
Introduction

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The MS6364 MICRO ATX mainboard is a high-performance computer mainboard based on Intel® 810E2 chipset. The Intel® 810E2 chipset enhances the performance of the first generation Integrated Graphics chipset designed for the Intel® Celeron™ processor and Intel® Pentium !!! processor. The Intel® 810E2 chipset architecture also enables a new security and manageability infrastructure through a Firmare Hub Flash BIOS component.

The Intel® 810E2 chipset contains two core components:

- Intel® 82810E Graphics and Memory Controller Hub (GMCH)
- Intel® 82801BA I/O Controller Hub 2 (ICH2)

The GMCH integrates a 66/100/133 MHz, P6 family system bus controller, integrated 2D/3D graphics accelerator, 100Mhz SDRAM controller and a high-speed hub interface for communication with the I/O Controller Hub (ICH2). The ICH2 integrates an Ultra ATA/100 controller, 2 USB host controller with a total of 4 ports, LPC interface controller, FWH Flash BIOS interface controller, PCI interface controller, AC'97 digital controller and a hub interface for communication with the GMCH.

This chapter contains the following topics:

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Chapter 1

Mainboard Specifications

CPU

- Support Socket370 for Intel® Celeron™/Pentium III(FC-PGA) processor.
- Support 433MHz, 500MHz, 533MHz, 550MHz, 1GHz or higher

Chipset

- Intel® 810E (GMCH) chipset. (421 BGA)
 - Integrated Graphics Controller
 - Intel DDM+ Architecture
 - SDRAM memory Independent of System Bus
- Intel® ICH2 chipset. (241 BGA)
 - AC'97 Controller Integrated
 - 2 full IDE channels, up to ATA100
 - Low pin count interface for SIO

Front Side Bus (FSB)

- 66/100/133MHz clocks are supported.

Main Memory

- Support two 168-pin DIMM sockets.
- Support a maximum memory size of 512MB SDRAM.

Slots

- One CNR (Communication Network Riser) slot
- Three 32-bit Master PCI Bus slots and one 16-bit ISA bus slot.
- Support 3.3v/5v PCI bus Interface.

On-Board IDE

- An IDE controller on the ICH2 chipset provides IDE HDD/CD-ROM with PIO, Bus Master and Ultra DMA/100 operation modes.
- Can connect up to four IDE devices.

Video

- GMCH chip integrated
- 2D/3D Graphics
- Onboard 4MB Display Cache (optional)

On-Board Peripherals

- On-Board Peripherals include:
 - 1 floppy port supports 2 FDD with 360K, 720K, 1.2M, 1.44M and 2.88Mbytes.
 - 1 serial port (COMA)
 - 1 parallel port supports SPP/EPP/ECP mode
 - 2 USB ports
 - 1 IrDA connector for SIR.
 - 1 VGA port

Audio

- AC97
- ICH chip integrated

BIOS

- The mainboard BIOS provides “Plug & Play” BIOS which detects the peripheral devices and expansion cards of the board automatically.
- The mainboard provides a Desktop Management Interface(DMI) function which records your mainboard specifications.

Dimension

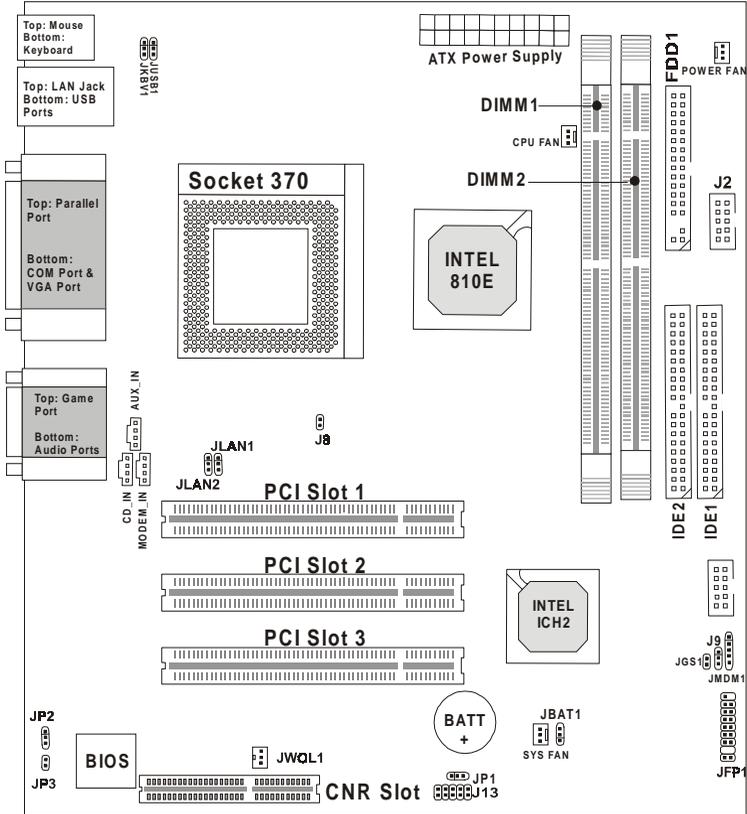
- Micro ATX Form Factor: 24cm x 20cm

Mounting

- 6 mounting holes.

Chapter 1

Mainboard Layout



MS-6364 MICRO ATX Mainboard

Quick Components Guide

Component	Function	Reference
Socket 370	Installing CPU	p. 2-2
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Chapter 1

Key Features

- PC99 Color Connector
- Micro ATX Form Factor
- Audio/Video Chip Integrated
- PC Alert System Hardware Monitor
- Support DMI(Desktop Management Interface) through BIOS
- TOP Tech. III(Thermal Overheat Protection Technology) Optional
- LAN Wake Up Function
- Modem (Internal/External) Ring Wake Up Function
- Suspend to RAM (optional)
- PTI (PanelLink TV-Out Interface)

MSI Special Features

The MSI special features are designed by MSI R&D which are only available in MSI mainboards. The 6356 mainboard is equipped with PC Alert™ III, T.O.P Tech™ III and D-LED™.

T.O.P TechIII™

The T.O.P Tech™ is an extended sensing device that can 100% accurately detect the CPU's temperature. You can see the temperature on BIOS setup menu. The PC Alert™ also can provide the information.



CPU temperature on Setup menu

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
PC Health Status

<pre> Current CPU Temp. Current System Temp. Current CPUFAN Speed Current SYSFAN Speed Vcore 2.5V 3.3V 5V 12V </pre>	<pre> Item Help ----- Menu Level > </pre>
<pre> ↑ ↓ → ← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults </pre>	

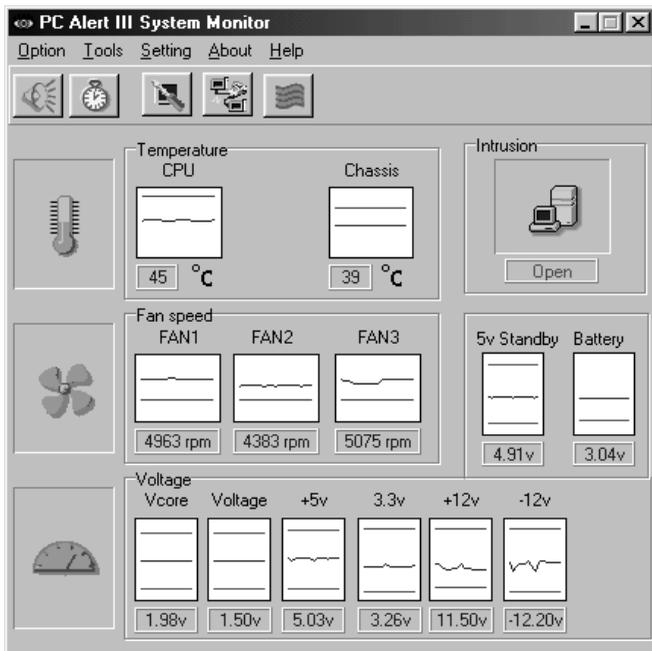
Chapter 1

PC Alert™ III

The PC Alert™ III is a utility you can find in the CD-ROM. The utility is just like your PC doctor that can detect the following PC hardware status during real time operation:

- * monitor CPU & system temperature
- * monitor fan speed
- * monitor system voltage
- * monitor chassis intrusion

If one of the items above is abnormal, the program main screen will be immediately shown on the screen, with the abnormal item highlighted in red. This will continue to be shown until user disables warning.





