



## **4D845G**

### **User's Manual Version 1.1**

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## Chapter

# 1

## 1.1 Introduction

The 4D845G motherboard is designed for using Intel P4 Front Side Bus Frequency 400/533MHz CPU, which utilizes the Socket-478 design and the memory size expandable to 2.0GB.

This motherboard use the latest Intel Brookdale-G chipset, applying 400/533MHz (Double Data Rate) Front Side Bus frequency and 266 MHz memory interface delivers a clear upgrade path to the future generation of 266MHz processors, PC-1600/PC-2100 DDR SDRAM. The 4D845G motherboard offers ULTRA ATA 100/133 to provide speedier HDD throughout that boosts overall system performance.

It is ideal for multi-tasking and fully supporting MS-DOS, Windows, Windows NT , Windows ME, Windows 2000, Novell, OS/2, Windows95/98, Windows 98SE, Windows XP, UNIX, Liunx, SCO UNIX etc. This manual also explains how to install the mainboard for operation, and how to setup your CMOS configuration with the BIOS setup program.

## 1.2 Package Contents

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

## 1.3 Features

<b>CPU Processor</b> <ul style="list-style-type: none"><li>◀ Support 400/533MHz System Interface speed.</li><li>◀ Single Socket 478 for Intel P4™ 1.5GHz to 2.53G or higher (Northwood Processor).</li><li>◀ Support Intel Netburst™ Micro-architecture.</li></ul>
<b>Chipset</b> <ul style="list-style-type: none"><li>◀ Intel Brookdale-G North Bridge.</li><li>◀ Intel ICH4 South Bridge.</li></ul>
<b>PCI/AGP Speed</b> <ul style="list-style-type: none"><li>◀ Supports 33MHz PCI Bus speed.</li><li>◀ Supports AGP 66 MHz/1.5V for 4X device.</li></ul>
<b>DDRSDRAM Memory</b> <ul style="list-style-type: none"><li>◀ Supports 64/128/256/512...MB DDR module socket.</li><li>◀ Supports Synchronous DRAM(2.5V)</li><li>◀ Supports a maximum memory size of 2GB with DDR SDRAM.</li></ul>
<b>Bus Slots</b> <ul style="list-style-type: none"><li>◀ Provide one AGP slot.</li><li>◀ Six 32-bit PCI bus.</li></ul>
<b>Universal Serial Bus</b> <ul style="list-style-type: none"><li>◀ Supports two back Universal Serial Bus(USB)Ports and four front Universal serial Bus(USB)Ports.</li><li>◀ Supports USB 2.0</li></ul>
<b>WOL (Wake On LAN)</b> <ul style="list-style-type: none"><li>◀ Supports system power on from LAN ring up.</li></ul>
<b>Integrate LAN (Optional)</b> <ul style="list-style-type: none"><li>◀ Fast Ethernet Controller 10/100 Mpps.</li></ul>

## 1.3 Features

### BIOS

- ◀ The mainboard BIOS provides Plug & Play BIOS which detects the peripheral devices and expansion cards of the board automatically.
- ◀ BIOS support CD-ROM, SCSI, LAN BOOT, Temperature sensor, Lan, Alarm Bus CLK setup with BIOS.
- ◀ The mainboard provides a Desktop Management Interface (DMI) function which records your mainboard specifications.

### IDE Built-in On Board

- ◀ Supports four IDE devices.
- ◀ Supports PIO Mode 5, Master Mode, high performance hard disk drives.
- ◀ Supports Ultra DMA 33/66/100 Bus Master Mode.
- ◀ Supports IDE interface with CD-ROM.
- ◀ Supports high capacity hard disk drives.
- ◀ Support LBA mode.

### On-board ATA/100 IDE RAID (IDE3/IDE4 only) (Optional)

- ◀ Supports data striping (RAID 0) and mirroring (RAID 1). Provides dramatic increase in drive performance and/or fault tolerant options. Offers performance customization and data rebuilds from the BIOS menu. Mirroring supports automatic background rebuilds. Fault tolerance can be restored automatically without rebooting.

### PCI-Based AC 97 Digital Audio Processor

- ◀ AC 97 2.1 interface.
- ◀ 16 channels of high-quality sample rate conversion.
- ◀ 16x8 channel digital mixer.
- ◀ Stereo 10 band graphic equalizer.
- ◀ Sound Blaster and Sound Blaster Pro emulation.

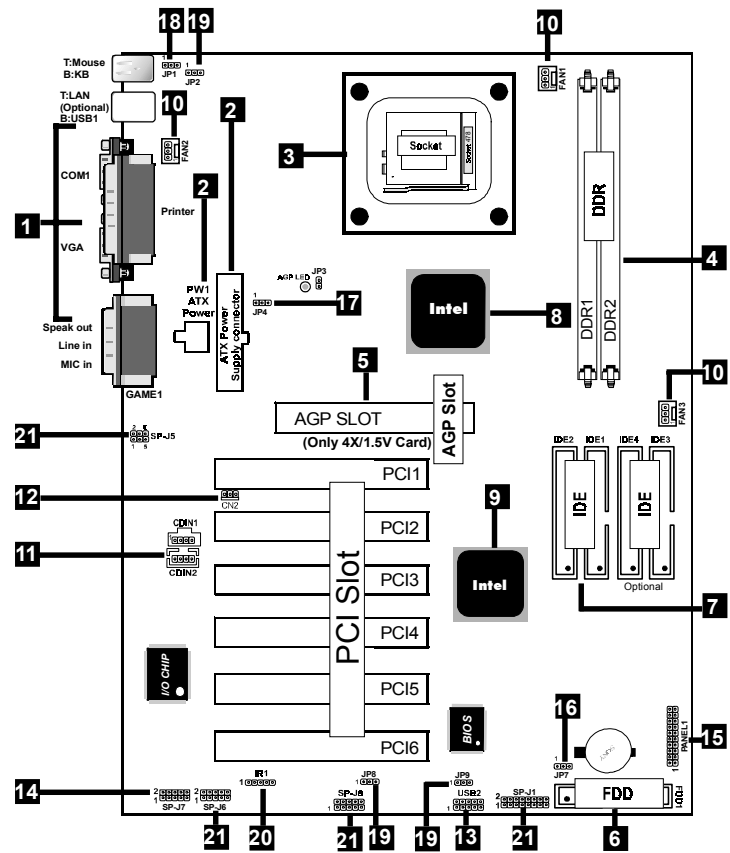
## 1.4 4D845G Motherboard Layout



**Note:**

*Be aware of when you handling any components even this motherboard, please wear an anti-static wrist strap (not included) and touch a grounded conductor and you must be very careful to avoid touching those componets or damage will occure very easily.*

# 1.4 4D845G Layout



1. Back Panel I/O Connectors (Mouse, Keyboard, USB1, COM1, COM2, Printer, MIC in, Line in, Speaker out, Game stick)
2. ATX Power Connectors (ATX/PW1)
3. CPU Processor (Socket 478)
4. DDR SDRAM Sockets (DDR1/DDR2)



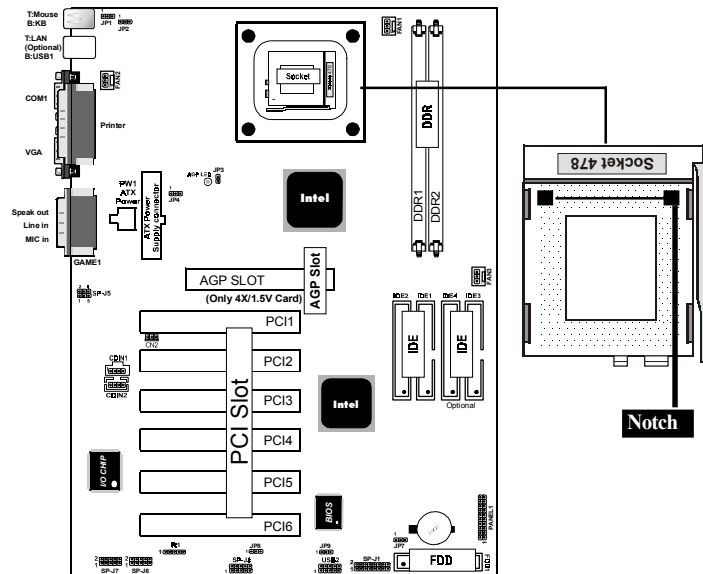
- 5. AGP Slot**
- 6. Floppy Connector**
- 7. IDE Connectors (IDE1/IDE2/ID3/ID4)**
- 8. North Bridge (Intel Brookdale-G)**
- 9. South Bridge (Intel ICH4)**
- 10. Fan Connectors (FAN1/FAN2/FAN3)**
- 11. CD Audio-In Connectors (CDIN1/CDIN2)**
- 12. Wake-On-LAN Connector (CN2)**
- 13. Front USB Port Connector (USB2)**
- 14. Front COM2 Port Connector (SP-J7)**
- 15. Front Panel Connector (PANEL)**
- 16. CMOS Function Selection (JP7)**
- 17. CPU Clock Frequency Setting (JP4)**
- 18. Keyboard Wake up Setting (JP1)**
- 19. USB Wake up Setting (JP2/JP8/JP9)**
- 20. IR Connector**
- 21. Smart Panel Function (SP-J1/SP-J5/SP-J6/SP-J7/SP-J8)  
(optional)**

## 1.5 CPU Installation

The motherboard operates with Socket 478 for Intel P4™ processor. The CPU should always has a Heat Sink and cooling fan attached to prevent overheating.

### CPU Installation Procedures: 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 and look for the white dot or cut edge in the CPU. Match Pin 1 with the white dot or cut edge then insert the CPU.
3. Press the lever down to complete the installation.
- 4. Make sure the spec of the heatsink is good enough.**
- 5. Please lock the fan on CPU very carefully, or you will damage the resistor array even circuit line on the mainboard.**



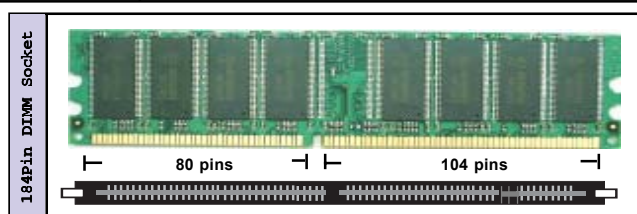
## 1.6 DDR SDRAM Installation

The motherboard supports a maximized 2GB memory. It provides three 184-pin unbuffered DDR sockets. It supports 64MB to 1GB DDR memory module.

