto the motherboard.

**ATTENTION:** If you are using chassis specially designed for Pentium® 4, please pay attention to the location of metal studs or spacers if they are already installed on the chassis. Be careful not let the metal studs or spacers contact the printed circuit wire or parts on the PCB.

2. Pull the CPU socket lever sideways away from the socket and then upwards to 90 degree. Insert the CPU with the correct orientation. Do not use extra force to insert CPU; it only fits in one orientation. Close down the socket lever while holding down the CPU.
3. Put the heatsink faces down onto the CPU until it completely covers the CPU.

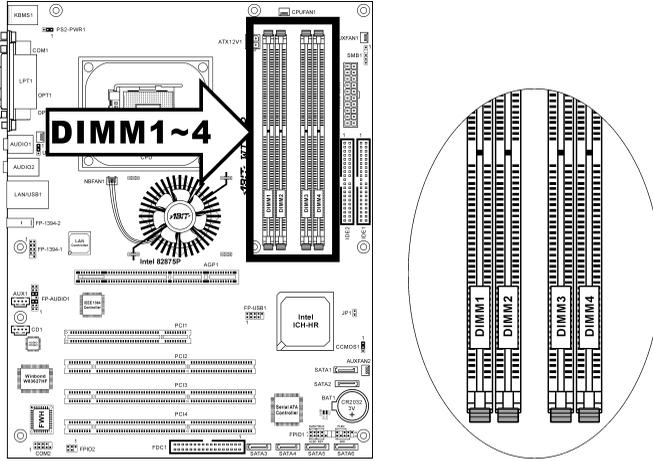


4. Put the Fan and Retention Mechanism Assembly onto the heatsink. Make sure all the four Retention Locks at each side of the Fan and Retention Mechanism Assembly snap into the Retention Holes.
5. Push down the Retention Lock at both sides of the Fan and Retention Mechanism Assembly to lock up together with the Retention Module Base.
6. The Fan and Retention Mechanism Assembly and Retention Module Base should now firmly lock up with each other with the heatsink inside.

**ATTENTION:** Do not forget to set the correct bus frequency and multiple for your processor.

## 2.2. System Memory

This workstation board provides four 184-pin DDR DIMM slots for Single/Dual Channel DDR 400/333/266 memory modules with memory expansion size up to 4GB.



### 2.2.1. Memory Configuration Table

Bank	Memory Module	Total Memory
Bank 0, 1 (DIMM1)	128, 256, 512MB, 1GB	128MB ~ 1GB
Bank 2, 3 (DIMM2)	128, 256, 512MB, 1GB	128MB ~ 1GB
Bank 4, 5 (DIMM3)	128, 256, 512MB, 1GB	128MB ~ 1GB
Bank 6, 7 (DIMM4)	128, 256, 512MB, 1GB	128MB ~ 1GB
<b>Total System Memory</b>		<b>128MB ~ 4GB</b>

### 2.2.2. Installing and Removing Memory Modules

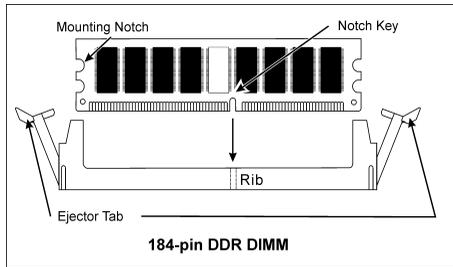
To reach the performance of Dual Channel DDR, the following rules must be obeyed:

- **When installing TWO DIMM modules:** Install DIMM modules of the same type and size for slots [DIMM1]+[DIMM3] or slots [DIMM2]+[DIMM4].
- **When installing FOUR DIMM modules:** Install DIMM modules of the same type and size for slots [DIMM1]+[DIMM3], and slots [DIMM2]+[DIMM4].

**NOTE:** No hardware or BIOS setup required after adding or removing memory modules.

Power off the computer and unplug the AC power cord before installing or removing memory modules.

1. Locate the DIMM slot on the board.
2. Hold two edges of the DIMM module carefully, keep away of touching its connectors.
3. Align the notch key on the module with the rib on the slot.
4. Firmly press the module into the slots until the ejector tabs at both sides of the slot automatically snaps into the mounting notch. Do not force the DIMM module in with extra force as the DIMM module only fit in one direction.



5. To remove the DIMM modules, push the two ejector tabs on the slot outward simultaneously, and then pull out the DIMM module.

**ATTENTION:** Static electricity can damage the electronic components of the computer or optional boards. Before starting these procedures, ensure that you are discharged of static electricity by touching a grounded metal object briefly.

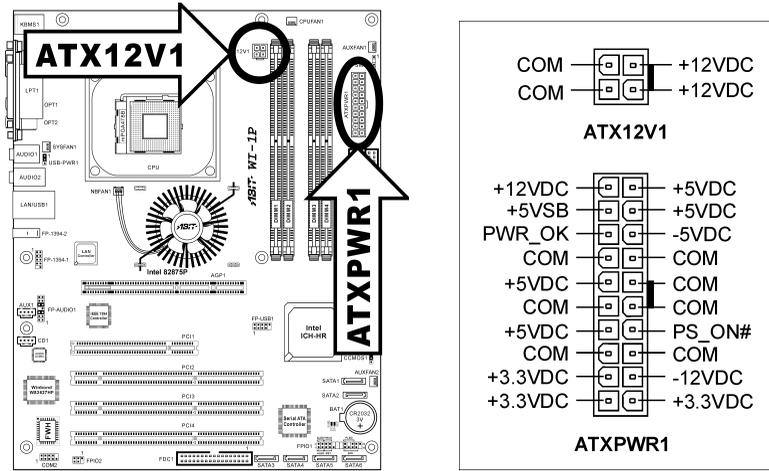
### 2.3. Connectors, Headers, and Switches

All the connectors, headers and switches mentioned here are depending on your system configuration. Some features you may (or may not) have to connect or to configure depending on the peripherals you have connected.

**WARNING:** Always power off the computer and unplug the AC power cord before adding or removing any peripheral or component. Failing to do so may cause severe damage to your workstation board and/or peripherals. Plug in the AC power cord only after you have carefully checked everything.

#### 2.3.1. ATX Power Connectors

These two connectors connect to ATX12V power supply.



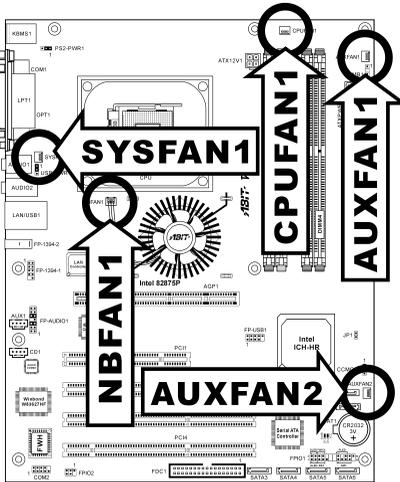
### 2.3.2. FAN Power Connectors

These 3-pin connectors each provide power to the cooling fans installed in your system.

The CPU must be kept cool by using a powerful fan with heatsink. The system is capable of monitoring the speed of the CPU fan.

- **CPUFAN1:** CPU Fan Power Connector
- **NBFAN1:** Chipset Fan Power Connector
- **SYSFAN1:** System Fan Power Connector
- **AUXFAN1, AUXFAN2:** Auxiliary Fan Power Connectors

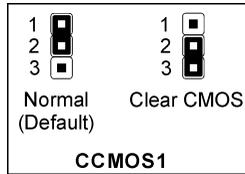
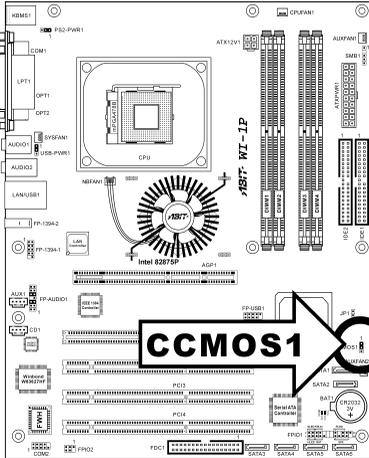
**WARNING:** These fan connectors are not jumpers. DO NOT place jumper caps on these connectors.



### 2.3.3. CMOS Memory Clearing Header

This header uses a jumper cap to clear the CMOS memory.

- **Pin 1-2 shorted (default):** Normal operation.
- **Pin 2-3 shorted:** Clear CMOS memory.

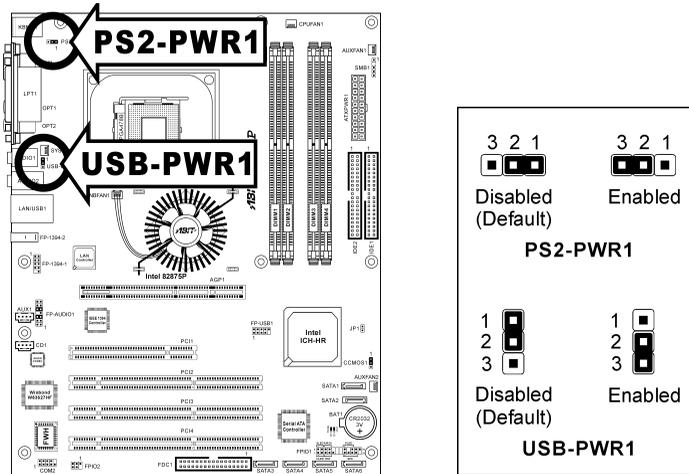


**WARNING:** Turn the power off first (including the +5V standby power) before clearing the CMOS memory. Failing to do so may cause your system to work abnormally or malfunction.

### 2.3.4. PS/2 & USB Device Wake-up Connection Header

These headers use a jumper cap to enable/disable the wake-up function.

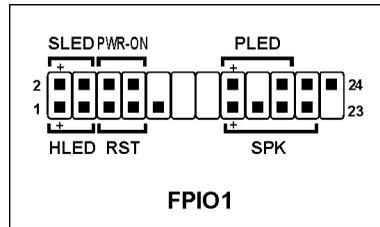
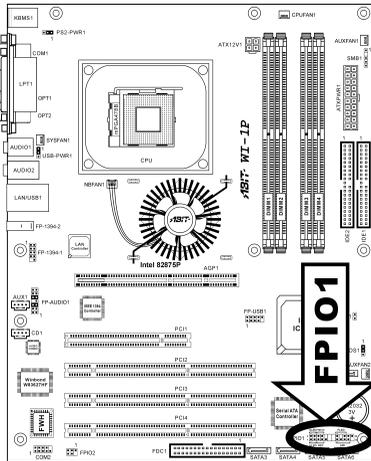
- **PS2-PWR1:**  
Pin 1-2 shorted (default): Disable wake-up function support at Keyboard/Mouse port.  
Pin 2-3 shorted: Enable wake-up function support at Keyboard/Mouse port
- **USB-PWR1:**  
Pin 1-2 shorted (default): Disable wake-up function support at USB1 port.  
Pin 2-3 shorted: Enable wake-up function support at USB1 port.