Features:

- Network Management
 - Monitoring & remote control
- Basic System Utilities
 - Scandisk & Defragment to maintain your HDD
- 3D Graphics Design
 - Enables a more friendly user interface
- Software Utilities
 - SoftCooler Optimized Cooling
 - Doctor Y2K diagnoses Y2K problems
 - BusRacing function adjusts F.S.B under Windows 95/98
 - MoSpeed speeds up your modem transmission

Chapter 1

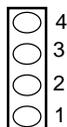
D-LED™

The D-LED™ uses graphic signal display to help you understand your system. There are 4 LEDs embedded in the mainboard which provides up to 16 combination of signals to debug system. The 4 LEDs can debug all problems that fail the system, such as VGA, RAM or other failures. This special feature is very useful for the overclocking users. The users can use this feature to detect if there are any problems or failures while doing the overclocking.



● Red

○ Green



D-LED	Description
1 2 3 4 	System Power on -The D-LED will hang here if the processor is damaged or not installed properly.
	Early Chipset Initialization.
	Memory Detection Test -Testing onboard memory size. The D-LED will hang if the memory module is damaged or not installed properly.
	Decompressing BIOS image to RAM for fast booting.
	Initializing Keyboard Controller.
	Testing VGA BIOS -This will start writing VGA sign-on message to the screen.

	<p>Processor Initialization - This will show information regarding the processor (like brand name, system bus, etc...)</p>
	<p>Testing RTC (Real Time Clock)</p>
	<p>Initializing Video Interface - This will start detecting CPU clock, checking type of video onboard. Then, detect and initialize the video adapter.;</p>
	<p>BIOS Sign On - This will start showing information about logo, processor brand name, etc....</p>
	<p>Testing Base and Extended Memory - Testing base memory from 240K to 640K and extended memory above 1MB using various patterns.</p>
	<p>Assign Resources to all ISA.</p>
	<p>Initializing Hard Drive Controller - This will initialize IDE drive and controller.</p>
	<p>Initializing Floppy Drive Controller - This will initializing Floppy Drive and controller.</p>
	<p>Boot Attempt - This will set low stack and boot via INT 19h.</p>
	<p>Operating System Booting</p>

Chapter 1

Hardware Setup

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This chapter provides you with the information about hardware setup procedures. While doing the installation, be careful in holding the components and follow the installation procedures. For some components, if you install in the wrong orientation, the components will not work properly.

Besides, please use a grounded wrist strap before handling computer components. Static electricity may damage the components.

This chapter contains the following topics:

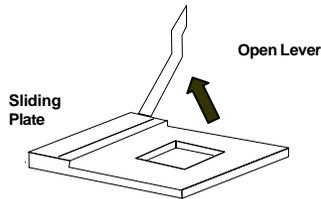
Central Processing Unit (CPU)	2-2
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Central Processing Unit: CPU

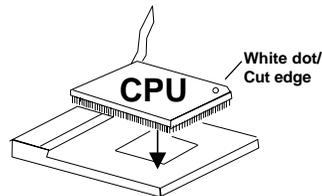
The mainboard supports Intel® Celeron™ / Pentium!!! (FC-PGA) processors. The mainboard uses a CPU socket called Socket 370 for easy CPU installation. Make sure that the CPU has a Heat Sink and a cooling fan attached to prevent overheating. If you do not find the Heat Sink and cooling fan, contact your dealer or purchase them before turning on the computer.

CPU Installation Procedures

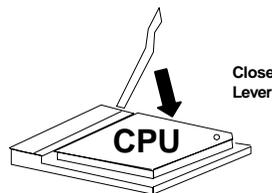
1. Pull the lever sideways away from the socket. Then, raise the lever up to a 90-degree angle.



2. Look for the white dot or cut edge in the CPU. Insert the CPU. It should insert easily.



3. Press the lever down to complete the installation.



WARNING!

Overheating will seriously damage the CPU and system. Always make sure the cooling fan can work properly to protect the CPU.

CPU Core Speed Derivation Procedure

The mainboard can automatically set the CPU Host Bus Frequency Clock.

$$\begin{array}{lcl} \text{If} & \text{CPU Clock} & = & 100\text{MHz} \\ & \text{Core/Bus ratio} & = & 7 \\ \text{then} & \text{CPU core speed} & = & \text{Host Clock} \times \text{Core/Bus ratio} \\ & & = & 100\text{MHz} \times 7 \\ & & = & 700\text{MHz} \end{array}$$



WARNING!

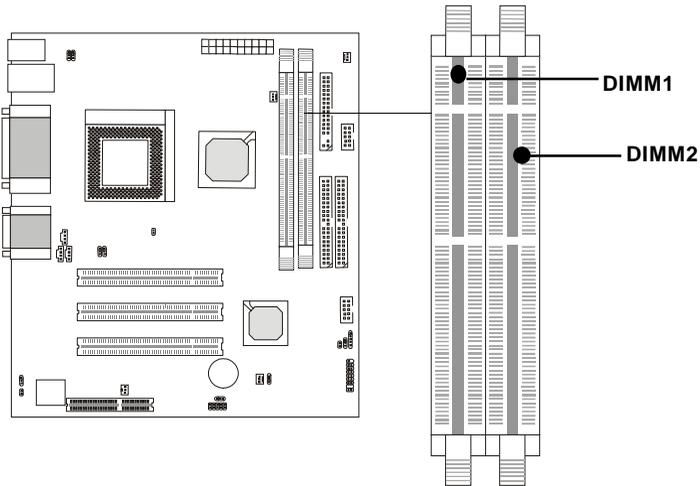
Overclocking

*This motherboard are designed to support overclocking . However, please make sure your components are able to tolerate such abnormal setting, while doing overclocking. Any attempt to operate beyond product specifications are not recommended. **We do not guarantee the damages or risks caused by inadequate operation or beyond product specifications.***

Chapter 2

Memory Installation

The mainboard provides 2 sockets for 168-pin, 3.3V SDRAM with 4 memory banks. To operate properly, at least one DIMM module must be installed. The mainboard supports the memory size up to 512MB.



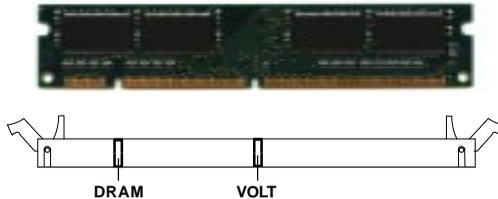
The DRAM Addressing & Size

DRAM Tech.	DRAM Density & Width	DRAM Addressing	Address Size		M B / DIM M	
			Row	Column	Single no Side (S) pcs.	Double no. Side (D) pcs.
16 M	1 M x 16	AS Y M	1 1	8	8 M B x 4	16 M B x
	2 M x 8	AS Y M	1 1	9	16 M B x 8	32 M B x
64 M B	2 M x 32	AS Y M	1 1	9	32 M B x 2	64 M B x
	2 M x 32	AS Y M	1 2	8	16 M B x 2	32 M B x
	4 M x 16	AS Y M	1 1	10	32 M B	64 M B
	4 M x 16	AS Y M	1 3	8	32 M B	64 M B
	8 M x 8	AS Y M	1 3	9	64 M B	128 M B
	64 M B	2 M X 32	1 1	8	16 M B	32 M B
	4 M x 16	AS Y M	1 2	8	---	---
	8 M x 8	AS Y M	1 2	9	---	---

Module Installation Procedures

You can install the single sided or double sided DIMM according to your needs. There are two notches on each DIMM. The pins on the either side of the breaks are different. Pay attention to the orientation as shown below. The module will only fit in the right orientation.