### DDR SDRAM Installation Procedures:

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 vertically to fit onto place.
3. The Mounting Holes and plastic tabs should fit over the edge and hold the DDR memory modules in place.

Bank	Memory module
DDR 1 ( Bank 0-1 )	64MB, 128MB, 256MB, 512MB, 1GB 184 pin, 2.5V DDR SDRAM
DDR 2 ( Bank 2-3 )	64MB, 128MB, 256MB, 512MB, 1GB 184 pin, 2.5V DDR SDRAM
	<b>Total System Memory (Max 2GB)</b>



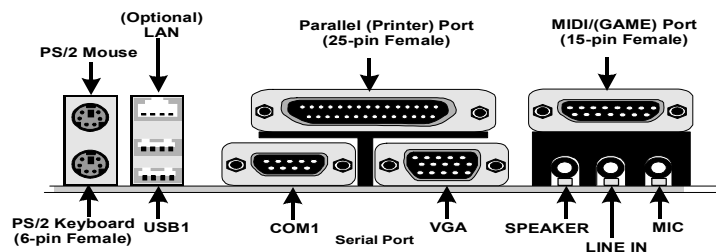
#### Note:

When you plug or unplug DDR module, you must check your power supply is OFF.

## 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 Port Connector: USB1

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 LAN Port Connector (Optional)

This connector is standard RJ45 connector for network connector.

##### RJ-45



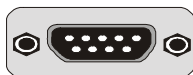
1 2 3 4  
USB1

RJ-45	10/100M LAN Port
Pin	Signal
1	+5V_SB
2	USBP0-(USBP1-)
3	USBP0+(USBP1+)
4	GND

#### 1.7.1.4 Serial Interface Port: COM1

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 your computer system. If you like to transfer the contents of your hard disk to another system, it can be accomplished by serial port.

COM1



#### 1.7.1.5 VGA Interface Connector: VGA(15 Pin)

This connector is for output to VGA-compatible devices.

VGA



#### 1.7.1.6 Parallel Interface Port

Unlike serial ports, parallel interface ports have been standardized and should not present any difficulty interfacing peripherals to your system. Sometimes called a Centronics port, the parallel port is almost exclusively used with printers. The parallel port on your system has a 25-pin, DB 25 connector.

#### 1.7.1.7 Joystick / Midi Connector

You can connect a joystick or game pad to this connector.

#### 1.7.1.8 Audio Port Connectors


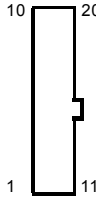
Speaker out is a connector for Speakers or Headphones. Line in is used for external CD player, Tape player, or other audio devices. Mic is a connector for the microphones.

### 1.7.2 ATX Power Connectors: PW1/ATX

-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 ATX Signal		Pin ATX 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:**

1. Make sure that the ATX PIII power supply can take at least 1Amp on the 5Volt standby lead (5VSB).
2. When you use P4 power supply, you must plug PW1 & ATX power connector on your system.

**Important:**

Before you switch on your power supply, please make sure:

1. Memory Module installing is OK.
2. Power supply setting is OK.
3. AGP card for 2X or 4X device is OK.

### 1.7.3 Floppy Disk Connector: FDD

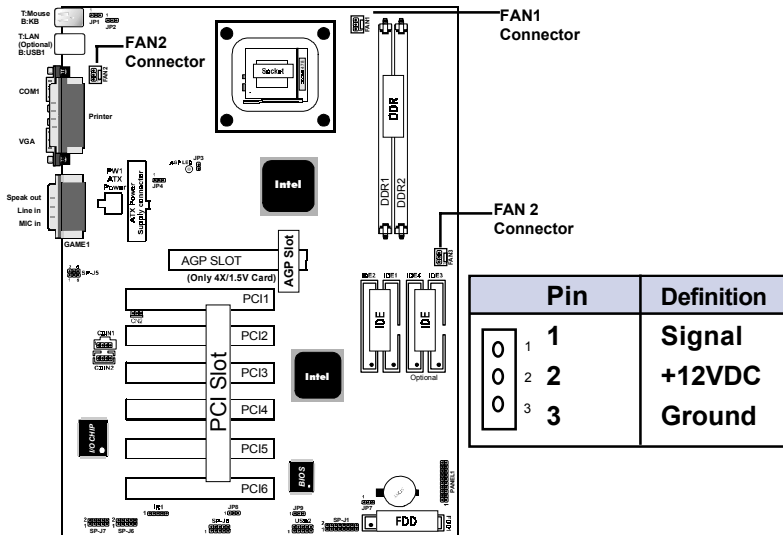
This connector supports the provided floppy drive ribbon cable. After connecting the single end to the board, connect the two plugs on the other end to the floppy drives.

### 1.7.4 Hard Disk Connectors: IDE1/IDE2

These connectors support the provided IDE hard disk ribbon cable. After connecting the single end to the board, connect the two plugs 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) (Pin 20 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 20 plugged).

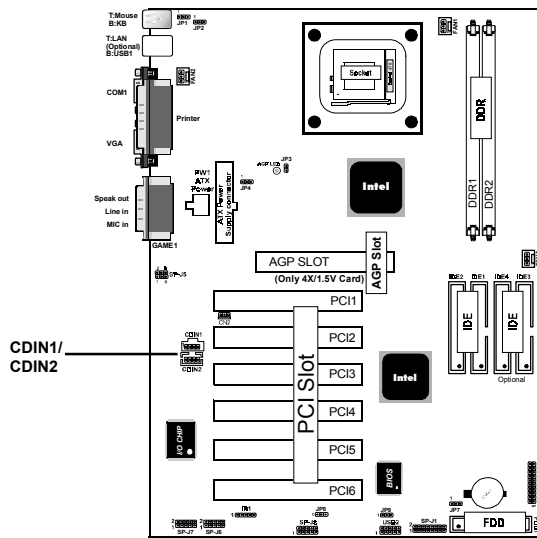
### 1.7.5 Fan Connectors: FAN1~3



These connectors support cooling fans of 1Amp or less. Orientate the fans so that the heatsink fins allow airflow to go across the onboard heat sink(s) instead of the expansion slots. Depending on the fan manufacturer, the wiring and plug may be different. The red wire should be positive, while the black should be ground. Connect the fan's plug to the board taking into consideration the polarity of the this connector.

**1.7.6 CD Audio-In Connectors: CDIN1/CDIN2**

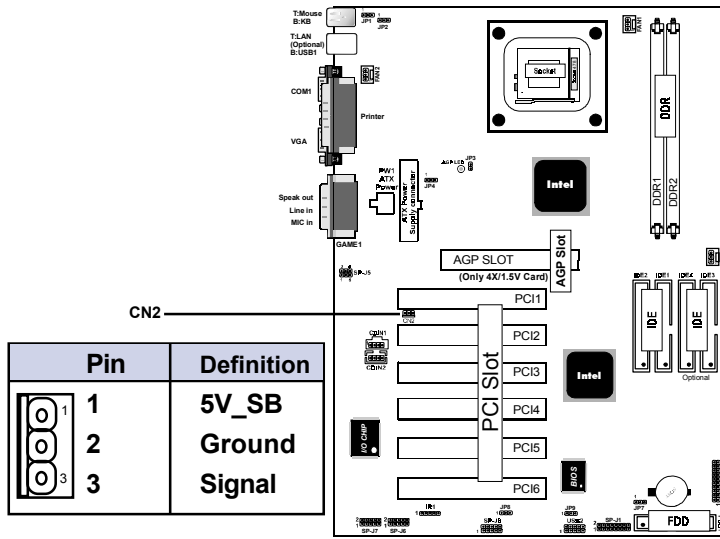
CDIN1/2 are the connectors for CD-Audio Input signal. Please connect it to CD-ROM CD-Audio output connector.



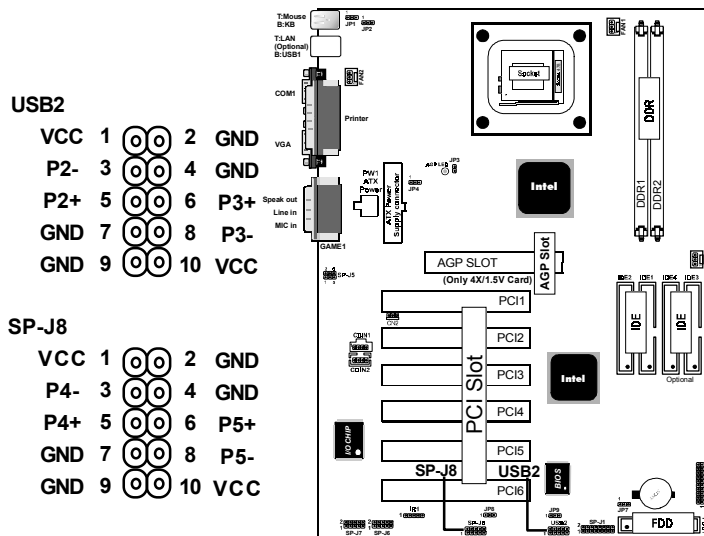
Pin CDIN1	Definition	Pin CDIN2	Definition
1	GND	1	CD-L
2	CD-L	2	GND
3	GND	3	GND
4	CD-R	4	CD-R



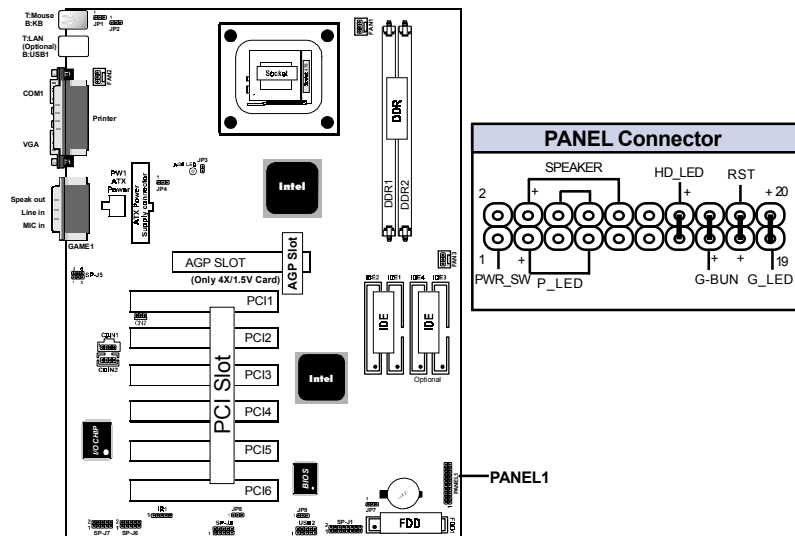
### 1.7.7 Wake-On-LAN Connector: CN2



### 1.7.8 Front USB Port Connector: USB2/SP-J8



### 1.7.9 Front Panel Connector: PANEL1



#### ATX Power Switch (PWR\_SW)

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 (P\_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.