### 2.3.5. Front Panel Switches & Indicators Connection Headers

This header is used for connecting switches and LED indicators on the chassis front panel.

Watch the power LED pin position and orientation. The mark “+” align to the pin in the figure below stands for positive polarity for the LED connection. Please pay attention to connect these headers. A wrong orientation will only cause the LED not lighting, but a wrong connection of the switches could cause system malfunction.

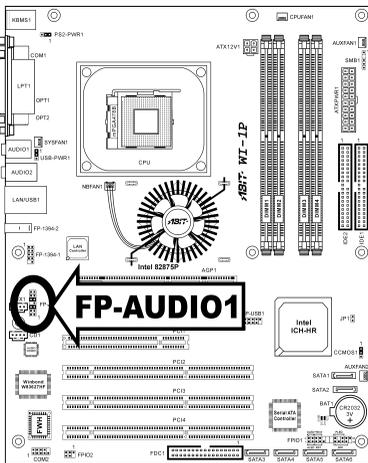


- **HLED (Pin 1, 3):**  
Connects to the HDD LED cable of chassis front panel.
- **RST (Pin 5, 7):**  
Connects to the Reset Switch cable of chassis front panel.
- **SPK (Pin 15, 17, 19, 21):**  
Connects to the System Speaker cable of chassis.
- **SLED (Pin 2, 4):**  
Connects to the Suspend LED cable (if there is one) of chassis front panel.
- **PWR-ON (Pin 6, 8):**  
Connects to the Power Switch cable of chassis front panel.
- **PLED (Pin 16, 18, 20):**  
Connects to the Power LED cable of chassis front panel.

### 2.3.6. Front Panel Audio Connection Header

This header provides the connection to audio connector at front panel.

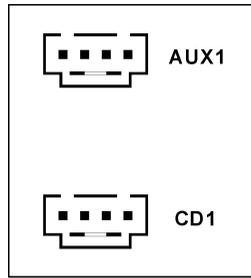
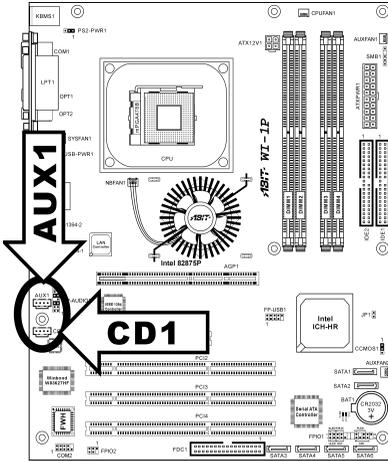
- To use the audio connector at front panel, remove all the jumpers on this header, and then connect to front panel by the extension cable provided with the chassis.
- To use the audio connector at rear panel, disconnect the extension cable, attach the jumpers back at pin 5-6, and pin 9-10 (default setting).



Pin	Pin Assignment	Pin	Pin Assignment
1	Audio Mic.	2	Ground
3	Audio Mic. Bias	4	VCC
5	Speaker Out Right Channel	6	Speaker Out Right Channel Return
7	X	8	NC
9	Speaker Out Left Channel	10	Speaker Out Left Channel Return
11	Ground	12	S/PDIF In
13	VCC	14	S/PDIF Out

### 2.3.7. Internal Audio Sources Connectors

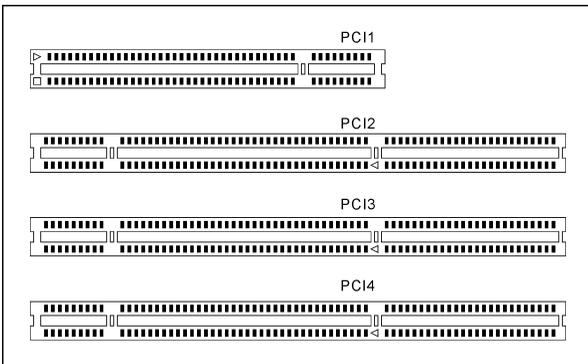
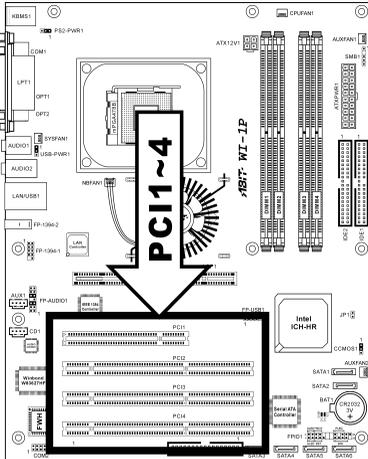
These connectors connect to the audio output of internal CD-ROM drive or add-on audio card.



### 2.3.8. PCI Slots

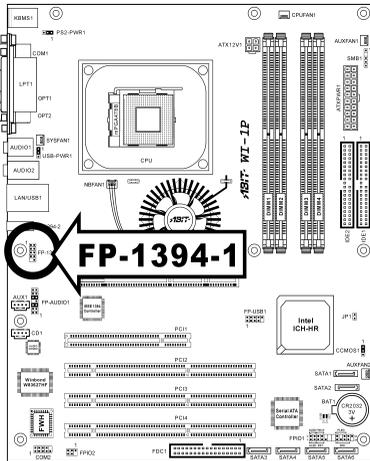
**PCI1:** 32bit/33MHz PCI Slot

**PCI2/PCI3/PCI4:** 64bit/66MHz PCI-X Slots



### 2.3.9. Additional IEEE1394 Port Connection Header

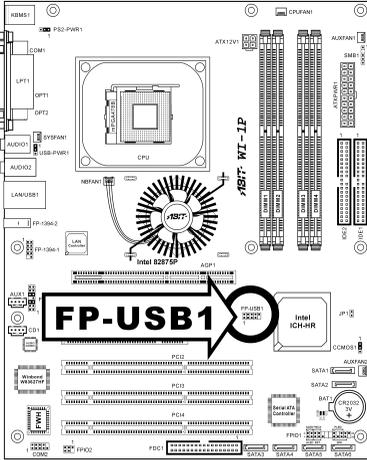
This header provides one external IEEE1394 port connection.



Pin	Pin Assignment	Pin	Pin Assignment
1	TPA1 +	2	TPA1 -
3	Ground	4	Ground
5	TPB1 +	6	TPB1 -
7	+12V	8	+12V
9	NC	10	Ground

### 2.3.10. Additional USB Port Connection Header

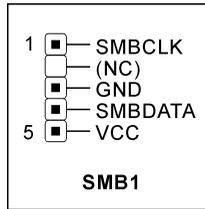
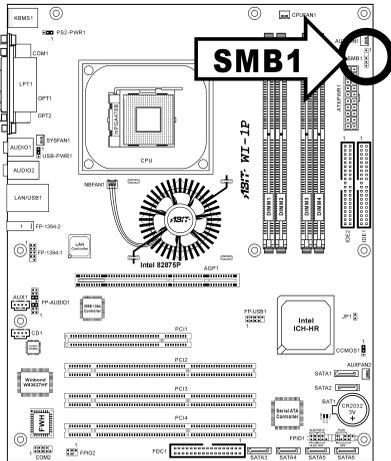
This header provides two additional USB port connections.



	Pin	Pin Assignment	Pin	Pin Assignment
<p><b>FP-USB1</b></p>	1	VCC	2	VCC
	3	Data2 -	4	Data3 -
	5	Data2 +	6	Data3 +
	7	Ground	8	Ground
	9	NC	10	NC

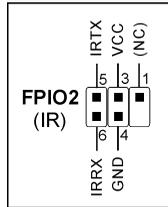
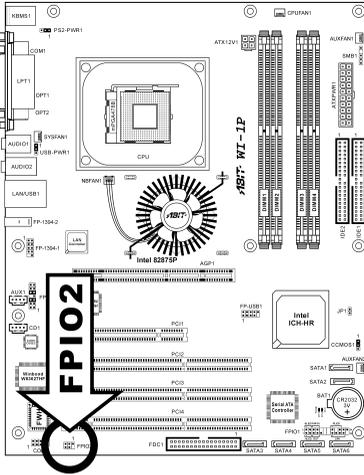
### 2.3.11. System Management Bus Connection Header

This header provides one external System Management Bus connection.



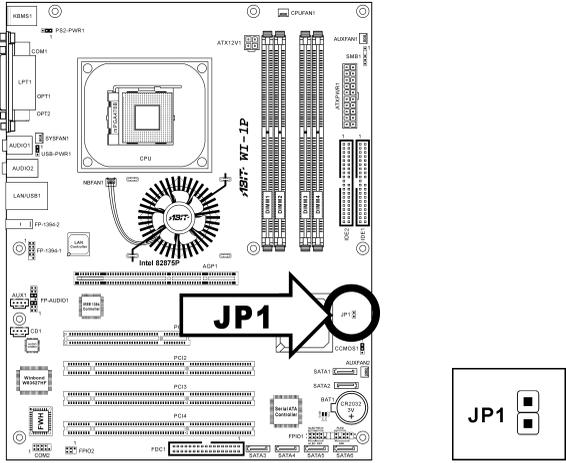
### 2.3.12. Infrared Device Connection Header

This header provides one external IR device port connection.



### 2.3.13. Chassis Intrusion Device Header

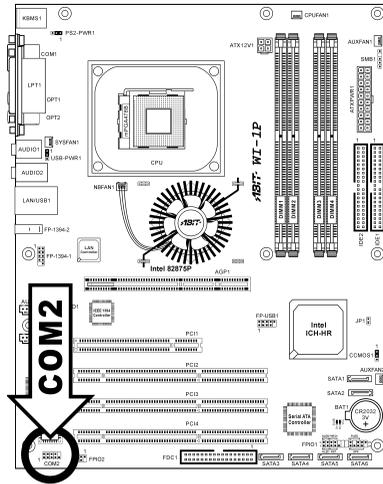
This header provides a cable connection to an intrusion device attached to chassis.





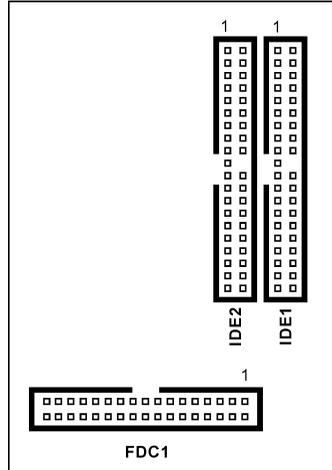
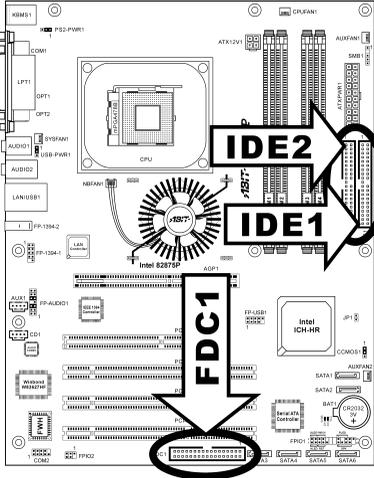
### 2.3.15. Additional COM2 Port Connection Header

This header provides an additional COM2 port connection.