1. Insert the DIMM module vertically into the DIMM slot. Make sure the notch is on the right orientation.
2. The plastic clip at the side of the DIMM slot will automatically close.



Single Sided



Double Sided DIMM

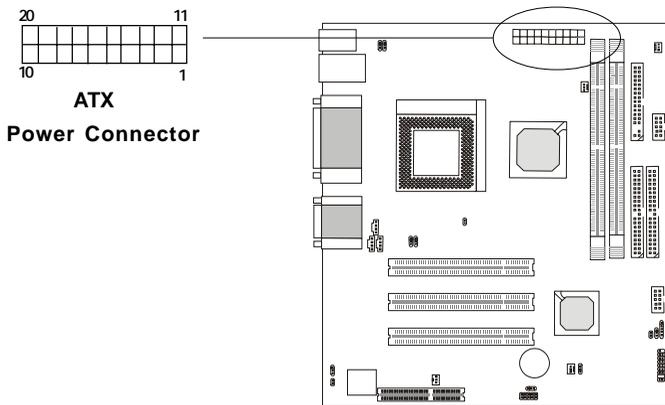


Power Supply

The mainboard supports ATX power supply for the power system. As the mainboard has the instant power on function, make sure that all components are installed properly before inserting the power supply connector to ensure that no damage will be done.

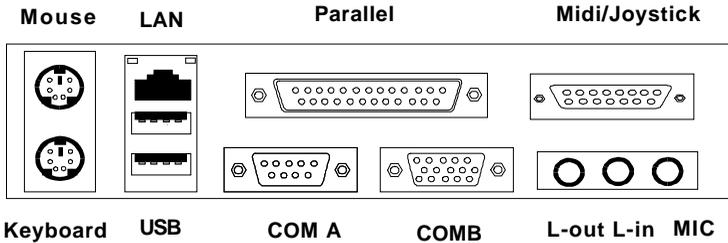
ATX 20-Pin Power Supply

This connector allows you to connect to an ATX power supply. To connect to the ATX power supply, make sure the plugs of the power supply insert in the proper orientation and the pins are aligned. Then push down the power supply firmly into the connector.



Back Panel

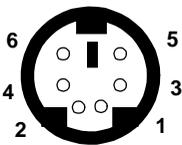
The Back Panel provides the following connectors:



Mouse Connector

The mainboard provides a standard PS/2[®] mouse mini DIN connector for attaching a PS/2[®] mouse. You can plug a PS/2[®] mouse directly into this connector.

PS/2 Mouse (6-pin Female)



PIN	SIGNAL	DESCRIPTION
1	Mouse DATA	Mouse DATA
2	NC	No connection
3	GND	Ground
4	VCC	+5V
5	Mouse Clock	Mouse clock
6	NC	No connection

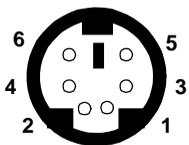
Pin Definition

Chapter 2

Keyboard Connector

The mainboard provides a standard PS/2® keyboard mini DIN connector for attaching a PS/2® keyboard. You can plug a PS/2® keyboard directly into this connector.

PS/2 Keyboard (6-pin Female)



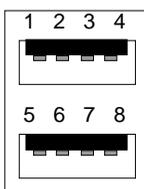
PIN	SIGNAL	DESCRIPTION
1	Keyboard DATA	Keyboard DATA
2	NC	No connection
3	GND	Ground
4	VCC	+5V
5	Keyboard Clock	Keyboard clock
6	NC	No connection

Pin Definition

USB Connectors

The mainboard provides a UHCI (Universal Host Controller Interface) Universal Serial Bus root for attaching USB devices such as keyboard, mouse or other USB devices. You can plug the USB device directly into this connector.

USB Ports



PIN	SIGNAL	DESCRIPTION
1	VCC	+5V
2	-Data 0	Negative Data Channel 0
3	+Data0	Positive Data Channel 0
4	GND	Ground
5	VCC	+5V
6	-Data 1	Positive Data Channel 1
7	+Data 1	Negative Data Channel 1
8	GND	Ground

USB Port Description

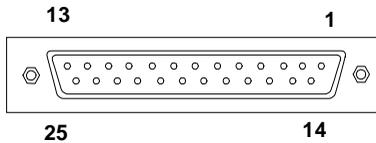
LAN Port

The mainboard provides a LAN port for connection to Local Area Network (LAN). You can connect the network cable to the LAN port.



Parallel Port Connector

The mainboard provides a 25 pin female centronic connector for LPT. A parallel port is a standard printer port that also supports Enhanced Parallel Port (EPP) and Extended Capabilities Parallel Port (ECP).



Pin Definition

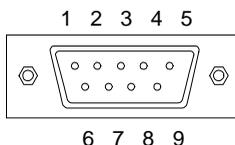
PIN	SIGNAL	DESCRIPTION
1	STROBE	Strobe
2	DATA0	Data0
3	DATA1	Data1
4	DATA2	Data2
5	DATA3	Data3
6	DATA4	Data4
7	DATA5	Data5
8	DATA6	Data6
9	DATA7	Data7
10	ACK#	Acknowledge
11	BUSY	Busy
12	FE	Paper End
13	SELECT	Select
14	AUTOFEED#	Automatic Feed
15	ERR#	Error
16	INIT#	Initialize Printer
17	SLIN#	Select In
18	GND	Ground
19	GND	Ground
20	GND	Ground
21	GND	Ground
22	GND	Ground
23	GND	Ground
24	GND	Ground
25	GND	Ground1

Chapter 2

Serial Port Connectors: COM A & COM B

The mainboard has two 9-pin male DIN connectors for serial ports COM A & COM B. You can attach a mouse or other serial devices directly into these connectors.

9-Pin Male DIN Connectors

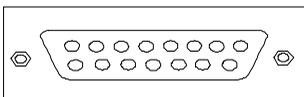


Pin Definition

PIN	SIGNAL	DESCRIPTION
1	DCD	Data Carry Detect
2	SIN	Serial In or Receive Data
3	SOUT	Serial Out or Transmit Data
4	DTR	Data Terminal Ready)
5	GND	Ground
6	DSR	Data Set Ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	RI	Ring Indicate

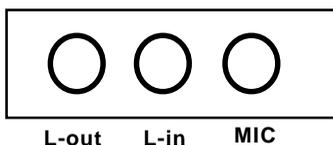
Joystick/Midi Connectors

You can connect game joysticks or game pads to this 15-pin female connector for playing game. You can also connect MIDI devices for playing or editing professional audio.



Audio Port Connectors

Line Out is a connector for headphone or speakers. **Line In** is used for external CD player, tape players or other audio devices to be recorded by your computer or played through the Line Out. **Mic** is a connector for the microphone.

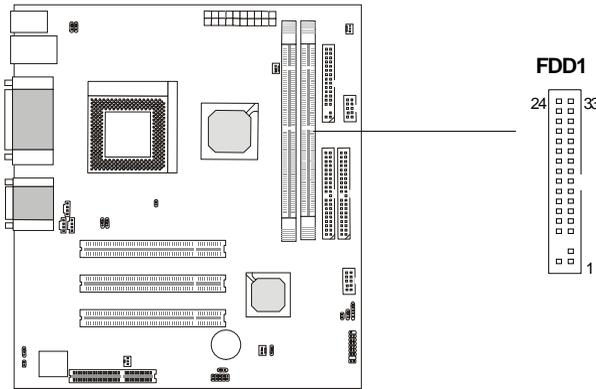


Connectors

The mainboard provides the connectors to connect to FDD, USB, HDD, case, modem, LAN, FAN, smart card, power saving switch, IR module, CD-ROM and DVD add on card.