**SMI Suspend Switch Lead (G-BUN) (Disabled)**

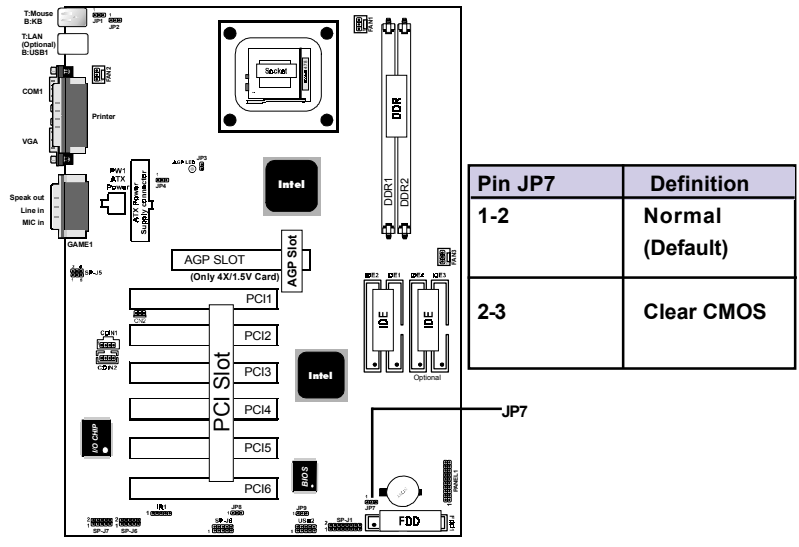
This allows the user to manually place the system into a suspend mode of Green mode. System activity will be instantly decreased to save electricity and expand the life of certain components when the system is not in use. This 2-pin connector (see the figure) connects to the case-mounted suspend switch. 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 on the default setting of Enable.

**Reset Switch Lead (RST)**

The connector can be connected to a momentary SPST type switch that is normally open. When the switch is closed, the motherboard resets and runs the POST.

**1.7.10 CMOS Function Selection: JP7**

A battery be used to retain the mainboard configuration in CMOS RAM.



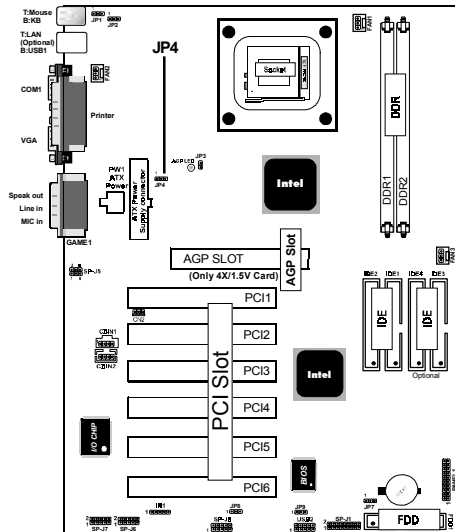
**NOTE:**

(Please follow the procedure below to clear CMOS data.)

- (1) Remove the AC power line.
- (2) JP7(2-3) Closed.
- (3) Wait five seconds.
- (4) JP7(1-2) Closed.
- (5) AC Power on.
- (6) Reset your desired password or clear CMOS data.

**1.7.11 CPU Clock Frequency Setting: JP4**

Overclocking is operating a CPU/Processor beyond its specified frequency. JP4 jumper is used for the CPU Front Side Bus Frequencies from 100MHz to 133MHz.



**NOTE:**

Intel CPU doesn't support overclock and overcore, we don't recommend users use these functions for possible CPU damage.

Pin JP4	CPU(MHz)	PCI(MHz)	Default
1-2	Auto	33.3	
2-3	100	33.3	*
Open	133	33.3	

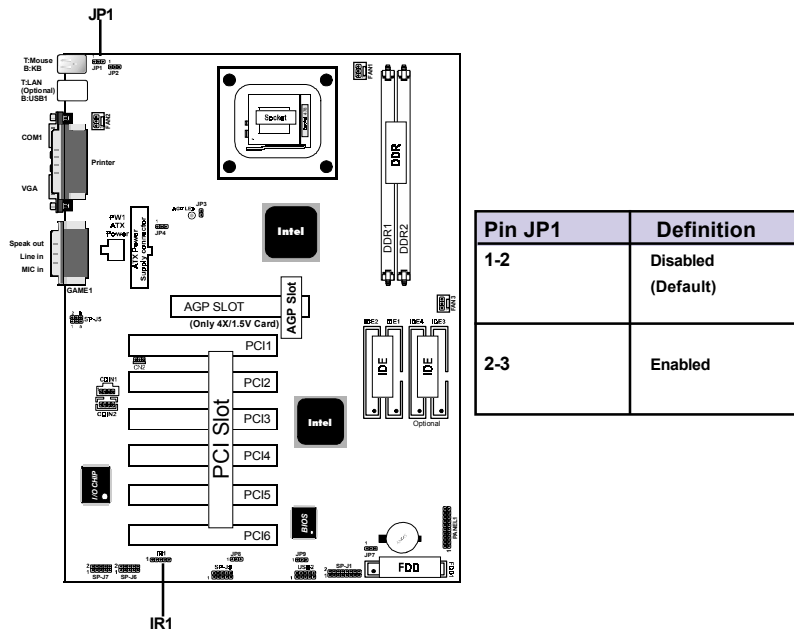
### 1.7.12 IR infrared module: IR1

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

Pin	Assignment
1	+5V
2	N/A
3	IRRX
4	GND
5	IRTX

### 1.7.13 Keyboard Wak up Setting: JP1

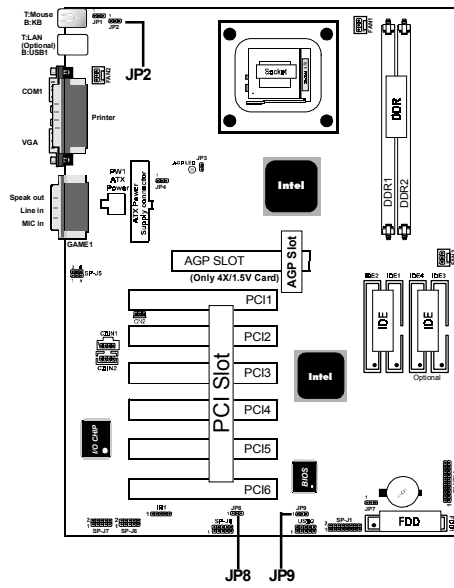
The JP1 Jumper is for setting keyboard power. This function is provided by keyboard Wake-up function.



Pin JP1	Definition
1-2	Disabled (Default)
2-3	Enabled

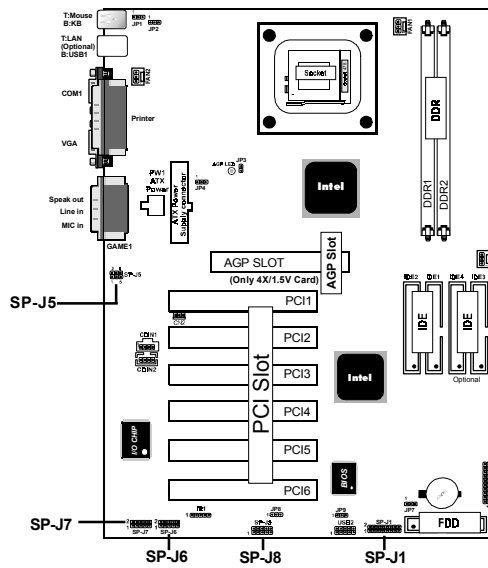
### 1.7.14 USB Wake up Setting: JP2/JP8/JP9

The JP2/JP8/JP9 Jumper are for setting USB power. This function is provided by USB Wake-up function.



Pin JP2/8/9	Definition
1-2	Disabled (Default)
2-3	Enabled

**1.7.15 Smart Panel Function: SP-J1/SP-J5/SP-J6/SP-J7 /SP-J8 (optional)**



**Note:**  
 The motherboard provides the pin leads for Smart Panel. If you want POST Error Code or Smart Panel function, please refer to Smart Panel manual (version 2.0).

The Smart Panel provides the following panel connectors:



**1.7.15.1 Port 80 Debug Function: SP-J6**

For Smart Panel connector(SP-J6) to M/B (SP-J6).

Pin SP-J6	Assignment	Pin SP-J6	Assignment
1	ERD4	2	ERD0
3	ERD5	4	ERD1
5	ERD6	6	ERD2
7	ERD7	8	ERD3
9	GND	10	NC

**1.7.15.2 Second BIOS Connector: SP-J1**

For Smart Panel connector(SP-J1) to M/B (SP-J1).

Pin SP-J1	Assignment	Pin SP-J1	Assignment
1	VCC3	2	+5V
3	PCI_RST#	4	33MHz
5	CLAD0	6	P66DET
7	CLAD1	8	S66DET
9	GND	10	GND
11	CLAD2	12	HINT
13	CLAD3	14	FWH_IDD1
15	CLAD4	16	VCC3

**1.7.15.3 AUX Line Connector: SP-J5**

For Smart Panel connector(SP-J5) to M/B (SP-J5).