Pin	Definition	Pin	Definition
1	DCDA	2	SINA
3	SOUTA	4	DTRA
5	Ground	6	DSRA
7	RTSA	8	CTSA
9	RIA		

### 2.3.16. Floppy and IDE Disk Drive Connectors

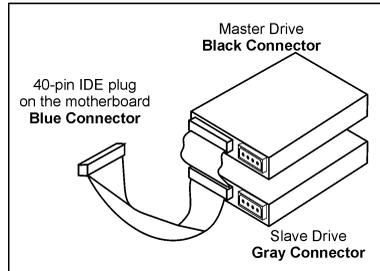


The FDC1 connector connects up to two floppy drives with a 34-wire, 2-connector floppy cable. Connect the single end at the longer length of ribbon cable to the FDC1 on the board, the two connectors on the other end to the floppy disk drives connector. Generally you need only one floppy disk drive in your system.

**NOTE:** The red line on the ribbon cable must be aligned with pin-1 on both the FDC1 port and the floppy connector.

Each of the IDE port connects up to two IDE drives at Ultra ATA/100 mode by one 40-pin, 80-conductor, and 3-conductor Ultra ATA/66 ribbon cables.

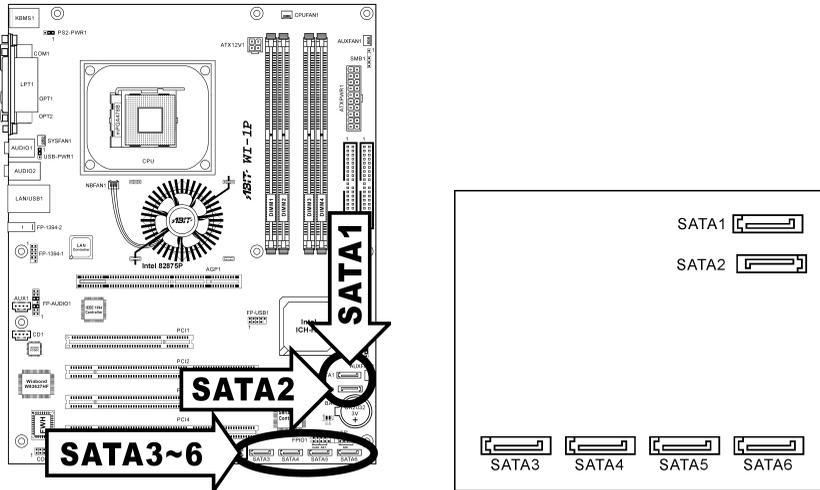
Connect the single end (blue connector) at the longer length of ribbon cable to the IDE port of this board, the other two ends (gray and black connector) at the shorter length of the ribbon cable to the connectors of your hard drives.



**NOTE:** Make sure to configure the “Master” and “Slave” relation before connecting two drives by one single ribbon cable. The red line on the ribbon cable must be aligned with pin-1 on both the IDE port and the hard-drive connector.

### 2.3.17. Serial ATA Connectors

These connectors each provide one Serial ATA channel connection.



SATA1 and SATA2 are controlled by South Bridge. To enable the SATA1 and SATA2 controller, you have to enable the item “OnChip Serial ATA” first in the BIOS menu of “OnChip IDE Device”.

The following table displays the quantity of devices at IDE1, IDE2, SATA1 and SATA2 channel under different “OnChip Serial ATA” configuration:

**WinXP / Windows .NET Server:**

<b>OnChip Serial ATA / OnChip Serial ATA Mode</b>	<b>IDE1</b>	<b>IDE2</b>	<b>SATA1</b>	<b>SATA2</b>
Enhanced Mode / IDE	2	2	1	1

**DOS / Win2K / Win98 / WinME:**

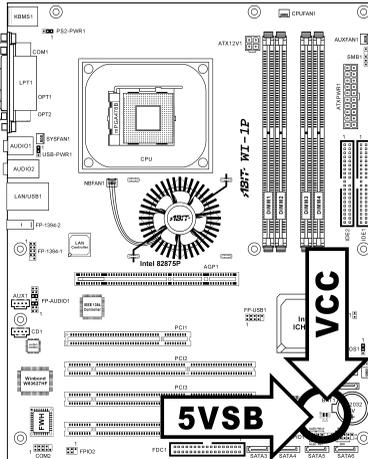
<b>OnChip Serial ATA / OnChip Serial ATA Mode</b>	<b>IDE1</b>	<b>IDE2</b>	<b>SATA1</b>	<b>SATA2</b>
Combined Mode / IDE	0	2	1	1
	2	0	1	1
SATA Only / IDE	0	0	1	1
Disabled	2	2	0	0

SATA3~6 are controlled by Silicon Image PCI Chip. To enable the SATA3~6 controller, you have to enable the item “Serial ATA Controller” first in the BIOS menu of “Onboard PCI Device”.

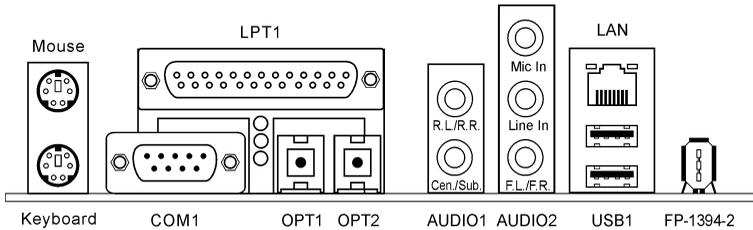
For more information on how to configure the function mode for SATA1 and SATA2, please refer to the item “Serial ATA 1 Mode” and “Serial ATA 2 Mode” in the BIOS menu of “OnChip IDE Device”.

### 2.3.18. Status Indicators

- **D13 (5VSB): 5VSB LED Indicator**  
This LED lights up when the power supply is connected with power source.
- **D14 (VCC): Power on Indicator**  
This LED lights up when the system power is on.



### 2.3.19. External I/O Panel Connectors



- **Mouse:** PS/2 mouse connector.
- **Keyboard:** PS/2 keyboard connector.
- **LPT1:** Parallel port connector.
- **COM1:** Serial port connector.
- **OPT1:** S/PDIF-In connector.
- **OPT2:** S/PDIF-Out connector.
- **AUDIO1:**
  - R.L./R.R. (Rear Left / Rear Right):** Connects to the rear left and rear right channel in the 5.1 channel audio system.
  - Cen./Sub. (Center / Subwoofer):** Connects to the center and subwoofer channel in the 5.1 channel audio system.
- **AUDIO2:**
  - Mic In:** Connects to the plug from external microphone.
  - Line In:** Connects to the line out from external audio sources.
  - F.L./F.R. (Front Left / Front Right):** Connects to the front left and front right channel in the 5.1-channel or regular 2-channel audio system.
- **LAN:** Local Area Network connector.
- **USB1:** Universal Serial Bus connector.
- **FP-1394-2:** IEEE1394 connector.

## Chapter 3. BIOS Setup

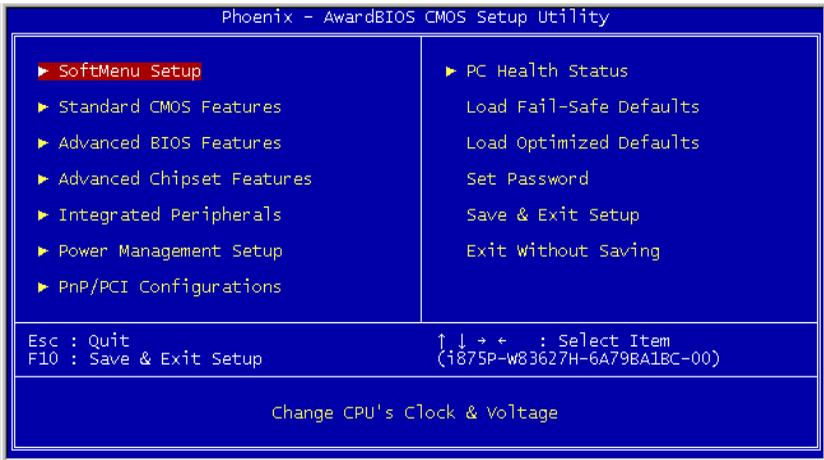
This motherboard provides a programmable EEPROM that you can update the BIOS utility. The BIOS (Basic Input/Output System) is a program that deals with the basic level of communication between processor and peripherals. Use the BIOS Setup program only when installing motherboard, reconfiguring system, or prompted to “Run Setup”. This chapter explains the Setup Utility of BIOS utility.

After powering up the system, the BIOS message appears on the screen, the memory count begins, and then the following message appears on the screen:

**PRESS DEL TO ENTER SETUP**

If this message disappears before you respond, restart the system by pressing <Ctrl> + <Alt> + <Del> keys, or by pressing the Reset button on computer chassis. Only when it failed by these two methods can you restart the system by powering it off and then back on.

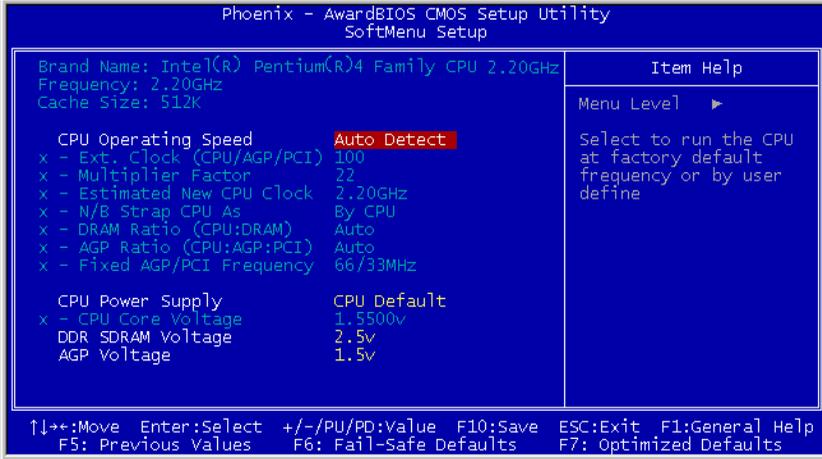
After pressing <Del> key, the main menu screen appears.



**NOTE:** In order to increase system stability and performance, our engineering staffs are constantly improving the BIOS menu. The BIOS setup screens and descriptions illustrated in this manual are for your reference only, may not completely match what you see on your screen.

### 3.1. SoftMenu Setup

The SoftMenu utility is ABIT's exclusive and ultimate solution in programming the CPU operating speed. All the parameters regarding CPU FSB speed, multiplier factor, the AGP & PCI clock, and even the CPU core voltage are all available at your fingertips.




---

#### Brand Name:

This item displays the CPU model name, for example: Intel Pentium (R) 4.