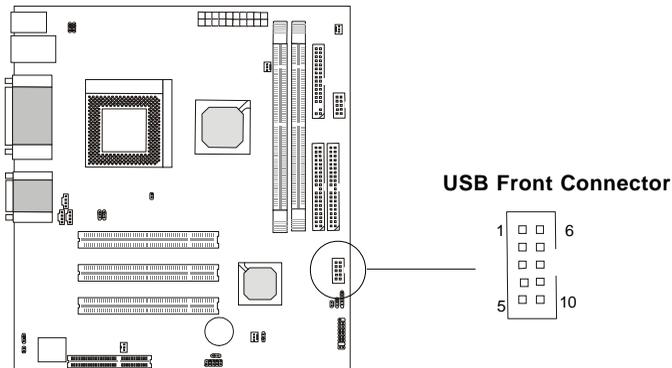
Floppy Disk Drive Connector: FDD1

The mainboard provides a standard floppy disk drive connector that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types.



USB Front Connector (optional)

The mainboard provides a front Universal Serial Bus connector. This is an optional USB connector for Front Panel.



Chapter 2

Hard Disk Connectors: IDE1 & IDE2

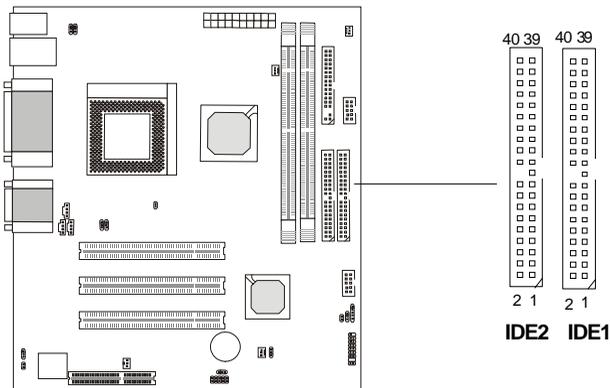
The mainboard has an IDE controller on the ICH chipset that provides IDE HDD/CD-ROM with PIO, Bus Master and Ultra DMA66/100 operations modes. It has two HDD connectors IDE1 (Primary) and IDE2 (Secondary). You can connect up to four hard disk drives, CD-ROM or 120MB Floppy to IDE1 and IDE2.

IDE1 (Primary IDE Connector)

- The first hard disk drive should always be connected to IDE1. You can connect a Master and a Slave drive to IDE1.

IDE2 (Secondary IDE Connector)

- You can connect a Master and a Slave drive to IDE2.

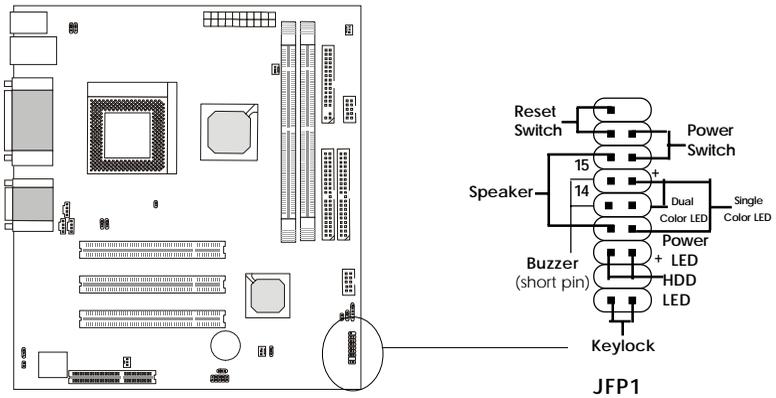


TIP:

If you install two hard disks, you must configure the second drive to Slave mode by setting its jumper accordingly. Refer to the hard disk documentation for the jumper setting.

Case Connector: JFP1

The case connector block JFP1 allows you to connect the Power Switch, Reset Switch, Power LED, Speaker, Key Lock and HDD LED.



Chapter 2

Power Switch

Connect to a 2-pin push button switch. This switch had the same feature with JRMS1.

Reset Switch

Reset switch is used to reboot the system rather than turning the power ON/OFF. Avoid rebooting while the HDD LED is lit. You can connect the Reset switch from the system case to this pin.

PowerLED

The Power LED is lit while the system power is on. You can connect the Power LED from the system case to this pin. There are two types of LED that you can use: 3-pin single color LED or 2-pin dual color LED (ACPI request).

- a. 3 pin single color LED connector to pin 4,5 & 6. This LED will lit when the system is on.
- b. 2 pin dual color LED connector to pin 5 & 6.

GREEN color: Indicate the system is in full on mode.

ORANGE color: Indicate the system is in suspend mode.

Speaker

Speaker from the system case is connected to this pin.

If on-board Buzzer is available:

Short pin 14-15: On-board Buzzer Enabled.

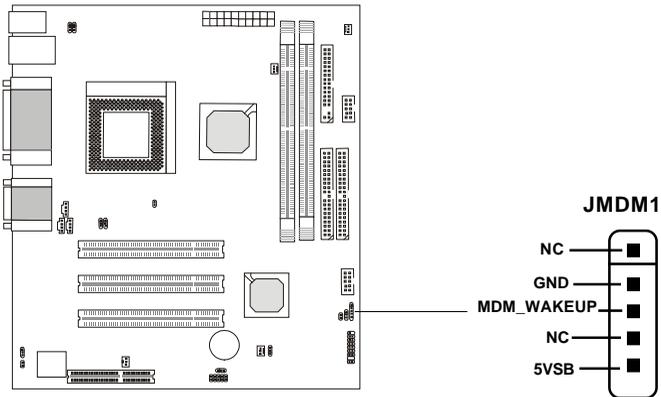
Open pin 14-15: On-board Buzzer Disabled.

HDD LED

HDD LED shows the activity of a hard disk drive. Avoid turning the power off while the HDD led is lit. You can connect the HDD LED from the system case to this pin.

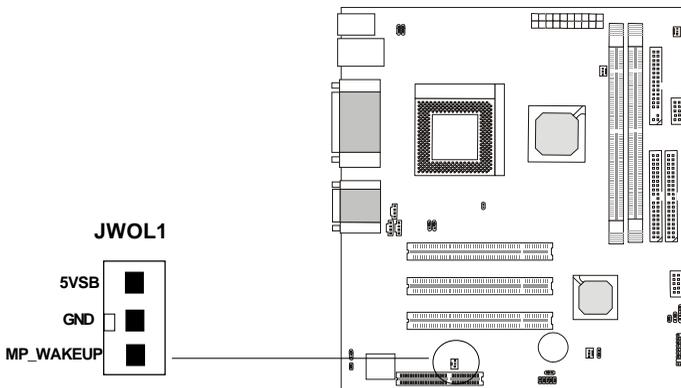
Wake On Ring Connector: JMDM1

This connector allows you to connect to a modem card with Wake On Ring function. The connector will power on the system when a signal is received through the modem card.



Wake On LAN Connector: JWOL1

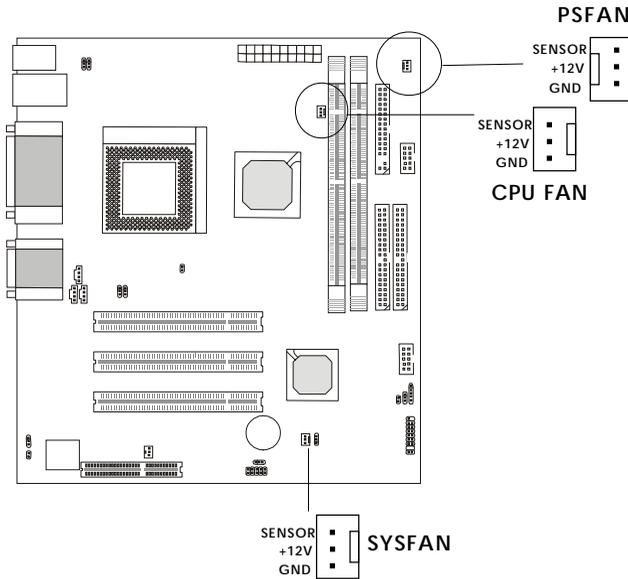
This connector allows you to connect to a LAN card with Wake On LAN function. You can wake up the computer via remote control through a local area network.