Pin SP-J5	Assignment	Pin SP-J5	Assignment
1	LINE_OUT_L	2	LINE_OUT_R
3	LINE_IN_L	4	LINE_IN_R
5	MIC_IN_L	6	MIC_IN_R



**1.7.15.4 Front COM2 Header Conn.: SP-J7**

For Smart Panel connector(SP-J7) to M/B (SP-J7).

Pin SP-J7	Assignment	Pin SP-J7	Assignment
1	DCD	2	RX
3	TX	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI		

**1.7.15.5 Front USB3,4 Header Conn.: SP-J8(USB2)**

For Smart Panel connector(SP-J8) to M/B (SP-J8).

Pin SP-J8	Assignment	Pin SP-J8	Assignment
1	VCC	2	GND
3	P2-	4	GND
5	P2+	6	P3+
7	GND	8	P3-
9	GND	10	VCC

## Chapter

# 2

### **Introduction**

This chapter discusses the Award Setup program built into the ROM BIOS. The Setup program allows the user to modify the basic system configuration. This special information is then stored in battery-backed RAM so that it retains the setup information when the power is turned off.

The Award BIOS installed in your computer system's ROM (Read Only Memory) is a custom version of an industry standard BIOS. This means that it supports Intel P4 Processor. The BIOS provides critical low-level support for standard devices such as disk drives and serial and parallel ports.

The rest of this manual is intended to guide you through the process of configuring your system using Setup.

### **Plug and Play Support**

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

**Support CPU**

This AWARD BIOS supports the Intel P4 Processor.

**Using Setup**

In general, you use the arrow keys to highlight items, 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 actual version on 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

## 2.1 Main Menu

Once you enter AWARD BIOS CMOS Set up Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup function. Use the arrow keys to select among the items and press<Enter> to accept and enter the sub-menu.

**“WARNING”**

*The information about BIOS defaults on manual (Figure 1,2,3,4,5,6,7,8,9,10,11,12,13,14)is just for reference, please refer to the BIOS installed on the board for updated information.*

**Figure 1. Main Menu**

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Standard CMOS Features	Frequency/Voltage Control
Advanced BIOS Features	Load Fail-Safe Defaults
Advanced Chipset Features	Load Optimized Defaults
Integrated Peripherals	Set Supervisor Password
Power Management Setup	Set User Password
PNP/PCI Configurations	Save & Exit Setup
PC Health Status	Exit Without Saving
Esc : Quit F9 : Menu in BIOS ←→↑↓: Select Item	
F10 : Save & Exit Setup	
Time , Date , Hard Disk Type ...	

### 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 more likely to configure 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 Password**

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

**Set User Password**

You can specify both a User and a Supervisor password. When you select either password option, you are prompted for a 1-6 character password. Enter the password and then retype the password when prompted.

**Save & Exit Setup**

Save CMOS value changes to CMOS and exit setup.

**Exit Without Saving**

Abandon all CMOS value changes and exit setup.

## 2.2 Standard CMOS Features

This item in the Standard CMOS Setup Menu is divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

### i - Figure 2. Standard CMOS Features

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#### Standard CMOS Features

Date(mm:dd:yy)	Tue,Jun 6 2002	Item Help
Time (hh:mm:ss)	11:26:10	Menu Level
IDE Primary Master	None	Change the day, month,year and century.
IDE Primary Slave		
IDE Secondary Master		
IDE Secondary Master	None	
Drive A	1.44M,3.5 in	
Drive B	None	
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**

This table shows the selections that you can make on the Main Menu.

<b>Item</b>	<b>Options</b>	<b>Description</b>
Date	Month DD YYYY	Set the system,date. Note that the 'Day' automatically changes when you set the data.
IDE Primary Master	Options are in its sub menu.	Press<Enter> to enter the sub menu of detailed.
IDE Primary Slave	Options are in its sub menu.	Press<Enter> to enter the sub menu of detailed.
IDE Secondary Master	Options are in its sub menu.	Press<Enter> to enter the sub menu of detailed.
IDE Secondary Slave	Options are in its sub menu.	Press<Enter> to enter the sub menu of detailed.
Drive A Drive B	None 360K,5.25in 1.2M,5.25in 720K,3.5in 1.44M,3.5in 2.88M,3.5in	Select the type of floppy disk drive installed in your system.
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	N/A	Displays the amount of conventional memory detected during boot up.
Extended Memory	N/A	Displays the amount of conventional memory detected during boot up.
Total Memory	N/A	Displays the total memory available in the system.

CMOS Setup Utility-Copyright (C) 1984-2001Award Software IDE  
Primary Master

IDE HDD Auto-Detection	Press Enter	Item Help
IDE Primary Master Access Mode	Auto	Menu Level
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

## 2.3 Advanced BIOS Features

Figure 3. Advanced BIOS Features

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### Advanced BIOS Features

Virus Warning	Disabled	Item Help
CPU L1 & L2 Cache	Enabled	
Quick Power On Self Test	Enabled	Menu Level
First Boot Device	Floppy	
Second Boot Device	HDD-0	Allows you to choose the
Third Boot Device	LS-120	VIRUS warning feature for IDE
Boot Other Device	Enabled	Hard Disk boot sector protection.
Swap Floppy Drive	Disabled	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.
Boot Up Floppy Seek	Disabled	
Boot Up NumLock Status	On	
Gate A20 Option	Fast	
Typematic Rate Setting	Disabled	
Typematic Rate (Chars/Sec)	6	
Typematic Delay (Msec)	250	
Security Option	Setup	
APIC Mode	Disabled	
MPS Version Control For OS	1.4	
OS Select For DRAM >64MB	Non-OS2	
Report No FDD For WIN 95	No	
EPA / (H/W Monitor) Show	H/W Monitor Show	

←→↑↓: 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**

This fields allow you to Enable or Disable the CPU's "Level 1 & Level 2" cache. Caching allows better performance.

**Enabled (default)**            Enabled cache.  
**Disabled**                      Disabled cache.

**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 Enable, BIOS will shorten or skip some check items during POST.

**Enabled (default)**            Enabled quick POST.  
**Disabled**                      Normal POST.

**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, Disabled.

**Boot Other Device**

**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**

Seek disk drives during boot up. Disabled speeds boot-up.

**The Choices:** Disabled(default), Enabled.

**Boot Up NumLock Status**

Select power on state for Numlock.

- On (default)**                      Numpad is number keys.  
**Off**                                      Numpad is arrow keys.

**Gate A20 Option**

Select if chipset or keyboard controller should control Gate A20.

- Normal**                                  A pin in the keyboard controller controls Gate A20.  
**Fast (default)**                      Lets chipset control Gate A20.

**Typematic Rate Setting**

- 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 limit access to the system and Setup, or just to Setup.

- System**                                  The system will not boot and access to Setup will be denied if the correct password is not entered in prompt.

**Setup (default)**                      The system will boot, but access to Setup will be denied if the correct password is not entered in prompt.

**APIC Mode**

**The Choices: Disabled(default), Enabled.**

**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.**

**Report No FDD For Window 95**

**No (default)**                      Assign IRQ6 For FDD.  
**Yes**                                      FDD Detect IRQ6 Automatically.

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

**The Choices: H/W Monitor Show(default), EPA Logo.**

## 2.4 Advanced Chipset Features

This section allows you to configure the system based on the specific 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 need to be altered. The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered that data was lost while using your system.

### Figure 4. Advanced Chipset Features

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#### Advanced Chipset Features

DRAM Timing Selectable	By SPD	Item Help
DRAM Latency Time	1.5	
Active to Precharge Delay	7	Menu Level
DRAM RAS# to CAS# Delay	3	
DRAM RAS# Precharge	3	
Memory Frequency For	Auto	
Buffer Strength Control	Press Enter	
System BIOS Cacheable	Enabled	
Video BIOS Cacheable	Disabled	
Memory Hole At 15M-16M	Disabled	
Delayed Transaction	Enabled	
Delay Prior to Thermal	16 Min	
AGP Aperture Size (MB)	64	
On-chip Video Windows	128MB	
On-chip Frame Buffer Size	8MB	

←→↑↓: 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

The DRAM timing is controlled by the DRAM Timing Registers. The Timings programmed into this register are dependent on the system design.

**The Choices: By SPD(default), Manual.**

**DRAM Latency Time**

<b>1.5 (default)</b>	Set DRAM latency Time to 1.5.
<b>2</b>	Set DRAM latency Time to 2.
<b>2.5</b>	Set DRAM latency Time to 2.5.
<b>3</b>	Set DRAM latency Time to 3.

**Note:**

If you are using “Nanya” brand DDR memory, please setting default is 2.

**Active to Precharge Delay**

<b>7 (default)</b>	Set DRAM Precharge Delay in 7.
<b>6</b>	Set DRAM Precharge Delay in 6.
<b>5</b>	Set DRAM Precharge Delay in 5.

**DRAM RAS# to CAS# Delay**

<b>3 (default)</b>	Set DRAM RAS# to CAS# delay 3 SCLKs.
<b>2</b>	Set DRAM RAS# to CAS# delay 2 SCLKs.

**DRAM RAS# Precharge**

<b>3 (default)</b>	Set DRAM RAS# Precharge Time to 3.
<b>2</b>	Set DRAM RAS# Precharge Time to 2.

**Memory Frequency For**

This option is support memory frequency auto detect.

**The Choices:** Auto(default), DDR 200, DDR 266.



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### Buffer Strength Control

CMD Strength Control	Auto	Item Help
DQ/DQS Strength Control	Auto	
CKE X16 Strength Control	Auto	Menu Level
CKE X8 Strength Control	Auto	
CS# X16 Strength Control	Auto	
CS# X8 Strength Control	Auto	
CK X16 Strength Control	Auto	
CKE X8 Strength Control	Auto	
RCVE out# Strength Control	Auto	

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

#### System BIOS Cacheable

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

**The Choices:** Enabled(default), Disabled.

#### Video RAM Cacheable

**Enabled** Enabled Video RAM Cacheable.

**Disabled (default)** Disabled Video RAM 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.

#### Delayed Transaction

**Enabled (default)** Slow speed ISA device in system.

**Disabled** Disabled.

**Delay Prior to Thermal**

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

**AGP Aperture Size (MB)**

**64 (default)**

AGP Graphics Aperture Size  
is 64 MB.