---

#### Frequency:

This item displays the processor speed.

---

#### Cache Size:

This item displays the L2 cache size of your CPU.

---

#### CPU Operating Speed:

This item displays the CPU operating speed according to the type and speed of your CPU. You can also select the [User Defined] option to enter the manual option.

**User Defined:**

**WARNING:** The wrong settings of the multiplier and external clock in certain circumstances may cause CPU damage. Setting the working frequency higher than the PCI chipset or processor specs, may cause abnormal memory module functioning, system hangs, hard disk drive data lose, abnormal functioning of the VGA card, or abnormal functioning with other add-on cards. Using non-specification settings for your CPU is not the intention of this explanation. These should be used for engineering testing, not for normal applications.

There will be no guaranty for the settings beyond specification, any damage of any component on this motherboard or peripherals result therein is not our responsibility.

**\* Ext. Clock (CPU/AGP/PCI):**

This item selects the external clock frequency.

**\* Multiplier Factor:**

This item selects the multiplier factors for your CPU if it is not locked.

**\* Estimated new CPU clock:**

This item displays the frequency sum up from the previous item [Ext. Clock] and [Multiplier Factor].

**\* N/B Strap CPU As:**

This item sets the external hardware reset strap assigned to MCH (Memory Controller Hub). The options are: [PSB400], [PSB533], [PSB800], and [By CPU]. The default setting is **By CPU**.

To set this option manually:

- Select [PSB400] for CPU of 100MHz FSB frequency.
- Select [PSB533] for CPU of 133MHz FSB frequency.
- Select [PSB800] for CPU of 200MHz FSB frequency.

**\* DRAM Ratio (CPU:DRAM):**

This item determines the frequency ratio between CPU and DRAM.

**\* AGP Ratio (CPU:AGP:PCI):**

This item determines the ratio among CPU, AGP, and PCI.

**\* Fixed AGP/PCI Frequency:**

This item determines the AGP/PCI bus frequency. This option allows you to keep your AGP/PCI clock at some fixed frequency to improve system stability.

**CPU Power Supply:**

This option allows you to switch between CPU default and user-defined voltages. Leave this setting to default unless the current CPU type and voltage setting cannot be detected or is not correct. The option “**User Defined**” enables you to select the Core Voltage manually.

\* **CPU Core Voltage:**

This item selects the CPU core voltage.

**ATTENTION:** A wrong voltage setting may cause the system unstable or even damage the CPU. Please leave it to default settings unless you are fully aware of its consequences.

---

**DDR SDRAM Voltage:**

This item selects the voltage for DRAM slot.

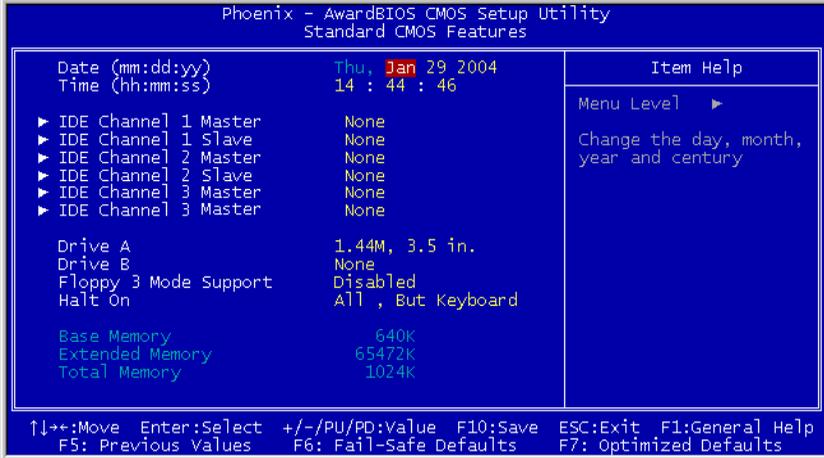
---

**AGP Voltage:**

This item selects the voltage for AGP slot.

## 3.2. Standard CMOS Features

This section contains the basic configuration parameters of the BIOS. These parameters include date, hour, VGA card, FDD and HDD settings.



### Date (mm:dd:yy):

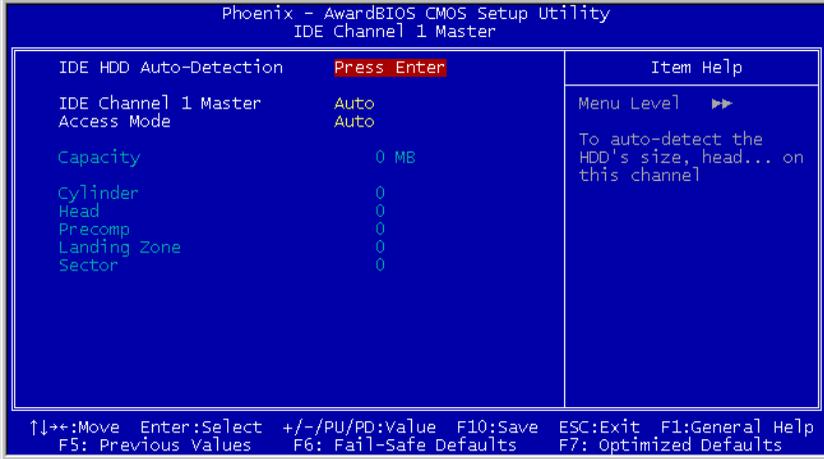
This item sets the date you specify (usually the current date) in the format of [Month], [Date], and [Year].

### Time (hh:mm:ss):

This item sets the time you specify (usually the current time) in the format of [Hour], [Minute], and [Second].

### ☞ IDE Channel 1 Master/Slave, IDE Channel 2 Master/Slave, IDE Channel 3 Master, IDE Channel 4 Master:

Click <Enter> key to enter its submenu:



**NOTE:** Item “IDE Channel 3 Master” and “IDE Channel 4 Master” appears only when the item “OnChip Serial ATA” in the “OnChip IDE Device” menu is set as [Enhanced Mode], and the item “OnChip Serial ATA Mode” in the “OnChip IDE Device” menu is set as [IDE].

#### IDE HDD Auto-Detection:

This item allows you to detect the parameters of IDE drives by pressing <Enter> key. The parameters will be shown on the screen automatically.

#### IDE Channel 1 Master/Slave, IDE Channel 2 Master/Slave, Extended IDE Drive:

When set to [Auto], the BIOS will automatically check what kind of IDE drive you are using. If you want to define your own drive by yourself, set it to [Manual] and make sure you fully understand the meaning of the parameters. Please refer to the instruction manual provided by the device’s manufacturer to get the setting right.

#### Access Mode:

This item selects the mode to access your IDE devices. Leave this item to its default [Auto] setting to detect the access mode of your HDD automatically.

---

**Capacity:**

This item displays the approximate capacity of the disk drive. Usually the size is slightly greater than the size of a formatted disk given by a disk-checking program.

---

**Cylinder:**

This item configures the numbers of cylinders.

---

**Head:**

This item configures the numbers of read/write heads.

---

**Precomp:**

This item displays the number of cylinders at which to change the write timing.

---

**Landing Zone:**

This item displays the number of cylinders specified as the landing zone for the read/write heads.

---

**Sector:**

This item configures the numbers of sectors per track.

---

 **Back to Standard CMOS Features Setup Menu:**

---

**Drive A & Drive B:**

This item sets the type of floppy drives (usually only Drive A) installed.

---

**Floppy 3 Mode Support:**

This item allows you to use “3 Mode Floppy Drive” in Japanese computer system by selecting drive A, B, or both. Leave this item to its default [Disabled] setting if you are not using this Japanese standard floppy drive.

---

**Halt On:**

This item determines whether the system stops if an error is detected during system boot-up.

**[All Errors]:** The system-boot will stop whenever the BIOS detect a non-fatal error.

**[No Errors]:** The system-boot will not stop for any error detected.

**[All, But Keyboard]:** The system-boot will stop for all errors except a keyboard error.

**[All, But Diskette]:** The system-boot will stop for all errors except a diskette error.

**[All, But Disk/Key]:** The system-boot will stop for all errors except a diskette or keyboard error.

---

**Base Memory:**

This item displays the amount of base memory installed in the system. The value of the base memory is typically 640K for system with 640K or more memory size installed on the motherboard.

---

**Extended Memory:**

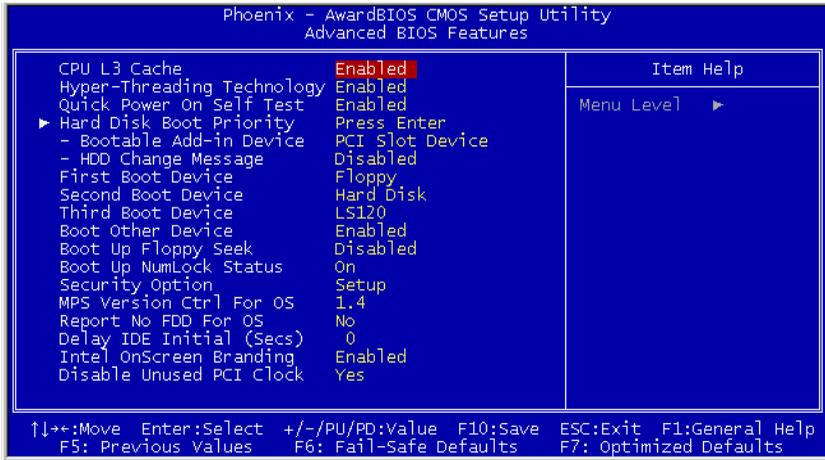
This item displays the amount of extended memory detected during system boot-up.

---

**Total Memory:**

This item displays the total memory available in the system.

### 3.3. Advanced BIOS Features



#### CPU L3 Cache:

This item is used to enable the L3 cache (default setting), and appears only for certain CPU (Intel Pentium 4 processor with HT Technology Extreme Edition) that possesses L3 cache.

#### Hyper-Threading Technology:

This item is used to enable the functionality of the processor with Hyper-Threading Technology and will appear only when using such processor.

The Hyper-Threading Technology helps your PC work more efficiently by maximizing processor resources and enabling a single processor to run two separate threads of software simultaneously, bringing forth greater performance and system responsiveness when running multiple applications at once.

#### Quick Power On Self Test:

When set to [Enabled], this item speeds up the Power On Self Test (POST) after powering on the system. The BIOS shorten or skip some check during the POST.

#### Hard Disk Boot Priority:

This item selects the hard disks booting priority. By pressing <Enter> key, you can enter its submenu where the hard disks detected can be selected for the booting sequence to boot up system.

This item functions only when there is the option of [Hard Disk] in any one of the First/Second/Third Boot Device items.

✱ **Bootable Add-in Device:**

This item allows you to select the add-in device among the [PCI Slot Device], [OnChip SATA RAID], and [Onboard SATA] channel to serve as the bootable device listed in the item “Hard Disk Boot Priority”.