Chapter 2

Fan Power Connectors: CPU FAN/SYSFAN/PSFAN

The CPUFAN (processor fan), SYSFAN (system fan) and PSFAN (power supply fan) support system cooling fan with +12V. It supports three pin head connector. When connecting the wire to the connector, always take note that the red wire is the positive and should be connected to the +12V, the black wire is Ground and should be connected to GND. As the mainboard has a System Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of the CPU fan control.

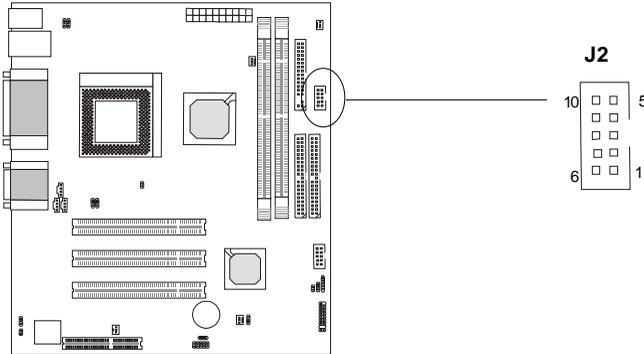


Note:

1. Always consult the vendor for proper CPU cooling fan.
2. CPU Fan supports the fan control. You can install the PC Alert utility that will automatically control the CPU Fan speed according to the actual CPU temperature.

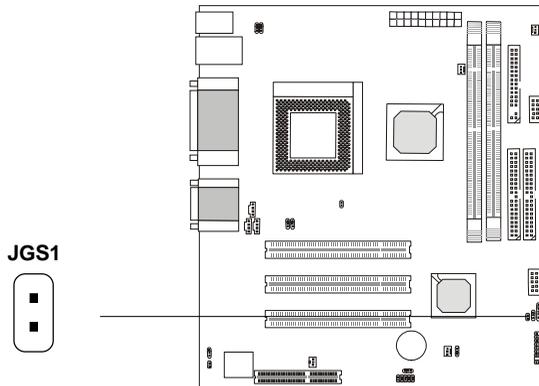
Smart Card Connector: J2

This connector allows you to connect to the smart card device. You can use the smart card to set the security function of computer.



Power Saving Switch Connector: JGS1

This connector allows you to connect to a power saving switch. When the switch is pressed, the system immediately goes into suspend mode. You can press any key to wake up the system.



Chapter 2

AUX Line In Connector

This connector is used for DVD Add on Card with Line In connector.

CD-In Connector

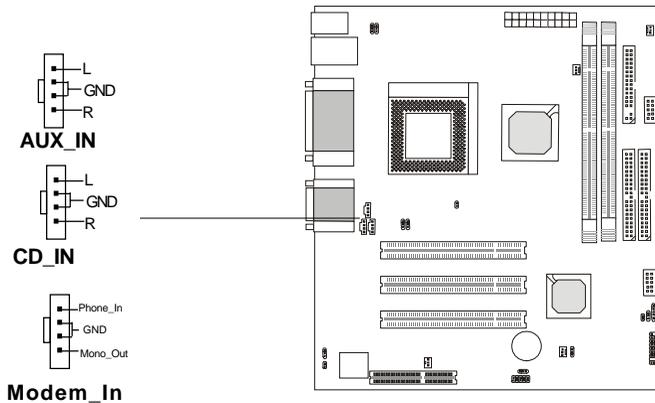
This connector is for CD-ROM audio connector.

Modem-In

This connector is for Modem with internal voice connector.

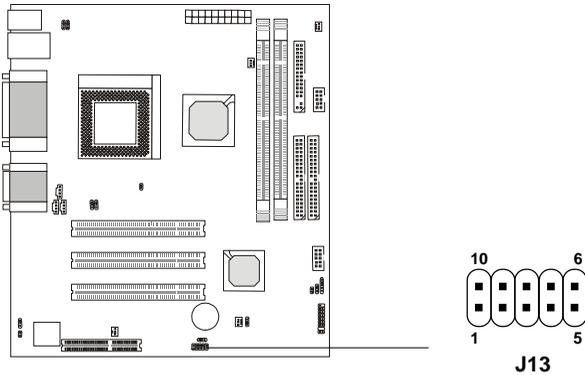
Mono_Out is connected to the Modem Speaker Out connector.

Phone_In is connected to the Modem Microphone In connector.



IrDA Infrared Module Connector: J13

The mainboard provides one infrared (IR) connector for IR modules. This connector is for optional wireless transmitting and receiving infrared module. You must configure the setting through the BIOS setup to use the IR function.

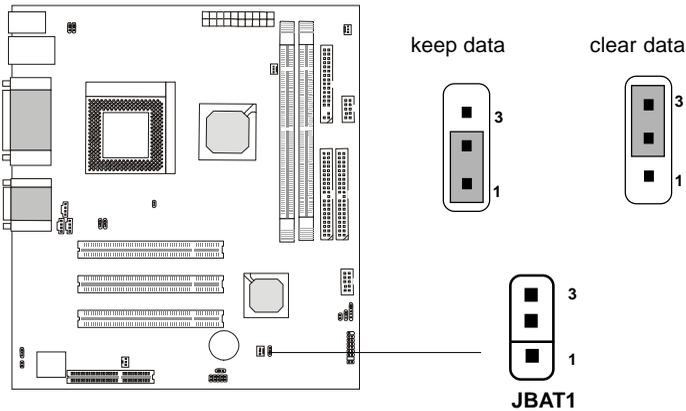


Jumpers

The motherboard provides the following jumpers for you to set the computer's function. Besides jumper settings, some of the motherboard's onboard functions are adjusted through the DIP switches. This section will mention how to change your motherboard's function through the use of jumpers and/or switches.

Clear CMOS Jumper: JBAT1

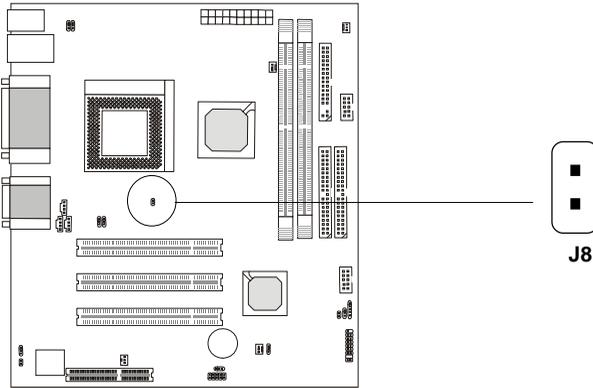
There is a CMOS RAM on board that has a power supply from external battery to keep the data of system configuration. With the CMOS RAM, the system can automatically boot OS every time you turn on the computer. That battery has long life time for at least 5 years. If you want to clear the system configuration, you can use the JBAT1 (Clear CMOS Jumper) to clear data. Follow the steps below to clear the data:



 WARNING!	<p><i>You can clear CMOS by shorting 2-3 pin while the system is off. Then return to 1-2 pin position. Avoid clearing the CMOS while the system is on; it will damage the mainboard.</i></p>
--	--

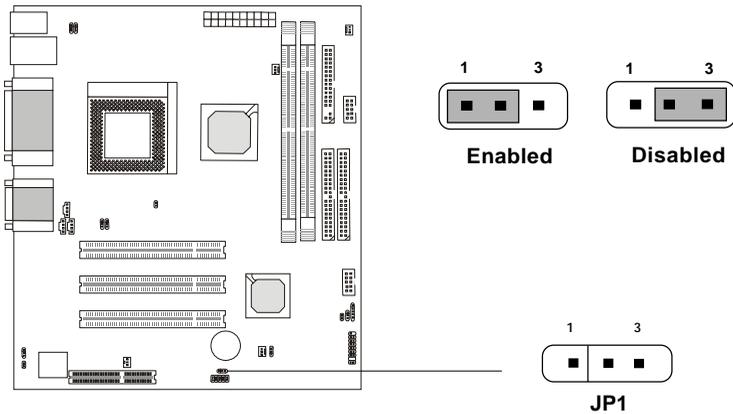
Overclocking Jumper: J8

Overclocking is operating a CPU/processor beyond its specified frequency. J8 is used for overclocking.