**The Choices:** 4M, 8M, 16M, 32M, 128M, 256M.

**On-chip Video Windows**

**The Choices:** 128MB(default), 64MB, Disabled.

**On-chip Frame Buffer Size**

**The Choices:** 8MB(default), 1MB.

## 2.5 Integrated Peripherals

### i • Figure 5. Integrated Peripherals

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#### Integrated Peripherals

On-Chip Primary PCI IDE	Enabled	Item Help
IDE Primary Master PIO	Auto	
IDE Primary Slave PIO	Auto	
IDE Primary Master UDMA	Auto	Menu Level
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	
USB Controller	Enabled	
USB Keyboard Support	Disabled	
AC97 Audio	Auto	
AC97 Modem	Auto	
Init Display First	Onboard/AGP	
Onboard AC97 Codec	Enabled	
IDE HDD Block Mode	Enabled	
Power On Function	Button Only	
KB Power On Password	Enter	
Hot Key Power On	Ctrl-F1	
Onboard FDC Controller	Enabled	
Onboard Serial Port 1	Auto	
Onboard Serial Port 2	Auto	
UART Mode Select	Normal	
RxD,TxD Active	Hi,Lo	
IR Transmission Delay	Enabled	
UR2 Duplex Mode	Half	
Use IR Pins	IR/Rx2Tx2	
Onboard Parallel Port	378/IRQ7	
Parallel Port Mode	SPP	
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

#### On-Chip Primary PCI IDE

**Enabled (default)**

Enabled onboard 1st channel  
IDE port.

**Disabled**

Disabled onboard 1st channel  
IDE port.

---

<b>IDE Primary Master PIO(for onboard IDE 1st channel)</b>	
<b>Auto (default)</b>	BIOS will automatically detect the IDE HDD Accessing mode.
<b>Mode 0~4</b>	Manually set the IDE Accessing mode.
<b>IDE Primary Slave PIO(for onboard IDE 2nd channel)</b>	
<b>Auto (default)</b>	BIOS will automatically detect the IDE HDD Accessing mode.
<b>Mode 0~4</b>	Manually set the IDE Accessing mode.
<b>IDE Primary Master UDMA</b>	
<b>Auto (default)</b>	BIOS will automatically detect the IDE HDD Accessing mode.
<b>Disabled</b>	Disabled.
<b>IDE Primary Slave UDMA</b>	
<b>Auto (default)</b>	BIOS will automatically detect the IDE HDD Accessing mode.
<b>Disabled</b>	Disabled.
<b>On-Chip Secondary PCI IDE</b>	
<b>Enabled (default)</b>	Enabled onboard 2nd channel IDE port.
<b>Disabled</b>	Disabled onboard 2nd channel IDE port.
<b>IDE Secondary Master PIO(for onboard IDE 1st channel)</b>	
<b>Auto (default)</b>	BIOS will automatically detect the IDE HDD Accessing mode.
<b>Mode 0~4</b>	Manually set the IDE Accessing mode.
<b>IDE Secondary Slave PIO(for onboard IDE 2nd channel)</b>	
<b>Auto (default)</b>	BIOS will automatically detect the IDE HDD Accessing mode.
<b>Mode 0~4</b>	Manually set the IDE Accessing mode.

---

**IDE Secondary Master UDMA****Auto (default)**

BIOS will automatically detect the IDE HDD Accessing mode.

**Disabled**

Disabled.

**IDE Secondary Slave UDMA****Auto (default)**

BIOS will automatically detect the IDE HDD Accessing mode.

**Disabled**

Disabled.

**USB Controller****Enabled (default)**

Enabled USB Controller.

**Disabled**

Disabled USB Controller.

**USB Keyboard Support****Enabled**

Enabled USB Keyboard Support.

**Disabled (default)**

Disabled USB Keyboard Support.

**AC 97 Audio****Auto(default)**

BIOS will automatically detect onboard Audio.

**Disabled**

Disabled.

**AC 97 Modem****Auto(default)**

BIOS will automatically detect onboard Modem.

**Disabled**

Disabled.

**Init Display First****PCI Slot**

Set Init Display First to PCI

Slot.

**Onboard/AGP(default)**

Set Init Display First to onboard AGP.

**Onboard AC97 Codec**

The Choices: Enabled(default), Disabled.

**IDE HDD Block Mode**

**Enabled(default)** Enabled IDE HDD Block Mode.  
**Disabled** Disabled IDE HDD Block Mode.

**Power On Function**

**Password** Enter from 1 to 7 characters to set the Keyboard Power On Password.  
**Hot Key** Hot Key.  
**Mouse Left** Mouse Left.  
**Mouse Right** Mouse Right.  
**Any Key** Any Key.  
**Button Only (default)** Button Only.  
**Keyboard 98** If your keyboard has an Owner key button, you can press the key to power on your system.

**KB Power On Password**

**Enter** Enter from 1 to 7 characters to set the keyboard Power On Password.

**Hot Key Power On**

**Ctrl-F1 (default)** First you must choose the Power On by Hot Key function then Enter from 1 to 8 characters to set the Hot Key Power On your system.  
**Ctrl-F2**  
**Ctrl-F3**  
**Ctrl-F4**  
**Ctrl-F5**  
**Ctrl-F6**  
**Ctrl-F7**  
**Ctrl-F8**

**Onboard FDC Controller**

<b>Enabled (default)</b>	Enabled onboard FDC Controller.
<b>Disabled</b>	Disabled onboard FDC Controller.

**Onboard Serial Port1**

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

**The Choices:** Auto(default), (3F8/IRQ4), (2F8/IRQ3), (3E8/IRQ4), (2E8/IRQ3), Disabled.

**Onboard Serial Port 2**

<b>Auto (default)</b>	BIOS will automatically setup the Serial Port 2 address.
<b>3F8/IRQ4</b>	Enabled onboard Serial Port 2 and address is 3F8.
<b>2F8/IRQ3</b>	Enabled onboard Serial Port 2 and address is 2F8.
<b>3E8/IRQ4</b>	Enabled onboard Serial Port 2 and address is 3E8.
<b>2E8/IRQ3</b>	Enabled onboard Serial Port 2 and address is 2E8.
<b>Disabled</b>	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, SCR, ASKIR.

**UR2 Duplex Mode**

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.

**ECP Mode Use DMA**

**The Choices:** 3(default), 1.

**Onboard Parallel Port**

This item allows you to select the I/O address with which to access the onboard parallel port controller.

**Disabled.**

**378/IRQ7. (default)**

**278/IRQ5.**

**3BC/IRQ7.**

**Parallel Port Mode**

**SPP (default)**

Using Parallel port as Standard Parallel Port.

**EPP**

Using Parallel port as Enhanced Parallel Port.

**ECP**

Using Parallel port as Extended Capabilities Port.

**ECP/EPP**

Using Parallel port as ECP/EPP mode.

**PWRON After PWR-Fail**

This option will determine how the system will power on after a power failure.

**The Choices: Off**(default), On, Former-Str.

**Game Port Address)**

**201 (default)**

Set onboard game port to 201.

**209**

Set onboard game port to 209.

**Disabled**

Disabled.

**Midi Port Address**

**290**

Set Midi Port address to 290.

**300**

Set Midi Port address to 300.

**330 (default)**

Set Midi Port address to 330.

**Disabled**

Disabled.

**Midi Port IRQ**

**10 (default)**

Set Midi Port IRQ to 10.

**5**

Set Midi Port IRQ to 5.



## 2.6 Power Management Setup

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

### Figure 6. Power Management Setup

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#### Power Management Setup

ACPI Function	Enabled	Item Help
ACPI Suspend Type	S1(POS)	
Run VGA BIOS if S3 Resume	Auto	Menu Level
Power Management	User Define	
Video Off Method	DPMS	
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	
Wake-Up by PCI Card	Disabled	
Power On by Ring	Disabled	
Wake up on LAN	Disabled	
USB KB Wake-up From S3	Disabled	
Resume by Alarm	Disabled	
Data (of Month) Alarm	0	
Time (of hh:mm:ss) Alarm	0 0 0	
**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

### ACPI Function

This item display status of the Advanced Configuration and Power Management (ACPI).

**ACPI Suspend Type**

The item allows you to select the suspend type under ACPI operating system.

<b>S1(POS) (default)</b>	Power on Suspend.
<b>S3(STR)</b>	Suspend to RAM.
<b>S1&amp;S3</b>	

**Power Management**

This option allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

**The Choices:** User Define (default), Min Saving, Max Saving.

**Video Off Method**

This determines the manner in which the monitor is blanked.

<b>V/H SYNC+Blank</b>	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
<b>Blank Screen</b>	This option only writes blanks to the video buffer.
<b>DPMS Support (default)</b>	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:** Yes(default), No.

**Suspend Type**

<b>Stop Grant (default)</b>	Set Suspend type is stop grant.
<b>PwrOn Suspend</b>	Set Suspend type is Power on Suspend.

**Modem Use IRQ**

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

**3 (default)**  
4/5/7/9/10/11/NA.

**Suspend Mode**

<b>Disabled (default)</b>	Disabled.
<b>1 min - 1 Hour</b>	Set the timer to enter Suspend Mode.

**HDD Power Down**

By default, this is “Disabled”, meaning that no matter the mode of the rest of system, the hard drive will remain ready. Otherwise, you have a range of choices from 1 to 15 minutes or Suspend. This means that you can select to have your hard disk drive be turned off after a selected number of minutes or when the rest of the system goes into a suspend mode.

<b>Disabled (default)</b>	Disabled.
<b>1 - 15 mins</b>	Enabled.

**Soft-Off by PWR-BTTN**

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has “hung”.

**The Choices:** Instant-Off(default), Delay 4 Sec.

**Wake-Up by PCI Card**

<b>Enabled</b>	Enabled.
<b>Disabled (default)</b>	Disabled.