✱ **HDD Change Message:**

When set to [Enabled], a pop-up message will be displayed on the screen during the POST process if the hard drives installed in your system had been changed.

---

**First Boot Device / Second Boot Device / Third Boot Device / Boot Other Device:**

Select the drive to boot first, second and third in the [First Boot Device], [Second Boot Device], and [Third Boot Device] items respectively. The BIOS will boot the operating system according to the sequence of the drive selected. Set [Boot Other Device] to [Enabled] if you wish to boot from another device other than these three items.

---

**Boot Up Floppy Seek:**

When set to [Enabled], the BIOS will check whether the floppy disk drive is installed or not.

---

**Boot Up NumLock Status:**

This item determines the default state of the numeric keypad at system booting up.

[On]: The numeric keypad functions as number keys.

[Off]: The numeric keypad functions as arrow keys.

---

**Security Option:**

This item determines when the system will prompt for password - every time the system boots or only when enters the BIOS setup.

[Setup]: The password is required only when accessing the BIOS Setup.

[System]: The password is required each time the computer boots up.

**NOTE:** Don't forget your password. If you forget the password, you will have to open the computer case and clear all information in the CMOS before you can start up the system. But by doing this, you will have to reset all previously set options.

---

---

**MPS Version Ctrl For OS:**

This item specifies which version of MPS (Multi-Processor Specification) this motherboard will use. Leave this item to its default setting.

---

**Report No FDD For OS:**

When set to [Yes], this item allows you to run some older operating system without floppy disk drive. Leave this item to its default setting.

---

**Delay IDE Initial (Secs):**

This item allows the BIOS to support some old or special IDE devices by prolonging this delay time. A larger value will give more delay time to the device for which to initialize and to prepare for activation.

---

**Intel OnScreen Branding:**

This item determines whether to display the “Intel Inside” logo or not at system boots up.

---

**Disable Unused PCI Clock:**

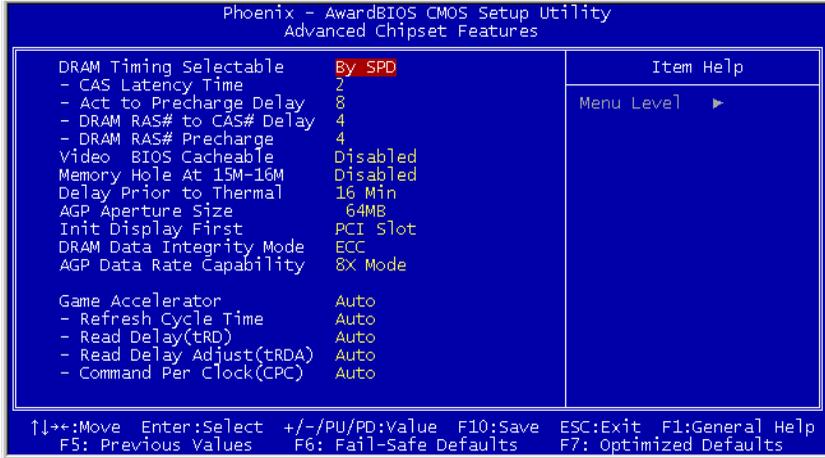
This option disables the clock of PCI slot that is not in use.

**[Yes]:** The system automatically detect the unused DIMM and PCI slots, and stop sending clock signal to these unused PCI slots.

**[No]:** The system always send clock signal to all PCI slots.

**NOTE:** Set this option to [No] setting if there are adapters that cannot be automatically detected by the system and will cause malfunction.

### 3.4. Advanced Chipset Features



#### DRAM Timing Selectable:

This item sets the optimal timings for the following four items, depending on the memory module you are using. The default setting “By SPD” configures these four items by reading the contents in the SPD (Serial Presence Detect) device. The EEPROM on the memory module stores critical parameter information about the module, such as memory type, size, speed, voltage interface, and module banks.

##### \* CAS Latency Time:

This item controls the latency between the DRAM read command and the time that the data becomes actually available.

##### \* Act to Precharge Delay:

This item controls the number of DRAM clocks used for the DRAM parameters.

##### \* DRAM RAS# to CAS# Delay

This item controls the latency between the DRAM active command and the read/write command.

##### \* DRAM RAS# Precharge:

This item controls the idle clocks after issuing a precharge command to the DRAM.

---

**Video BIOS Cacheable:**

As with caching the system BIOS, enabling the Video BIOS cache will allow access to video BIOS addressed at C0000H to C7FFFH to be cached, if the cache controller is also enabled. The larger the range of the Cache RAM, the faster the video performance will be.

---

**Memory Hole At 15M-16M:**

When set to [Enabled], the memory address space at 15M-16M will be reserved for ISA expansion cards that specifically requires this setting. This makes the memory from 15MB and up unavailable to the system. Leave this item to its default setting.

---

**Delay Prior to Thermal:**

This item selects the delay time before thermal activation.

---

**AGP Aperture Size:**

This option specifies the amount of system memory that can be used by the AGP device. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space.

---

**Init Display First:**

This item selects to initialize AGP or PCI Slot first when the system boots.

[AGP]: When the system boots, it will first initialize AGP.

[PCI Slot]: When the system boots, it will first initialize PCI.

---

**DRAM Data Integrity Mode:**

This item selects the type of DRAM in your system. ECC is “Error Checking and Correction”. Choose the ECC option only when your memory is ECC type.

---

**AGP Data Rate Capability:**

This item selects the data transfer rate of AGP device. A higher rate delivers faster and better graphics to your system. Make sure your graphics card supports the mode you select.

---

**Game Accelerator:**

This item selects the mode for Game Accelerator among the options of [Auto], [Turbo], [Street Racer], and [F1].

**NOTE:** The option [Street Racer] and [F1] mode will stress the DDR memory critically; not every kind of DDR memories could be stable with these two options. [Turbo] mode is okay for most of DDR memories.

\* **Refresh Cycle Time:**

This item determines the DRAM Refresh Cycle among [Auto], [Normal], [Enhanced], [Strengthened], and [Aggressive].

\* **Read Delay (tRD):**

This item determines the timing of DRAM Read Delay.

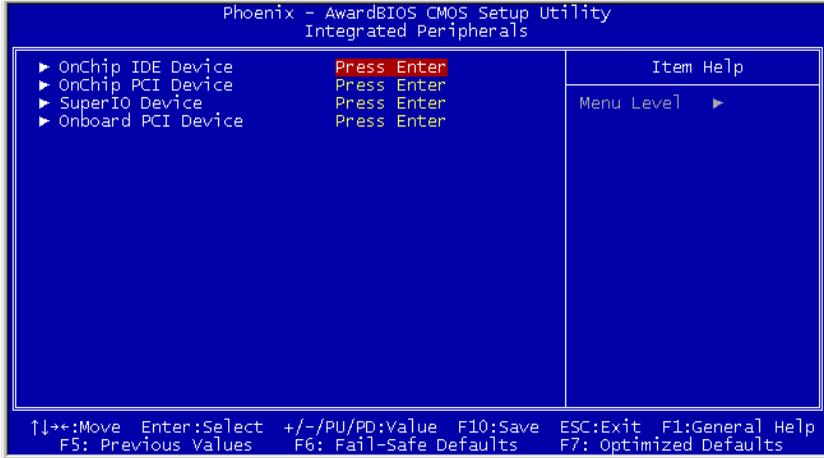
\* **Read delay Adjust(tRDA):**

This item determines to adjust the timing of DRAM Read Delay.

\* **Command Per Clock(CPC):**

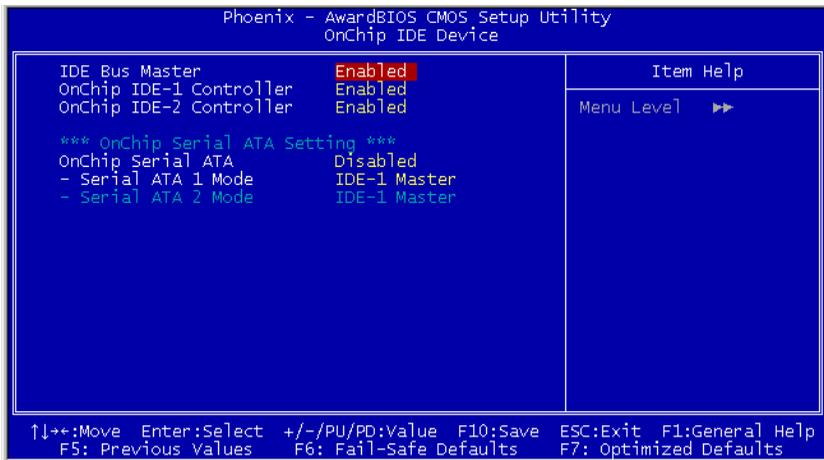
This item determines the address command timing according to the DRAM strobe clock.

### 3.5. Integrated Peripherals



#### ↩ OnChip IDE Device:

Click <Enter> key to enter its submenu:



**IDE Bus Master:**

This option enables or disables the IDE bus mastering capability under the DOS environment.

---

**OnChip IDE-1 Controller:**

This item allows you to enable or disable the primary and secondary IDE controller. Select [Disabled] if you want to add a different hard drive controller.

---

**OnChip IDE-2 Controller:**

The description is same as the *OnChip IDE-1 Controller*.

---

**OnChip Serial ATA:**

This item determines the function for on-chip Serial ATA.