Onboard Audio Jumper: JP1

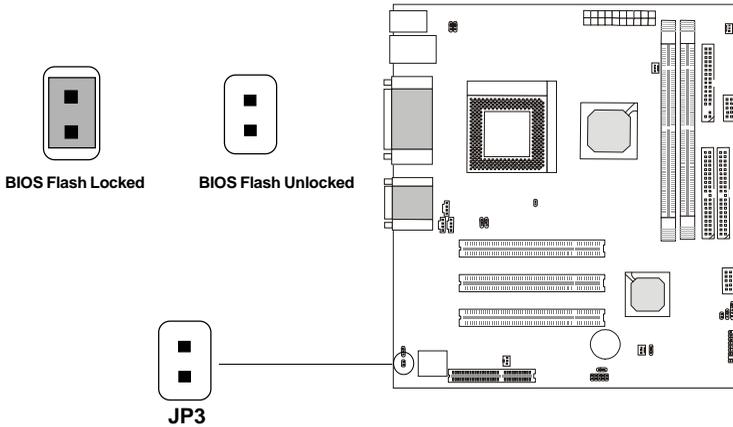
This jumper is used to set the onboard audio function.



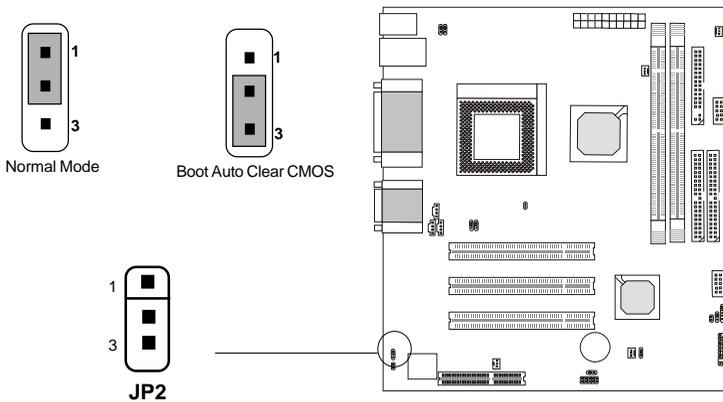
Chapter 2

BIOS Flash Jmper: JP3

This jumper is used to locked/unlocked BIOS Flash. This jumper should be unlock when flashing/programming the BIOS.

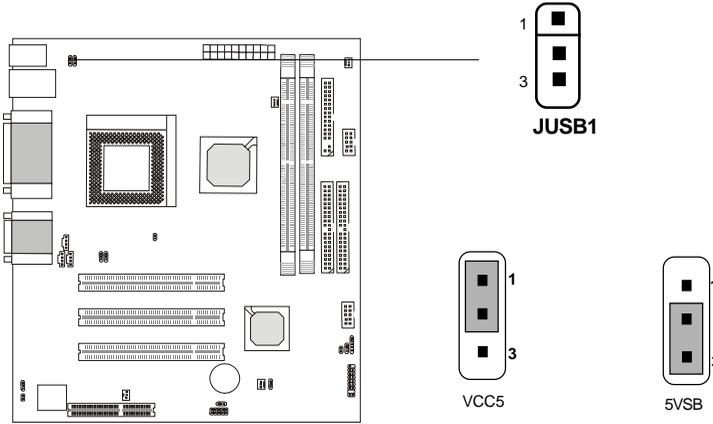


BIOS Update Configuration: JP2



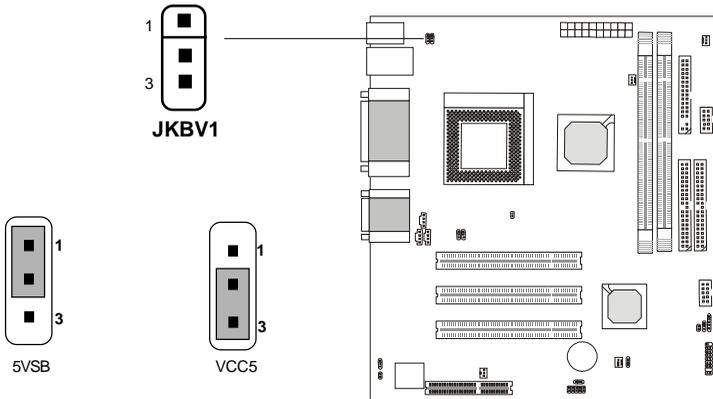
USB Voltage Select: JUSB1

This allows you to select the USB voltage.



KB Voltage Select: JKBV1

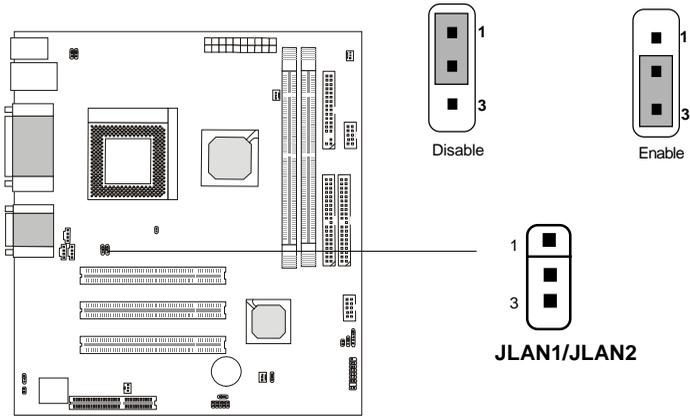
This allows you to select the keyboard voltage.



Chapter 2

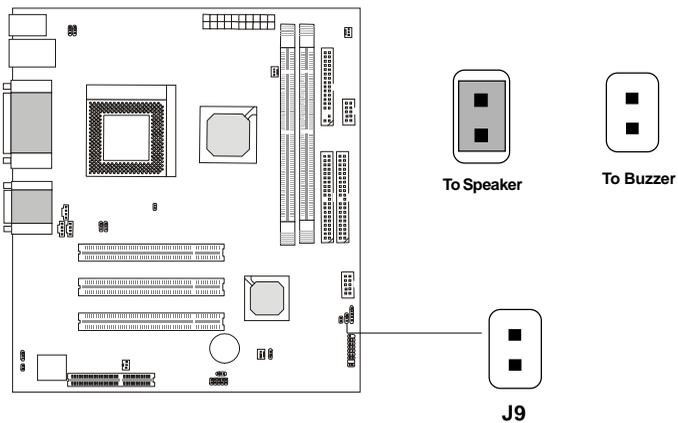
Enable LAN Function: JLAN1/JLAN2

This jumper is used to enable or disable the LAN function.