---

<b>Power On By Ring</b>	
<b>Enabled</b>	Enabled.
<b>Disabled (default)</b>	Disabled.
<b>Wake up on LAN</b>	
<b>Disabled (default)</b>	Disabled.
<b>Enabled</b>	Enabled.
<b>Resume by Alarm</b>	
<b>Disabled (default)</b>	Disabled.
<b>Enabled</b>	Enabled.
<b>Primary IDE 0/1</b>	
<b>Disabled (default)</b>	Disabled.
<b>Enabled</b>	Enabled monitor Primary IDE 0/1 for Green event.
<b>Secondary IDE 0/1</b>	
<b>Disabled (default)</b>	Disabled.
<b>Enabled</b>	Enabled monitor Secondary IDE 0/1 for Green event.
<b>FDD, COM, LPT Port</b>	
<b>Disabled (default)</b>	Disabled.
<b>Enabled</b>	Enabled monitor FDD, COM, LPT Port.
<b>PCI PIRQ[A-D]#</b>	
<b>Disabled (default)</b>	Ignore PCI PIRQ[A-D]# Active.
<b>Enabled</b>	Monitor PCI PIRQ[A-D]# Active.

## 2.7 PnP/PCI Configurations

This section describes configuring 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 its own special components. This section covers some very technical items and it is strongly recommended that only experienced users make any changes to the default settings.

### • Figure 7. PnP/PCI Configurations

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#### PnP/PCI Configurations

Reset Configuration Data	Disabled	Item Help
Resources Controlled By IRQ Resources	Auto(ESCD) Press Enter	Menu Level
PCI/VGA Palette Snoop	Disabled	When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt

←→↑↓: 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 resources from conflict. Every peripheral device has a node, which is called ESCD. This node records which resources are assigned to it. The system needs to record and update ESCD to the memory locations. These locations (4K) are reserved at the system BIOS. If Disabled (Default) is chosen, the system's 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 set to the "Disabled" mode.

IRQ3	assigned to: PCI PnP
IRQ4	assigned to: PCI PnP
IRQ5	assigned to: PCI PnP
IRQ6	assigned to: PCI PnP
IRQ7	assigned to: PCI PnP
IRQ8	assigned to: PCI PnP
IRQ9	assigned to: PCI PnP
IRQ10	assigned to: PCI PnP
IRQ11	assigned to: PCI PnP
IRQ12	assigned to: PCI PnP
IRQ13	assigned to: PCI PnP
IRQ14	assigned to: PCI PnP
IRQ15	assigned to: PCI PnP

The above settings will be shown on the screen only if "Manual" is chosen for the resources controlled by function.

**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 there are no IRQ/DMA and I/O port conflicts.

**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.

<b>Disabled</b> (default)	Function Disabled.
<b>Enabled</b>	Function Enabled.

## 2.8 PC Health Status

**Figure 8. PC Health Status**

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### PC Health Status

Shutdown Temperature	75 °C / 167 °K	Item Help
Vcore		
1.5V		
3.3V		
5V		
12V		
-12V		
-5V		
5VSB		
Voltage Battery		
System Temp		
CPU Temp		
FAN 1 Speed		
FAN 2 Speed		
FAN 3 Speed		

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

**Current Voltage(V) CPU Vcore/ +/-12V/+5V/5VSB/1.5V/3.3V/5V**  
 Detect system's voltage status automatically.

**Current CPU/System Temperature (°C/°K)**  
 This field displays the current CPU temperature,if your computer contains a monitoring system.

**Current CPUFan1 / CPUFan2 / CPUFan3 Speed**  
 These field displays the current speed of up to System Fans,if your computer contains a monitoring system.



**Shutdown Temperature(°C/°K)****Disabled**

Disabled.

**60°C/140°K**Monitor CPU Temp.at 60°C/  
140°K, if Temp.>60°C/140°K  
system will automatically  
power off.**65°C/149°K**Monitor CPU Temp.at 65°C/  
149°K, if Temp.>65°C/149°K  
system will automatically  
power off.**70°C/158°K**Monitor CPU Temp.at 70°C/  
158°K, if Temp.>70°C/158°K  
system will automatically  
power off.**75°C/167°K(default)**Monitor CPU Temp.at 75°C/  
167°K, if Temp.>75°C/167°K  
system will automatically  
power off.

## 2.9 Frequency / Voltage Control

### i - Figure 9. Frequency / Voltage Control

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#### Frequency / Voltage Control

CPU Clock Ratio	8X	Item Help
Auto Detect PCI/CLK	Disabled	Menu Level
Spread Spectrum	Disabled	

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

#### CPU Clock Ratio

This option will not be shown if you are using a CPU with the locked ratio.

**The Choices:** X8~X50.

#### Auto Detect PCI CLK

This item allows you to enable/disable auto detect DIMM / PCI CLOCK.

**The Choices:** Disabled(default), Enabled.

#### Spread Spectrum

This function is designed for the EMI test only.

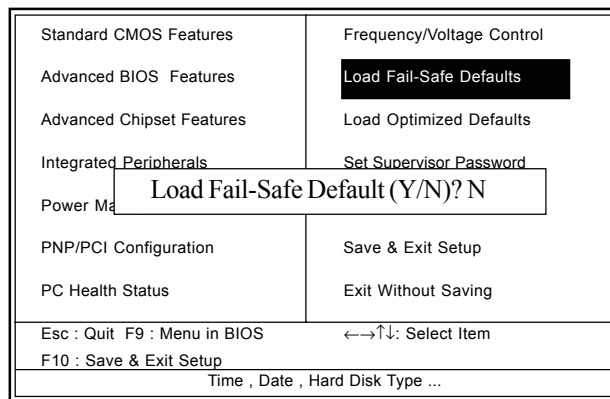
**The Choices:** Disabled(default), Enabled.

## 2.10 Load Fail-Safe Defaults

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

**Figure 10. Load Fail-Safe Defaults**

CMOS Setup Utility-Copyright (C) 1984-2001 Award Software



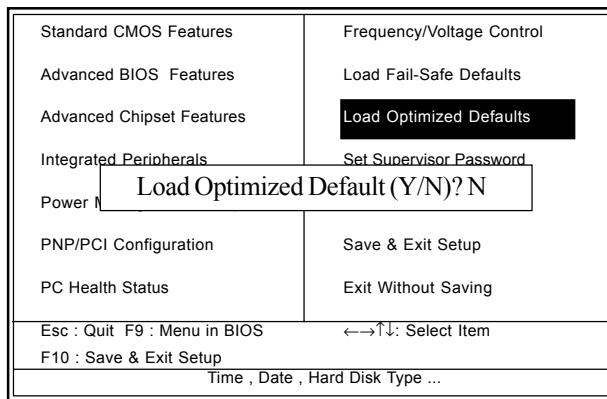
Pressing 'Y' loads the default values that are factory settings for optimal performance of system operations.

## 2.11 Load Optimized Defaults

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

**Figure 11. Load Optimized Defaults**

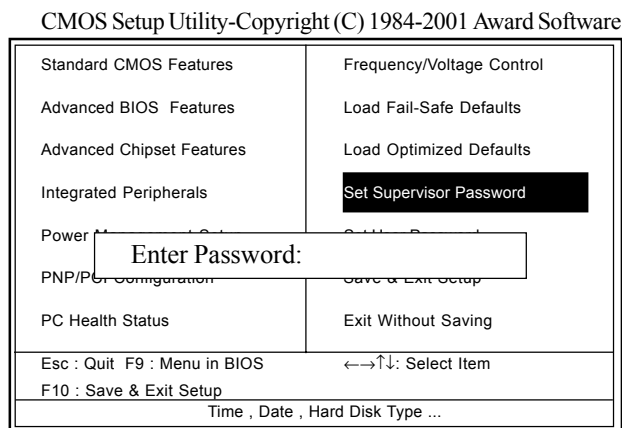
CMOS Setup Utility-Copyright (C) 1984-2001 Award Software



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

## 2.12 Set Supervisor / User Password

**Figure 12. 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

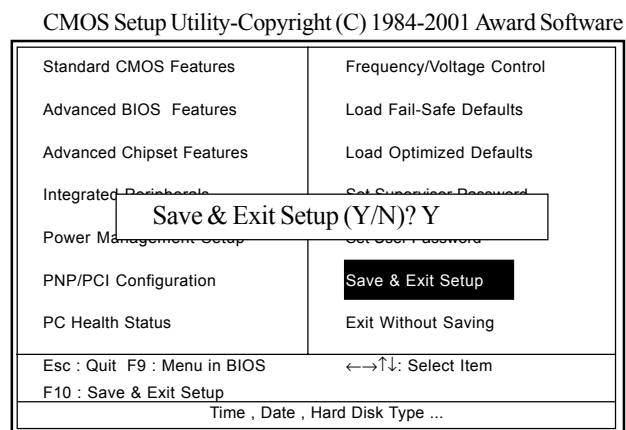
Type a password, up to eight characters, and press <Enter>. The password you type now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <ESC> to abort the selection and not enter a password. 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 and you can enter setup freely.

**Password Disabled**

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.

## 2.13 Save & Exit Setup

Figure 13. Save & Exit Setup

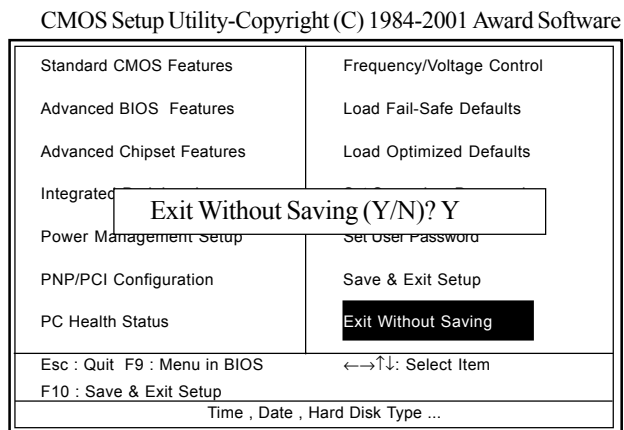


Typing “Y” will quit the Setup Utility and save the user setup value to RTC CMOS RAM.