**[Disabled]:** Disable the Serial ATA controller.

**[Auto]:** Allows the Serial ATA controller to be arranged by BIOS automatically.

**[Combined Mode]:** Parallel ATA and Serial ATA are combined together. Supports up to 4 IDE drives.

**[Enhanced Mode]:** Enable both Parallel ATA and Serial ATA. Supports up to 6 IDE drives.

**[SATA Only]:** The SATA is operating in legacy mode.

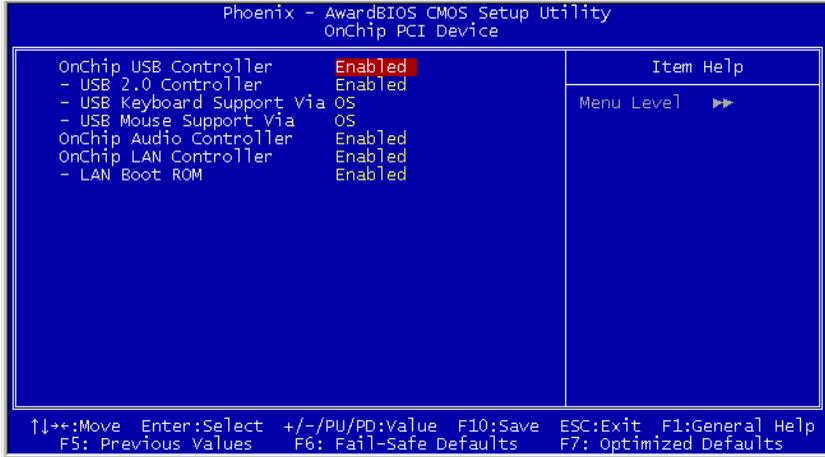
**\* Serial ATA 1 Mode / Serial ATA 2 Mode:**

This item determines the function mode for Serial ATA Port 1 (i.e. The SATA1 connector in this model) and Serial ATA Port 2 (i.e. The SATA2 connector in this model). Both SATA1 and SATA2 will be served each as one single IDE connector after selected as the following modes:

<b>Mode</b>	<b>Serial ATA Port 1 (SATA1)</b>	<b>Serial ATA Port 2 (SATA2)</b>	<b>Description</b>
Enhanced	IDE-3 Master	IDE-4 Master	<ul style="list-style-type: none"> <li>• SATA1 serves as IDE-3 Master</li> <li>• SATA2 serves as IDE-4 Master</li> <li>• OnChip IDE-1 and IDE-2 controller enabled</li> </ul>
	IDE-4 Master	IDE-3 Master	<ul style="list-style-type: none"> <li>• SATA1 serves as IDE-4 Master</li> <li>• SATA2 serves as IDE-3 Master</li> <li>• OnChip IDE-1 and IDE-2 controller enabled</li> </ul>
Combined	IDE-1 Master	IDE-1 Slave	<ul style="list-style-type: none"> <li>• SATA1 serves as IDE-1 Master</li> <li>• SATA2 serves as IDE-1 Slave</li> <li>• OnChip IDE-1 controller disabled</li> </ul>
	IDE-1 Slave	IDE-1 Master	<ul style="list-style-type: none"> <li>• SATA1 serves as IDE-1 Slave</li> <li>• SATA2 serves as IDE-1 Master</li> <li>• OnChip IDE-1 controller disabled</li> </ul>
	IDE-2 Master	IDE-2 Slave	<ul style="list-style-type: none"> <li>• SATA1 serves as IDE-2 Master</li> <li>• SATA2 serves as IDE-2 Slave</li> <li>• OnChip IDE-2 controller disabled</li> </ul>
	IDE-2 Slave	IDE-2 Master	<ul style="list-style-type: none"> <li>• SATA1 serves as IDE-2 Slave</li> <li>• SATA2 serves as IDE-2 Master</li> <li>• OnChip IDE-2 controller disabled</li> </ul>
SATA Only	IDE-1 Master	IDE-2 Master	<ul style="list-style-type: none"> <li>• SATA1 serves as IDE-1 Master</li> <li>• SATA2 serves as IDE-2 Master</li> <li>• OnChip IDE-1 and IDE-2 controller disabled</li> </ul>
	IDE-2 Master	IDE-1 Master	<ul style="list-style-type: none"> <li>• SATA1 serves as IDE-2 Master</li> <li>• SATA2 serves as IDE-1 Master</li> <li>• OnChip IDE-1 and IDE-2 controller disabled</li> </ul>

### ↶ OnChip PCI Device:

Click <Enter> key to enter its submenu:



### OnChip USB Controller:

This option enables or disables the USB controller.

#### \* USB 2.0 Controller:

This option enables or disables the USB 2.0 controller.

#### \* USB Keyboard Support Via:

This item allows you to select [**BIOS**] for using USB keyboard in DOS environment, or [**OS**] in OS environment.

#### \* USB Mouse Support Via:

This item allows you to select [**BIOS**] for using USB mouse in DOS environment, or [**OS**] in OS environment.

### OnChip Audio Controller:

This option enables or disables the audio controller.

### OnChip LAN Controller:

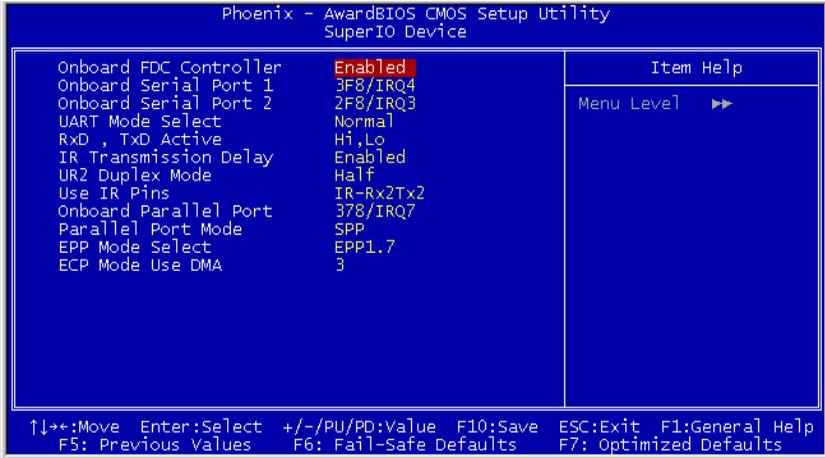
This option enables or disables the LAN controller.

\* **LAN Boot ROM:**

This item allows you to use the boot ROM (instead of a disk drive) to boot-up the system and access the local area network directly.

↵ **SuperIO Device:**

Click <Enter> key to enter its submenu:



**Onboard FDC Controller:**

This option enables or disables the onboard FDC controller.

**Onboard Serial Port 1:**

This item determines which I/O addresses the onboard Serial Port 1 controller will access.

**[Auto]:** The system automatically select an I/O address for the onboard Serial Port 1.

**[3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3]:** Allows you to manually select an I/O address for the onboard Serial Port 1.

**[Disabled]:** Disables the onboard Serial Port 1.

**Onboard Serial Port 2:**

This item determines which I/O addresses the onboard Serial Port 2 controller will access.

**[Auto]:** The system automatically select an I/O address for the onboard Serial Port 2.

**[3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3]:** Allows you to manually select an I/O address for the onboard Serial Port 2.

**[Disabled]:** Disables the onboard Serial Port 2.

---

#### **UART Mode Select:**

This item selects the Infrared (IR) function mode.

---

#### **RxD, TxD Active:**

This item sets the IR transmission/reception polarity.

---

#### **IR Transmission Delay:**

This option enables or disables the IR transmission delay. When set to [Enabled], the transmission will be slower. This is recommended when transmission problem arise.

---

#### **UR2 Duplex Mode:**

This item selects the duplex mode required by the IR device connected to the IR port. Full-duplex mode permits simultaneous two-direction transmission. Half-duplex mode permits transmission in one direction only at a time. Refer to your IR KIT user's guide to find out which setting is correct.

---

#### **Use IR Pins:**

Two options are available: RxD2, TxD2 and IR-Rx2Tx2. The default setting is *IR-Rx2Tx2*.

If you choose *RxD2*, *TxD2*, your motherboard must support a COM port IR KIT connection. Otherwise, you can only choose the *IR-Rx2Tx2* to use the IR header on your motherboard to connect your IR KIT.

Please use the default setting.

---

#### **Onboard Parallel Port:**

This item specifies the I/O address used by the parallel port.

**[Disabled]:** This option prevents the parallel port from accessing any system resources. When the value of this option is set to [Disabled], the printer port becomes unavailable.

**[378/IRQ7]:** This option allows the parallel port to use [378/IRQ7] as its I/O port address. The majority of parallel ports on computer systems use IRQ7 and I/O Port 378H as the standard setting.

---

**[278/IRQ5]:** This option allows the parallel port to use [278/IRQ5] as its I/O port address.

**[3BC/IRQ7]:** This option allows the parallel port to use [3BC/IRQ7] as its I/O port address.

---

**Parallel Port Mode:**

This item specifies the parallel port mode.

**[Normal]:** Allows the standard parallel port mode to be used.

**[SPP]:** (Standard Parallel Port) Allows bi-directional parallel port operation at normal speed.

**[EPP]:** (Enhanced Parallel Port) Allows bi-directional parallel port operation at maximum speed.

**[ECP]:** (Extended Capabilities Port) Allows bi-directional parallel port operation at a speed faster than the normal mode's data transfer rate.

**[ECP+EPP]:** Allows parallel port operation at ECP and EPP mode.

---

**EPP Mode Select:**

This item selects the EPP mode.

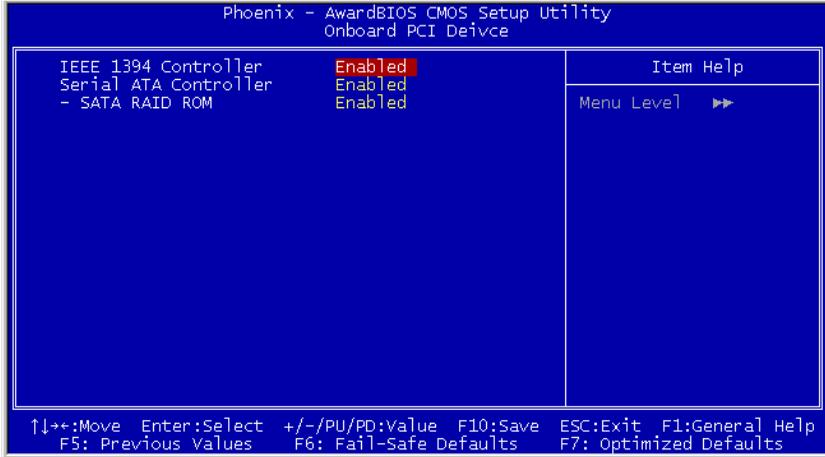
---

**ECP Mode Use DMA:**

This item selects the DMA channel of the parallel port.

### ↶ Onboard PCI Device:

Click <Enter> key to enter its submenu:



#### IEEE 1394 Controller:

This option enables or disables the IEEE 1394 controller.

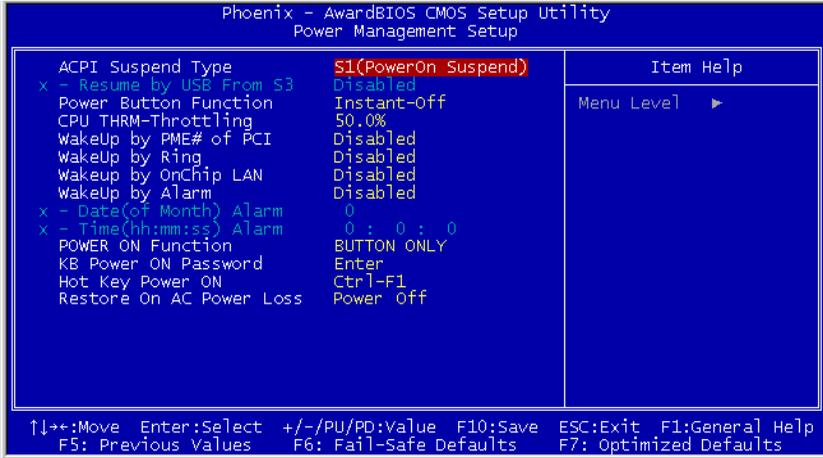
#### Serial ATA Controller:

This option enables or disables the Serial ATA controller of Silicon Image PCI Chip

#### \* SATA RAID ROM:

This item allows you to use the boot ROM of on-chip Serial ATA RAID to boot-up system.