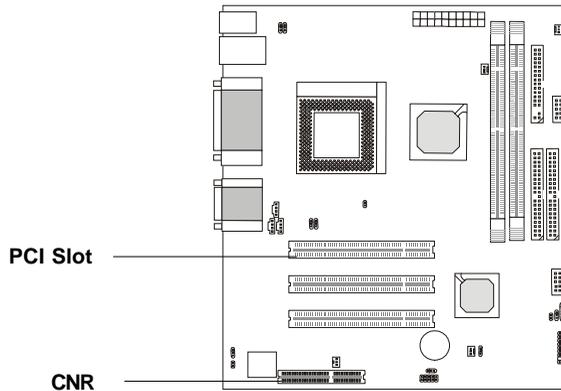
Beep On Buzzer/Speaker Jumper: J9

This jumper is used to set the beep on Buzzer or Speaker function.



Slots

The motherboard provides one CNR (Communication Network Riser) slot and three 32-bit Master PCI Bus Slots.



PCI Slot

The six PCI slots allow you to insert the expansion cards according to your needs. When adding or removing expansion cards, make sure that you unplug the power supply. Meanwhile, read the documentation for the expansion card and make any necessary hardware or software settings for the expansion card, such as jumpers, switches or BIOS.

CNR (Communication Network Riser)

The CNR specification is an open industry-standard specification that defines a hardware scalable Original Equipment Manufacturer (OEM) mainboard riser board and interface, which supports audio and modem only.

Chapter 2

PCI Interrupt Request

The IRQ, abbreviation of interrupt request line, and pronounced I-R-Q, are hardware lines over which devices can send interrupt signals to the microprocessor. The PCI IRQ pins are typically connected to the PCI bus INTA#-INTD# pins as follows.

AGP	INT A #	INT B#	INT C#	INT D#
PCISlot 1	INT A#	INT B#	INT C#	INT D#
PCISlot 2	INT B#	INT C#	INT D#	INT A#
PCISlot 3	INT C#	INT D#	INT A#	INT B#
PCISlot 4	INT C#	INT A#	INT B#	INT C#
PCISlot 5	INT A#	INT B#	INT C#	INT D#
PCISlot 6	INT B#	INT C#	INT D#	INT A#
USB-1	INT D#	INT A#	INT B#	INT C#
USB-2	INT D#	INT A#	INT B#	INT C#
AC97	INT C#	INT D#	INT A#	INT B#

PCI#1~PCI#5: Bus Master

Award® BIOS Setup

3

The mainboard uses Award® BIOS ROM that has a built-in Setup program to allow users to modify the basic system configuration. The information is stored in battery-backed RAM (CMOS RAM) so that it retains the Setup information when the power is turned off.

This chapter provides you with the overview of the BIOS Setup program. It contains the following topics:

Entering Setup	3-2	Frequency/Voltage Control	3-31
Control Keys	3-2	Load Fail-Safe Defaults	3-33
Getting Help	3-3	Load Optimized Defaults	3-34
The Main Menu	3-4	Set Supervisor/User Password	3-35
Standard CMOS Feature	3-6	Save & Exit Setup	3-37
Advanced BIOS Features	3-9	Exit without Saving	3-38
Advanced Chipset Features	3-13		
Integrated Peripherals	3-16		
Power Management Setup	3-22		
PnP/PCI Configurations	3-27		
PC Health Status	3-29		

Chapter 4

Entering Setup

Power on the computer. When the below message appears briefly at the bottom of the screen during the POST (Power On Self Test), press key or simultaneously press <Ctrl>, <Alt>, and <Esc> keys to enter Setup.

TO ENTER SETUP BEFORE BOOT, PRESS <CTRL-ALT-ESC>
OR KEY

If the message disappears before you respond and you still wish to enter Setup, restart the system by turning it OFF then On or pressing the RESET button to try again. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys.

Control Keys

<↑>	Move to the previous item
<↓>	Move to the next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<Enter>	Select the item
<Esc>	Jumps to the Exit menu or returns to the main menu from a submenu
<+/PU>	Increase the numeric value or make changes
<-/PD>	Decrease the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F6>	Load the default CMOS value from Fail-Safe default table, only for Option Page Setup Menu
<F7>	Load Optimized defaults
<F10>	Save all the CMOS changes and exit

Getting Help

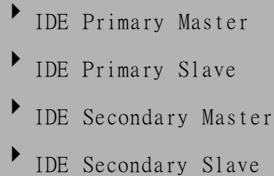
After entering the Setup menu, the first menu you will see is the Main Menu.

Main Menu

The main menu lists the setup functions you can make changes to. You can use the control keys ($\uparrow\downarrow$) to select the item. The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Sub-Menu

If you find a right pointer symbol (as shown in the right view) appears to the left of certain fields that means a sub-menu can be launched from this field. A sub-menu contains additional options for a field parameter. You can use control keys ($\uparrow\downarrow$) to highlight the field and press $\langle\text{Enter}\rangle$ to call up the sub-menu. Then you can use the control keys to enter values and move from field to field within a sub-menu. If you want to return to the main menu, just pres the $\langle\text{Esc}\rangle$.

- 
- ▶ IDE Primary Master
 - ▶ IDE Primary Slave
 - ▶ IDE Secondary Master
 - ▶ IDE Secondary Slave

General Help $\langle\text{F1}\rangle$

The BIOS setup program provides a General Help screen. You can call up this screen from any menu by simply pressing $\langle\text{F1}\rangle$. The Help screen lists the appropriate keys to use and the possible selections for the highlighted item. Press $\langle\text{Esc}\rangle$ to exit the Help screen.

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals.

Power Management Setup

Use this menu to specify your settings for power management.

PnP/PCI Configuration

This entry appears if your system supports PnP/PCI.

PC Health Status

This entry shows your PC health status.

Frequency/Voltage

Use this menu to specify your settings for frequency/voltage control.

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

Use this menu to load the BIOS default values that are factory settings for optimal system performance operations.

Supervisor/User Password

Use this menu to set User and Supervisor Passwords.

Save & Exit Setup

Save CMOS value changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

Chapter 4

Standard CMOS Features

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes none, 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.

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software Standard CMOS Setup

Date(mm:dd:yy):	Thu., Nov 16,2000	Item Help
Time(hh:mm:ss):	16: 15 : 9	
▶IDE Primary Master		Menu Level ▶ Change the day, month, year and century
▶IDE Primary Slave		
▶IDE Secondary Master		
▶IDE Secondary Slave		
Drive A	1.44M, 3.5in.	
Drive B	None	
Video	EGA/VGA	
Halt On	All, But Keyboard	
Base Memory	640K	
Extended Memory	65472K	
Total Memory	1024K	
↑ ↓ → ←::Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Date

This allows you to set the system to the date that you specify (usually the current date). The format is <day><month> <date> <year>.

- Day** Day of the week, from Sun. to Sat., determined by BIOS. Read-only.
- month** The month from Jan. through Dec.
- date** The date from 1 to 31 can be keyed by numeric function keys.
- year** The year, depends on the year of the BIOS

Time

This allows you to set the system to the time that you specify (usually the current time). The time format is <hour> <minute> <second>.

**PrimaryMaster/PrimarySlave
SecondaryMaster/Secondary Slave**

Press PgUp/<+> or PgDn/<-> to select the hard disk drive category. The specification of hard disk drive will show on the right hand according to your selection. You can press <Enter> to enter the sub-menu. The sub-menu will appear as the following example:

IDE Primary Master		Item Help
IDE HDD Auto-Detection	Press Enter	
IDE Primary Master	Auto	Menu Level ▶▶
Access Mode	Auto	To auto-detect the HDD's size, head...on this channel
Capacity	15365MB	
Cylinder	29770	
Head	16	
Precomp	65535	
Landing Zone	29769	
Sector	63	

- Access Mode The settings are Auto, Normal, Large,LBA.
- Cylinder number of cylinders
- Head number of heads
- Precomp write precom
- Landing Zone landing zone
- Sector number of sectors

Chapter 4

Drive A, Drive B

This allows you to set the type of floppy drivers installed. Setting options: [None], [360K, 5.25in], [1.2M, 5.25in], [720k, 3.5in], [1.44M, 3.5in], [2.88M, 3.5in]. Drive A default value: [1.44M, 3.5in]. Drive B default value: [None].