Typing “N” will return to the Setup Utility.

## 2.14 Exit Without Saving

Figure 14. 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

There are motherboard drivers and utilities included in the disc attached. You don't have to install all of them for booting your system. But after you finish the hardware installation, you have to install your operation system (such as windows 98), you are able to install any drivers or utilities after then.

**Note:** Please follow the recommended procedure after install Windows 98/ME/XP/2000.

## 3.1 Auto-run Menu

You can use the auto-run menu in this driver CD. Then choose the utility or driver and select model name.



### 3.2 Installing Intelinf Driver

This item, INTEL CHIPSET INSTALLATION, is for you to install the software of Intel Chipsets also enables the Plug-n-Play INF.



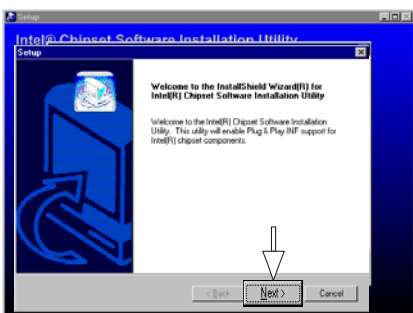
(1)  
Click "Driver" Item.



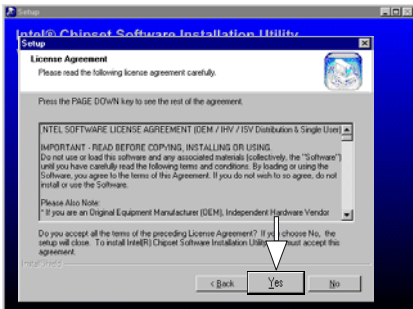
(2)  
Click "Chipset" Item.



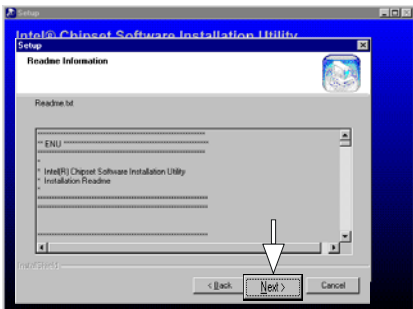
(3)  
Click "Intel Chipsets Installation" Item.



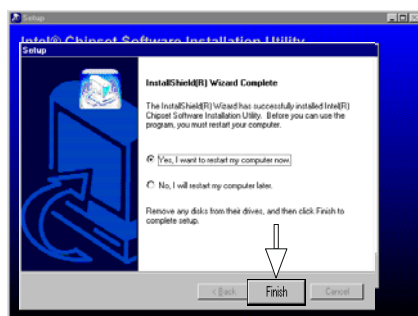
(4)  
Click "Next".



(5)  
Click "Yes".



(6)  
Click "Next".



(7)  
Click "Finish".

**Note:**  
Install the Intel INF Driver before install the Intel Application Accelerator Driver.

### 3.3 Installing Application Accelerator

This item is for installing the Intel Application Accelerator for Microsoft Windows 98/98SE/ME/NT4.0/2000/XP. And the program is designed to improve performance of the storage sub-system and overall system performance.

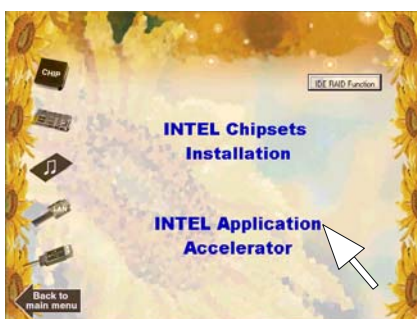
**We recommend that:**  
If your operating system is Windows 98, 98SE or NT4.0, please install the Ultra Driver. Also, please do not use the IAA and Ultra Driver together.



(1)  
Click "Driver" Item.



(2)  
Click "Chipset" Item.

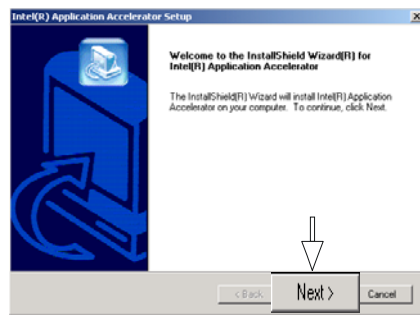


(3)  
Click "Intel Application Accelerator" Item.

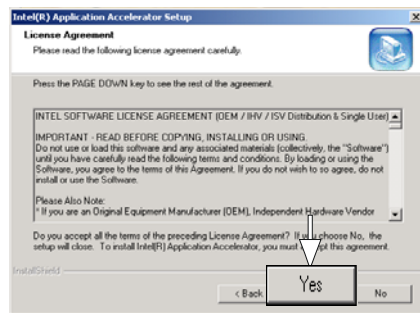


(4)  
You will see a pop-up dialogue of IAA installation.

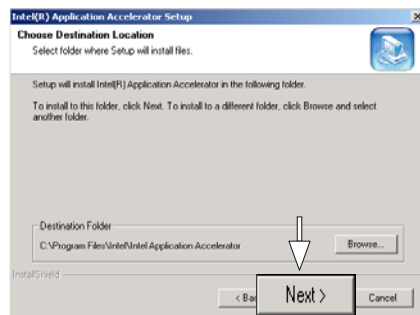




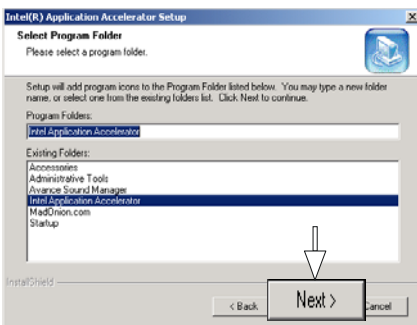
(5)  
Click "Next".



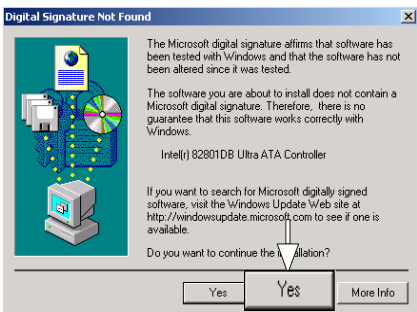
(6)  
Click "Yes".



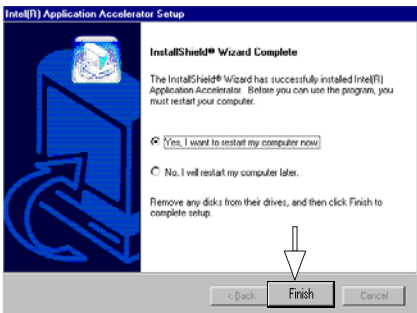
(7)  
Click "Next".



(8)  
Click "Next".



(9)  
Click "Yes".



(10)  
Click "Finish".

### 3.4 Installing Audio Driver

This motherboard comes with an AC97 CODEC and the sound controller is in Intel South Bridge chipset. You can find the sound driver from this Auto-run menu.



(1)  
Click "Driver" Item.



(2)  
Click "Audio" Item.



(3)  
Click "ALC101" Item.



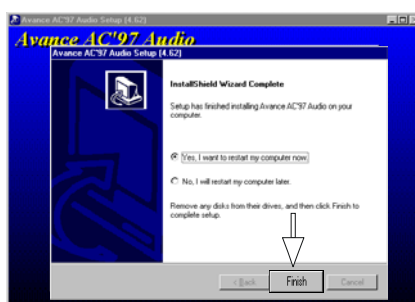


**Chapter 3**

**Driver Installation**



**(4)**  
Click "Next".



**(5)**  
Click "Finish".

### 3.5 Installing VGA Driver

Intel Brockdale-G chipset integrated a 2D/3D graphics acceleration.



(1)  
Click "Driver" Item.



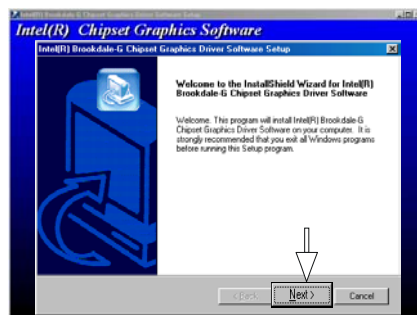
(2)  
Click "VGA" Item.



(3)  
Click "845G Graphic"  
Item.



(4)  
Select your O.S.



(5)  
Click "Next".



(6)  
Click "Yes".

### 3.6 Installing LAN Driver (Optional)

When your mainboard comes with the Realtek® RT8100 LAN controller, you must install the Realtek® LAN driver to support the LAN function. In some operating systems like Windows 98, Windows 2000, Windows NT the provided CD will auto-run while you insert the driver CD into the CD-ROM drive.



(1)  
Click  
"LAN" Item.

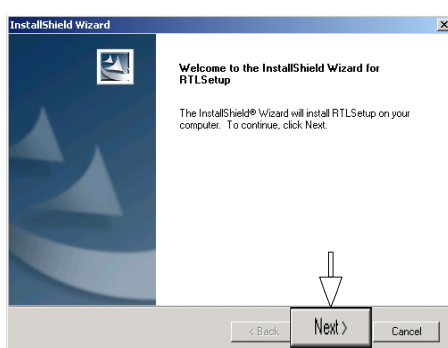


(2)  
Select your O.S.