### 3.6. Power Management Setup



#### ACPI Suspend Type:

This item selects the type of Suspend mode.

**[S1(PowerOn Suspend)]:** Enables the Power On Suspend function.

**[S3(Suspend To RAM)]:** Enables the Suspend to RAM function.

#### \* Resume by USB From S3:

When set to [Enabled], this item allows you to use a USB device to wake up a system that is in the S3 (STR - Suspend To RAM) state. This item can be configured only if the item "ACPI Suspend Type" is set to [S3(STR)].

#### Power Button Function:

This item selects the method of powering off your system:

**[Delay 4 Sec.]:** Pushing the power button for more than 4 seconds will power off the system. This will prevent the system from powering off in case you accidentally hit or pushed the power button.

**[Instant-Off]:** Pressing and then releasing the power button at once will immediately power off the system.

---

**CPU THRM-Throttling**

This item controls the CPU speed by cutting down its regular power to a percentage during the STR (Suspend To RAM) state.

---

**WakeUp by PME# of PCI:**

When set to [Enabled], access to the onboard LAN or a PCI card such as a modem or LAN card will cause the system to wake up. The PCI card must support the wake up function.

---

**WakeUp by Ring:**

When set to [Enabled], telephone calls coming through an external or internal modem will power-on your system.

---

**WakeUp by OnChip LAN:**

When set to [Enabled], you can remotely wake up a PC in Soft-Off condition via a LAN card that support the wake up function.

---

**WakeUp by Alarm:**

When set to [Enabled], you can set the date and time you would like the Soft-Off PC to power-on in the “**Date (of Month) Alarm**” and “**Time (hh:mm:ss) Alarm**” items. However, if the system is being accessed by incoming calls or the network (Resume On Ring/LAN) prior to the date and time set in these items, the system will give priority to the incoming calls or network instead.

\* **Date (of Month) Alarm**

[0]: This option power-on the system everyday according to the time set in the “Time (hh:mm:ss) Alarm” item.

[1-31]: This option selects a date you would like the system to power-on. The system will power-on on the date set, and the time set in the “Time (hh:mm:ss) Alarm” item.

\* **Time (hh:mm:ss) Alarm**

This item sets the time you would like the system to power-on.

---

**POWER ON Function:**

This item selects the way you want your system to power on.

[Password]: Use a password to power on the system, select this option then press <Enter>. Enter your password. You can enter up to 5 characters. Type in exactly the same password to confirm, and then press <Enter>.

**[Hot KEY]:** Use any of the function keys between <F1> to <F12> to power on the system.

**[Mouse Left]:** Double click the mouse left button to power on the system.

**[Mouse Right]:** Double click the mouse right button to power on the system.

**[Any KEY]:** Use any keyboard keys to power on the system.

**[BUTTON ONLY]:** Use only the power button to power on the system.

**[Keyboard 98]:** Use the power-on button on the “Keyboard 98” compatible keyboard to power on the system.

**NOTE:** To enable this “Power On” function, the wake-up header of [PS2-PWR1] and [USB-PWR1] must be set to [Enabled] position. Please refer to the configuration of “Wake-up Header” [PS2-PWR1] and [USB-PWR1] in section 2-4, chapter 2.

The mouse wake up function can only be used with the PS/2 mouse, not with the COM port or USB type. Some PS/2 mice cannot wake up the system because of compatible problems. If the specs of your keyboard are too old, it may fail to power on.

※ **KB Power ON Password:**

This item sets the password required in order to power on your computer.

**NOTE:** Do not forget your password, or you will have to clear the CMOS and reset all parameters in order to utilize this function again.

※ **Hot Key Power ON:**

This item powers on the system by pressing <Ctrl> key plus one of each function key (<F1> ~ <F12>) simultaneously.

---

**Restore On AC Power Loss:**

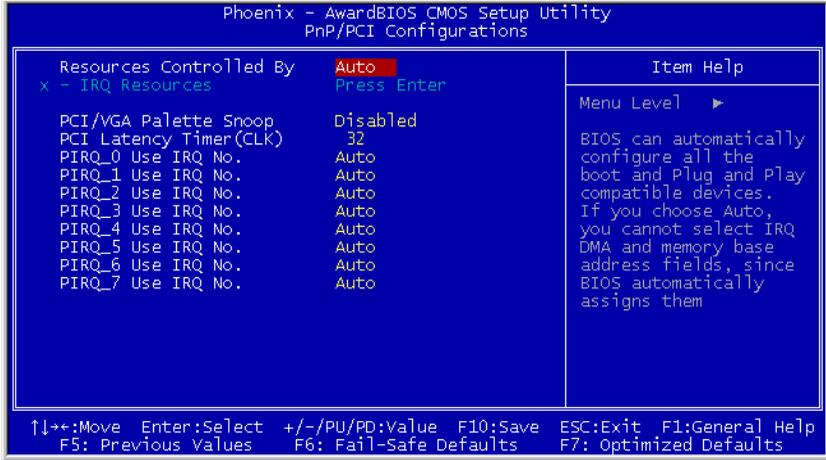
This item selects the system action after an AC power failure.

**[Power Off]:** When power returns after an AC power failure, the system’s power remains off. You must press the Power button to power-on the system.

**[Power On]:** When power returns after an AC power failure, the system’s power will be powered on automatically.

**[Last State]:** When power returns after an AC power failure, the system will return to the state where you left off before power failure occurs. If the system's power is off when AC power failure occurs, it will remain off when power returns. If the system's power is on when AC power failure occurs, the system will power-on when power returns.

### 3.7. PnP/PCI Configurations



**Resources Controlled By:**

This item configures all of the boot and Plug-and-Play compatible devices.

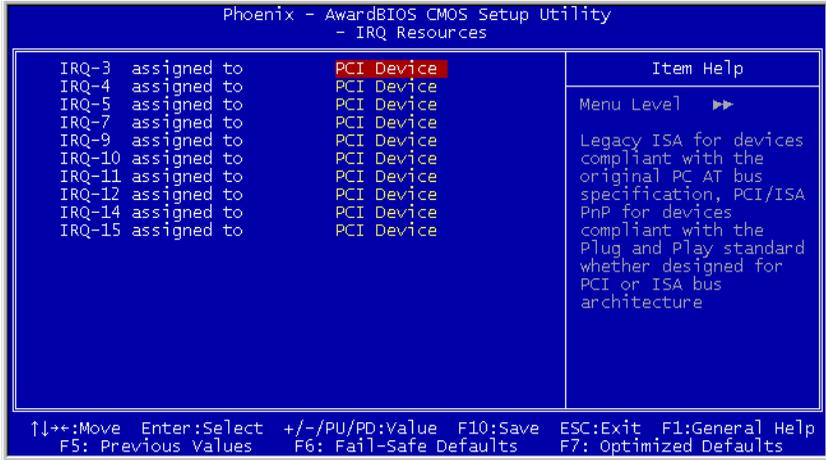
**[Auto]:** The system will automatically detect the settings.

**[Manual]:** Choose the specific IRQ resources in the “IRQ Resources” menu.

\* **IRQ Resources:**

Click <Enter> key to enter its submenu:

This item sets each system interrupt to either [PCI Device] or [Reserved].



**PCI/VGA Palette Snoop:**

This item determines whether the MPEG ISA/VESA VGA cards can work with PCI/VGA or not.

[Enabled]: MPEG ISA/VESA VGA cards work with PCI/VGA.

[Disabled]: MPEG ISA/VESA VGA cards do not work with PCI/VGA.

**PCI Latency Timer(CLK):**

This item controls how long each PCI device can hold the bus before another takes over. When set to higher values, every PCI device can conduct transactions for a longer time and thus improve the effective PCI bandwidth. For better PCI performance, you should set the item to higher values.

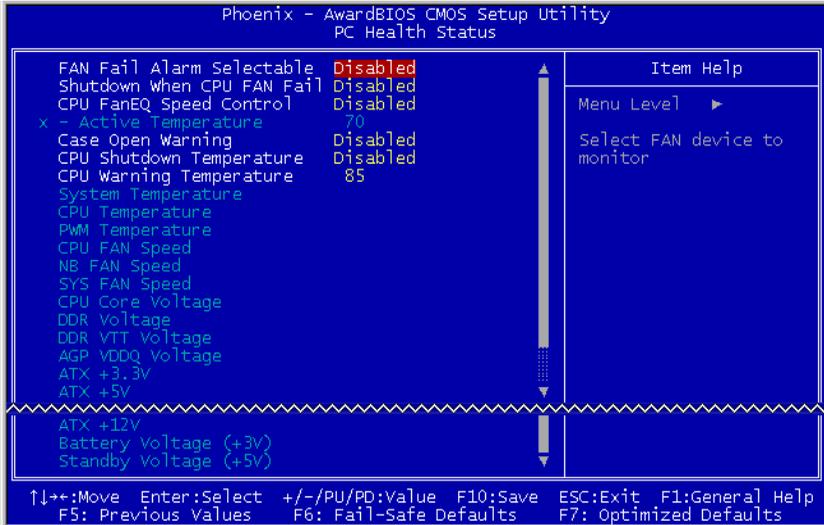
**PIRQ\_0 Use IRQ No. ~ PIRQ\_7 Use IRQ No.:**

This item specifies the IRQ number manually or automatically for the devices installed on PCI slots.

For the relations between the hardware layout of PIRQ (the signals from the ICH chipset), INT# (means PCI slot IRQ signals) and devices, please refer to the table below:

Signals	AGP	LAN	PCI-1	PCI-2	PCI-3	PCI-4	IEEE-1394	SATA
PIRQ_0 Assignment	INT A		INT D					
PIRQ_1 Assignment	INT B		INT A					
PIRQ_2 Assignment		INT A	INT B				INT A	
PIRQ_3 Assignment			INT C	INT A	INT A	INT A		INT A
PIRQ_4 Assignment								
PIRQ_5 Assignment								
PIRQ_6 Assignment								
PIRQ_7 Assignment								

### 3.8. PC Health Status



#### FAN Fail Alarm Selectable:

This item selects the fan that will be monitored for malfunction.

#### Shutdown When CPU Fan Fail:

When set to [Enabled], the system will be shut down if the CPU fan is not running.

#### CPU FanEQ Speed Control:

This item allows you to control the CPU fan speed down to a specific percentage.

When set to a specific percentage, the CPU fan speed will run at the percentage you set in this item if the temperature limit set in the item “Active Temperature” is not exceeded.

The CPU fan speed will run at 100% regardless of what the percentage you set in this item if the temperature limit set in the item “Active Temperature” is exceeded.

#### \* Active Temperature:

This item sets the temperature limit that would activate the function of “CPU FanEQ Speed Control” option.

---

**Case Open Warning**

This option controls the action to take when the chassis intrusion device connected to header JP1 is activated.