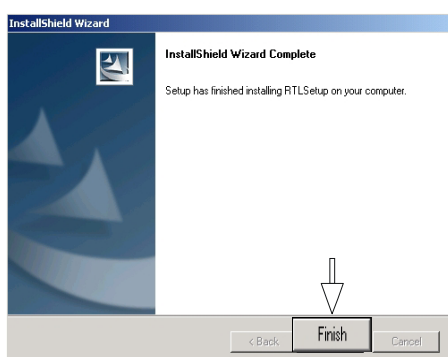


**Chapter 3**

**Driver Installation**



**(3)**  
Click "Next".

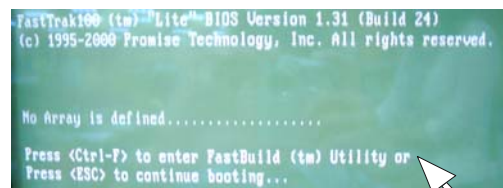


**(4)**  
Click "Finish".

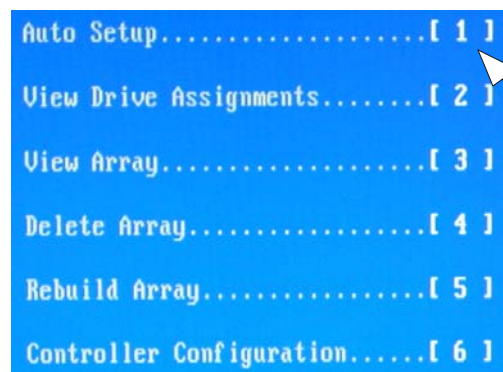
### 3.7 Installing RAID Driver (Optional)

How to install Win2000 RAID driver, please follow the procedure below to set up RAID driver.

1. Boot your system. If this is the first time you boot the Promise onboard BIOS, it will display the following screen.



2. Press <Ctrl-F> keys to display the FastBuild (tm) Utility Main Menu.
3. Press "1" to display Auto Setup Menu below. This is the fastest and easiest method to create your IDE RAID.

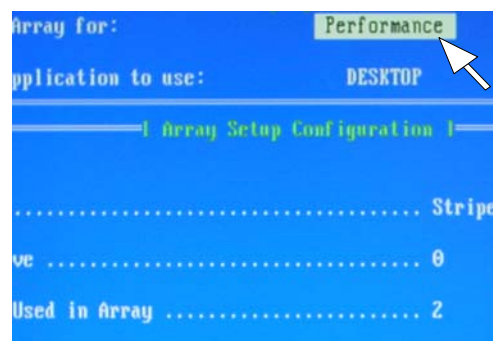


#### Creating Arrays Automatically

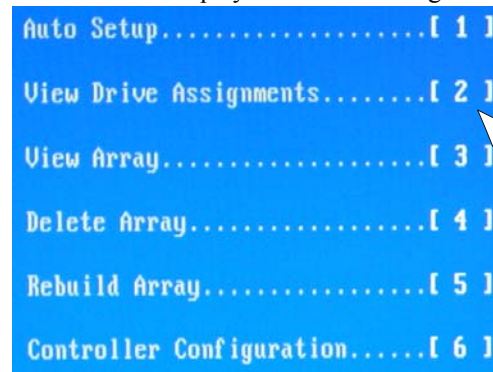
The Auto Setup <1> selection from the Main Menu can intuitively help create your disk array. It will assign all available drives appropriate for the disk array you are creating. After setting, use Ctrl-Y to Save selections. FastBuild will automatically build the array.

**Optimize Array For**

Select which you want, performance (RAID 0) or security (RAID 1) under the "Optimize Array For".

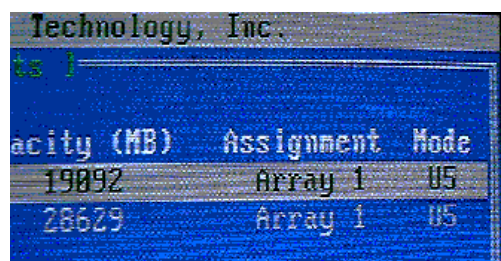


4. Press "2" to display View Drive Assignments Menu below.



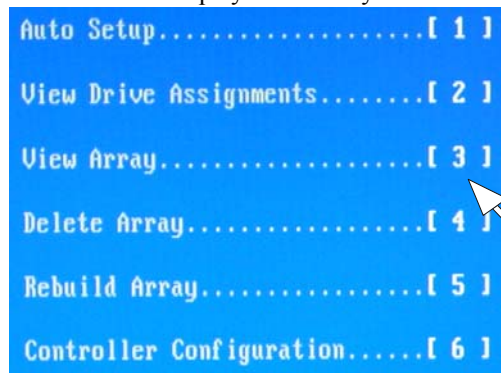
**View Drive Assignments**

The View Drive Assignments <2> option in the Main displays which drives are assigned to a disk arrays or are unassigned.



Capacity (MB)	Assignment	Mode
19892	Array 1	05
28629	Array 1	05

5. Press "3" to display View Array Menu below.



Auto Setup.....	[ 1 ]
View Drive Assignments.....	[ 2 ]
View Array.....	[ 3 ]
Delete Array.....	[ 4 ]
Rebuild Array.....	[ 5 ]
Controller Configuration.....	[ 6 ]

6. Then you will find the display below, if you select "performance" (RAID0).



Array No	RAID Mode	Total Drv
Array 1	Stripe	2
Array 2	-----	-----
Array 3	-----	-----
Array 4	-----	-----



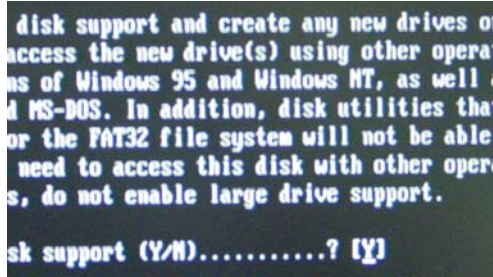
7. Save & reboot, then go into the BIOS setting to select the first boot device "Floppy" from "Advanced BIOS features" as follow.

Internal Cache	[Enabled]
External Cache	[Enabled]
L2 Cache ECC Checking	[Enabled]
Processor Number Feature	[Enabled]
Check Power On Self Test	[Enabled]
ATA100 Chip Boot Device	[ATA100]
First Boot Device	[Floppy]
Second Boot Device	[HDD-0]
Third Boot Device	[LS120]
Fourth Boot Device	[Disabled]
Use Floppy Drive	[Disabled]
Fast Up Floppy Seek	[Enabled]

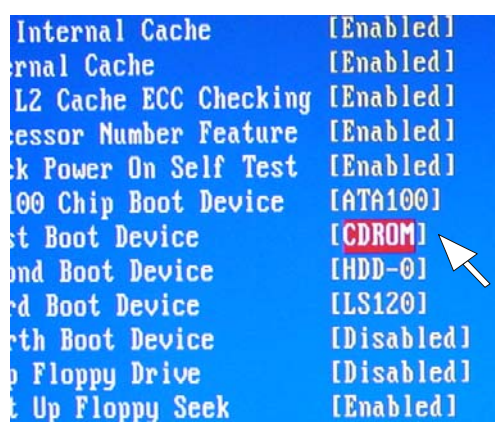
8. After reboot the system by bootable disk, modifying the "CONFIG.SYS" of the bootable disk as below and save it.

```
[CD]
device=himem.sys /testmem:off
device=oakcdrom.sys /D:miscd001
device=btosm.sys
device=flashpt.sys
device=btcdrom.sys /D:miscd001
device=aspi2dos.sys
device=aspi8dos.sys
device=aspi4dos.sys
device=aspi8u2.sys
device=aspid.sys /D:miscd001
DEVICE=FASTTRACK.SYS
```

9. On the other hand, copying the files of "MB\FASTTRACK\FT100DRIVER\TXTSETUP.OEM&FASTTRACK" as well as the folder of "Win2000" from the attached CD to the other FDD.
10. Using the modified disk to boot the PC.
11. Running FDISK.

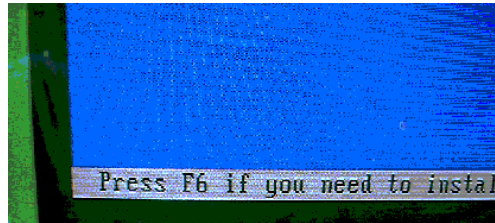


12. Separating and allocating the required volume of disk, and reboot the system then Format C:.
13. After that restart the system and set the CMOS from "Advanced BIOS features" as following chart.

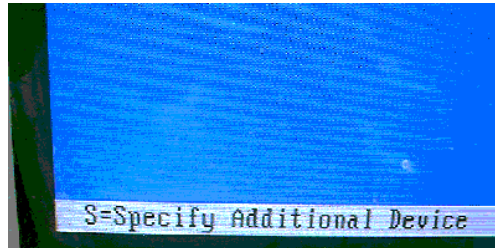
A screenshot of a BIOS boot device selection screen. The background is blue with white text. A mouse cursor is pointing at the 'CDROM' option in the 'First Boot Device' row. The list of options includes: Internal Cache [Enabled], External Cache [Enabled], L2 Cache ECC Checking [Enabled], Processor Number Feature [Enabled], Quick Power On Self Test [Enabled], First Boot Device [CDROM], Second Boot Device [HDD-0], Third Boot Device [LS120], Fourth Boot Device [Disabled], Floppy Drive [Disabled], and Hard Up Floppy Seek [Enabled].

Internal Cache	[Enabled]
External Cache	[Enabled]
L2 Cache ECC Checking	[Enabled]
Processor Number Feature	[Enabled]
Quick Power On Self Test	[Enabled]
First Boot Device	[CDROM]
Second Boot Device	[HDD-0]
Third Boot Device	[LS120]
Fourth Boot Device	[Disabled]
Floppy Drive	[Disabled]
Hard Up Floppy Seek	[Enabled]

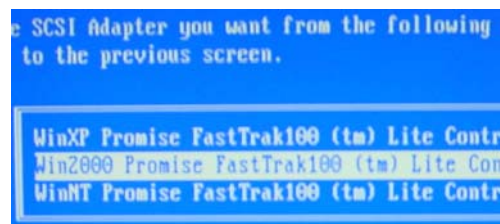
14. Input the Win2000 CD in CD Drive and boot the system from CD-ROM. Also, put the FDD that include the "FastTrack" & "TXTSETUP" files and "WIN2000" folder, then press F6 button as soon as the following message appeared.



15. After that, continue to install OS procedures.



16. Press "S".



17. Selecting "Win2000 Promise..." then go back to install Win2000 continuously.



### 3.8 Installing USB 2.0 Device

Please read carefully the pop-up text file after click the above item. The text file will notify you how to install your USB devices in your O.S. completely.



(1)  
Click the "USB 2.0 ICH4 INF Package".

**Note:** Please note that this USB 2.0 is only available in Win 2000 and Win XP.