**[Disabled]:** Disable the case-open warning.

**[Message]:** Display a warning message in the monitor.

**[Shutdown]:** Shutdown the system.

---

**CPU Shutdown Temperature:**

This item sets the temperature that would shutdown the system automatically in order to prevent system overheats.

---

**CPU Warning Temperature:**

This item selects the CPU's warning temperature limit. Once the system has detected that the CPU's temperature exceeded the limit, warning beeps will sound.

**NOTE:** The onboard hardware monitor function is capable of detecting these system health conditions. If you want a warning message to pop-up or a warning alarm to sound when an abnormal condition occurs, you must install the "Hardware Doctor" utility. This utility is included in the "Driver & Utility CD" that came packed with this motherboard.

---

**All Voltages, Fans Speed and Thermal Monitoring:**

These unchangeable items list the current status of the CPU and environment temperatures, fan speeds, and system power voltage.

**NOTE:** The hardware monitoring features for temperatures, fans and voltages will occupy the I/O address from 294H to 297H. If you have a network adapter, sound card or other add-on cards that might use those I/O addresses, please adjust your add-on card I/O address to avoid using these addresses.

---

### **3.9. Load Fail-Safe Defaults**

This option loads the BIOS default values for the most stable, minimal-performance system operations.

### **3.10. Load Optimized Defaults**

This option loads the BIOS default values that are factory settings for optimal-performance system operations.

### **3.11. Set Password**

This option protects the BIOS configuration or restricts access to the computer itself.

### **3.12. Save & Exit Setup**

This option saves your selections and exits the BIOS setup menu.

### **3.13. Exit Without Saving**

This option exits the BIOS setup menu without saving any change.

## Chapter 4. Driver Installation

After all the hardware has been installed, you must first install the operating system and then the software drivers. The necessary drivers are all included within the Drivers & Utilities CD that came packaged with your workstation board.

The display shown in the following figure should appear after inserting this CD into your CD-ROM drive, if not, enter → [My Computer] → CD-ROM drive → double click [Launch].



**Setup Items**

- **Intel Chipset Software Utility**  
Install Intel chipset driver for Windows Operating System.
- **Audio Driver**  
Install AC 97 CODEC driver for Windows Operating System.
- **Intel LAN Driver**  
Install the drivers needed to run Fast Ethernet controller.
- **Silicon Serial ATA RAID**  
Install Serial ATA RAID driver for Windows Operating System.
- **USB 2.0 Driver**  
Update USB 2.0 driver for Windows Operating System.
- **Manual**  
View the user's manual in PDF.
- **Utility**  
Click to enter the sub-screen for installing software like Award Flash, Microsoft DirectX, and Acrobat Reader.
- **Browse CD**  
Browse the contents of this CD-ROM.
- **Close**  
Exit the CD setup items.

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## **Appendix A. How to Get Technical Support**

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(From our website) <http://www.abit.com.tw>

(In North America) <http://www.abit-usa.com>

(In Europe) <http://www.abit.nl>

Thank you for choosing ABIT products. ABIT sells all our products through distributors, resellers and system integrators; we have no direct sales to end-users. Before sending email for tech support please check with your resellers or integrators if you need any services, they are the ones who sold you your system and they should know best as to what can be done, how they serve you is a good reference for future purchases.

We appreciate every customer and would like to provide the best service to you. Providing fast service to our customers is our top priority. However we receive many phone calls and a huge amount of email from all over the world. At the present time it is impossible for us to respond to every single inquiry. Therefore it is quite possible that if you send an email to us that you may not receive a response.

We have done many compatibility tests and reliability tests to make sure our products have the best quality and compatibility. In case you need service or technical support, please understand the constraint we have and **always check with the reseller who sold the product to you first.**

To expedite service, we recommend that you follow the procedures outlined below before contacting us. With your help, we can meet our commitment to provide the best service to the **greatest number of ABIT customers:**

- 1. Check the Manual.** It sounds simple but we have taken a lot of care in making a well-written and thorough manual. It is full of information that doesn't only pertain to motherboards. The CD-ROM included with your board will have the manual as well as drivers. If you don't have either one, go to our Program Download Area of the Website or FTP workstation.
- 2. Download latest BIOS, software or drivers.** Please go to our Program Download area on our Website to check to see if you have the latest BIOS. They are developed over periods of time to fix bugs or incompatibilities. **Also please make sure you have the latest drivers from your peripheral cards makers!**
- 3. Check the ABIT Technical Terms Guide and FAQ on our Website.** We are trying to expand and make the FAQs more helpful and information rich. Let us know if you have any suggestions. For hot topics check out our HOT FAQ!

4. **Internet Newsgroups.** They are a great source of information and many people there can offer help. ABIT's Internet News group, [alt.comp.periphs.mainboard.abit](mailto:alt.comp.periphs.mainboard.abit), is an ideal forum for the public to exchange information and discuss experiences they have had with ABIT products. Many times you will see that your question has already been asked before. This is a public Internet news group and it is reserved for free discussions. Here is a list of some of the more popular ones:

[alt.comp.periphs.mainboard.abit](mailto:alt.comp.periphs.mainboard.abit)  
[comp.sys.ibm.pc.hardware.chips](mailto:comp.sys.ibm.pc.hardware.chips)  
[alt.comp.hardware.overclocking](mailto:alt.comp.hardware.overclocking)  
[alt.comp.hardware.homebuilt](mailto:alt.comp.hardware.homebuilt)  
[alt.comp.hardware.pc-homebuilt](mailto:alt.comp.hardware.pc-homebuilt)

5. **Ask your reseller.** Your ABIT authorized distributor should be able to provide the fastest solution to your technical problem. We sell our products through distributors who sell to resellers and stores. Your reseller should be very familiar with your system configuration and should be able to solve your problem much more efficiently than we could. After all, your reseller regards you as an important customer who may purchase more products and who can urge your friends to buy from him or her as well. They integrated and sold the system to you. They should know best what your system configuration is and your problem. They should have reasonable return or refund policies. How they serve you is also a good reference for your next purchase.
6. **Contacting ABIT.** If you feel that you need to contact ABIT directly you can send email to the ABIT technical support department. First, please contact the support team for the branch office closest to you. They will be more familiar with local conditions and problems and will have better insight as to which resellers offer what products and services. Due to the huge number of emails coming in every day and other reasons, such as the time required for problem reproduction, we will not be able to reply to every email. Please understand that we are selling through distribution channels and don't have the resources to serve every end-user. However, we will try to do our best to help every customer. Please also remember that for many of our technical support team English is a second language, you will have a better chance of getting a helpful answer if your question can be understood in the first place. Be sure to use very, simple, concise language that clearly states the problem, avoid rambling or flowery language and always list your system components. Here is the contact information for our branch offices:

***North America and South America:***

**ABIT Computer (U.S.A.) Corporation**

45531 Northport Loop West,  
Fremont, California 94538, U.S.A.

Tel: 1-510-623-0500

Fax: 1-510-623-1092

[sales@abit-usa.com](mailto:sales@abit-usa.com)

[technical@abit-usa.com](mailto:technical@abit-usa.com)

<http://www.abit-usa.com>

***U.K. and Ireland:***

**ABIT Computer (U.K.) Corporation Ltd.**

Unit 3, 24-26 Boulton Road,  
Stevenage, Herts SG1 4QX, U.K.

Tel: 44-1438-228888

Fax: 44-1438-226333

[sales@abitcomputer.co.uk](mailto:sales@abitcomputer.co.uk)

[technical@abitcomputer.co.uk](mailto:technical@abitcomputer.co.uk)

***Germany, Benelux (Belgium, Netherlands, Luxembourg),  
Denmark, Norway, Sweden, Finland, and Switzerland:***

**AMOR Computer B.V. (ABIT's European Office)**

Van Coehoornstraat 7,  
5916 PH Venlo, The Netherlands

Tel: 31-77-3204428

Fax: 31-77-3204420

[sales@abit.nl](mailto:sales@abit.nl)

[technical@abit.nl](mailto:technical@abit.nl)

<http://www.abit.nl>

***Austria, Czech, Romania, Bulgaria, Yugoslavia, Slovakia,  
Slovenia, Croatia, Bosnia, Serbia, and Macedonia:***

**Asguard Computer Ges.m.b.H**

Schmalbachstrasse 5,  
A-2201 Gerasdorf/Wien, Austria

Tel: 43-1-7346709

Fax: 43-1-7346713

[asguard@asguard.at](mailto:asguard@asguard.at)

***Japan:*****ABIT Computer (Japan) Co. Ltd.**

Fax: 81-3-5396-5110

<http://www.abit4u.jp>***Shanghai:*****ABIT Computer (Shanghai) Co. Ltd.**

Tel: 86-21-6235-1829

Fax: 86-21-6235-1832

<http://www.abit.com.cn>***Russia:*****ABIT Computer (Russia) Co. Ltd.**

Fax: 7-095-937-2837

[techrussia@abit.com.tw](mailto:techrussia@abit.com.tw)<http://www.abit.ru>***France, Italy, Spain, Portugal, and Greece:*****ABIT Computer France SARL**

Tel: 33-1-5858-0043

Fax: 33-1-5858-0047

<http://www.abit.fr>***All other territories not covered above please contact Taiwan Head Office:***

When contacting our headquarters please Note we are located in Taiwan and we are 8+ GMT time. In addition, we have holidays that may be different from those in your country.

**ABIT Computer Corporation**

No.323, Yang Guang St., Neihu, Taipei, 114, Taiwan

Tel: 886-2-8751-8888

Fax: 886-2-8751-3382

[sales@abit.com.tw](mailto:sales@abit.com.tw)[market@abit.com.tw](mailto:market@abit.com.tw)[technical@abit.com.tw](mailto:technical@abit.com.tw)<http://www.abit.com.tw>

7. **RMA Service.** If your system has been working but it just stopped, but you have not installed any new software or hardware recently, it is likely that you have a defective component. Please contact the reseller from whom you bought the product. You should be able to get RMA service there.
  
8. **Reporting Compatibility Problems to ABIT.** Because of tremendous number of email messages we receive every day, we are forced to give greater weight to certain types of messages than to others. For this reason, any compatibility problem that is reported to us, giving detailed system configuration information and error symptoms will receive the highest priority. For the other questions, we regret that we may not be able to reply directly. But your questions may be posted to the Internet news group in order that a larger number of users can have the benefit of the information. Please check the news group from time to time.

**Thank You**

**ABIT Computer Corporation**

**<http://www.abit.com.tw>**



## Technical Support Form

**Company Name:**

**Phone Number:**

**Contact Person:**

**Fax Number:**

**E-mail Address:**

Model	*	BIOS ID #	*
Motherboard Model No.		DRIVER REV	
OS/Application	*		
Hardware Name	Brand	Specifications	
CPU	*		
HDD	<input type="checkbox"/> IDE1 <input type="checkbox"/> IDE2		
CD-ROM-Drive	<input type="checkbox"/> IDE1 <input type="checkbox"/> IDE2		
System Memory			
ADD-ON CARD			

Problem Description:

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