Video

This allows you to set the type of video card. Setting options: [EGA/VGA] [CGA40] [CGA80] [MONO]. Default value: [EGA/VGA].

Halt on

This allows you to set the type of errors that will cause system halt on. Setting option: [All Errors] [No Errors] [All, But Keyboard] [All, But Diskette] [All, But Disk/Key]. Default value: [All, But Keyboard].

All Errors: The system will halt on and display the error message if any error happens.

No Errors: The system will not halt on no matter any error happens.

All, But Keyboard: The system will halt on if any error happens. But the system will not halt on if the keyboard function is not normal.

All, But Disk/Key: The system will halt on if any error happens. But the system will not halt on if the disk drive and keyboard function is not normal.

Advanced BIOS Features

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
Advanced BIOS Features

Anti-Virus Protection	Disabled	Item Help
CPU Internal Cache	Enabled	
External Cache	Enabled	Menu Level > Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep
CPU L2 Cache ECC Checking	Enabled	
Processor Number Feature	Enabled	
Quick Power On Self Test	Disabled	
First Boot Device	Floppy	
Second Boot Device	HDD-0	
Third Boot Device	LS120	
Boot Other Device	Enabled	
Swap Floppy Drive	Disabled	
Boot Up Floppy Seek	Enabled	
Boot Up NumLock Status	On	
Gate A20 Option	Fast	
Typematic Rate Setting	Disabled	
x Typematic Rate (Chars/Sec)	6	
x Typematic Delay (Msec)	250	
Security Option	Setup	
OS Select For DRAM > 64MB	Non-OS2	
HDD S.M.A.R.T Capability	Disabled	
Report No FDD For WIN95	No	
↑ ↓ → ←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Anti-Virus Protection

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 beeps. Setting options: [Disabled] [Enabled]. Default value: [Disabled]

Chapter 4

CPU Internal Cache

This allows you to choose from the default of [Enabled] or choose [Disabled] to turn on or off the CPU's internal cache. Setting options: [Disabled] [Enabled].

 **Note:** *The internal cache is built in the processor.*

External Cache

This allows you to choose from the default of [Enabled] or choose [Disabled] to control the function of level 2 cache memory. Setting options: [Disabled] [Enabled]. Default value: [Enabled].

CPU L2 Cache ECC Checking

This allows you to control the ECC (error check correction) capability in the CPU level 2 cache. Setting options: [Disabled] [Enabled]. Default value: [Enabled].

Processor Number Feature

During "Enabled", the processor serial number will be shown on the POST boot up procedure. Setting options: [Disabled] [Enabled]. Default value: [Enabled].

Quick Power On Self Test

This allows you to speed up Power On Self Test (POST) after you power on the computer. If this is set to Enabled, BIOS will shorten or skip some check items during POST. Setting options: [Disabled] [Enabled]. Default value: [Disabled].

First/Second/Third/Boot Other Device

This allows you to set the sequence of boot device from that the BIOS attempts to load the operating system. Setting options: [Floppy], [LS120], [HDD-0], [HDD-1], [HDD-2], [HDD-3], [SCSI], [CDROM], [ZIP100], [LAN], [Disabled].

Swap Floppy Drive

This allows you to choose from the default of [Disabled] or choose [Enabled] to switch the floppy disk drives between being designated as A and B. Setting options: [Disabled] [Enabled]. Default value: [Disabled].

Boot Up Floppy Seek

This function allows the system to check if floppy installed or uninstalled when booting up the computer. Setting options: [Disabled] [Enabled]. Default value: [Enabled].

Boot Up NumLock Status

This allows you to set the NumLock status when you boot up your computer. When you choose from the default of [On], the keypad is numeric keys. When you choose [Off], the keypad is arrow keys. Setting options: [On] [Off]. Default value: [On]

Gate A20 Option

This allows you to set the Gate A20 status. When you choose from the default of [Fast], the Gate A20 is controlled by chipset. When you choose [Normal], a pin in the keyboard controller controls the Gate A20. Setting options: [Fast] [Normal]. Default value: [Fast]

Typematic Rate Setting

This allows you to set the keystrokes repeat rate determined by keyboard controller. When you choose “Enabled”, the “Typematic Rate” and “Typematic Delay” can be selected. Default value: [Disabled].

Typematic Rate (Chars/Sec)

This allows you to set the number of times a second to repeat a keystroke when you hold the key down. Setting options: [6], [8], [10], [12], [15], [20], [24], [30]. Default value: [6].

Chapter 4

Typematic Delay (Msec)

This allows you to set the delay time before the key begins to repeat the keystroke while holding down the key. Setting options: [250], [500], [750], [1000]. Default value: [250].

Security Option

This allows you to limit access to the system and Setup, or just to Setup. When you choose from the default of [Setup], the system will boot, but access to Setup will be denied if the correct password is not entered at the prompt. When you choose [System], the system will not boot and access to Setup will be denied if the correct password is not entered at the prompt. Setting options: [Setup] [System]. Default value: [Setup].

OS Select For DRAM > 64MB

This allows you to run the OS/2[®] operating system with > 64 MB of DRAM. When you choose from the default of [Non-OS2], you cannot run the OS/2[®] operation system with > 64 MB of DRAM. When you choose [OS2], it is possible. Setting options: [Non-OS/2] [OS2]. Default value: [Non-OS/2]

HDDS.M.A.R.T Capability

This allows you to set the HDD S.M.A.R.T capability. S.M.A.R.T is a utility that monitors your disk hardware with the goal of identifying disks that have a strong possibility of crashing. This provides you a window of opportunity to gracefully remove data from a failing disk and take it offline before your disk drive takes you offline. Setting options: [Enabled] [Disabled]. Default value: [Disabled]

Report No FDD For WIN95

This function is only used when you are testing HCT for Windows[®] 95 Logo. Setting options: [No] [Yes]. Default value: [No]

Advanced Chipset Features

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
Advanced Chipset Features

SDRAM CAS Latency Time	Auto	Item Help
SDRAM Cycle Time Tras/Trc	6/8	Menu Level >
SDRAM RAS-to-CAS Delay	3	
SDRAM RAS Precharge Time	3	
System BIOS Cacheable	Disabled	
Video BIOS Cacheable	Disabled	
Memory Hole At 15M-16M	Disabled	
CPU Latency Timer	Disabled	
Delayed Transaction	Enabled	
On-Chip Video	Enabled	
Local Memory Frequency	100Mhz	
Onboard Display Cache Setting		
Initial Display Cache	Enabled	
CAS# Latency	3	
Paging Mode Control	Open	
RAS-to-CAS Override	by CAS#LT	
RAS# Timing	Fast	
RAS# Precharge Timing	Fast	
↑ ↓ → ←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

SDRAM CAS Latency Time

This allows you to set the SDRAM CAS Latency time. Setting options:

[Auto], [2], [3]. Default value: [Auto].

SDRAM Cycle Time Tras/Trc

This allows you to control the number of SDRAM clocks used for SDRAM parameters Tras and Trc. Tras specifies the minimum clocks required between active command and prechange command. Trc specifies the minimum clocks required between active command and re-active command. Setting options:

[5/7], [6/8]. Default value: [6/8].

Chapter 4

SDRAMRAS-to-CAS Delay

This allows you to control the latency between the SDRAM active command and the read/write command. Setting options: [3], [2]. Default value: [3].

SDRAM RAS Prechange Time

This allows you to control the idle clocks after issuing a prechange command to the SDRAM. Setting options: [3], [2]. Default value: [3].

System BIOS Cacheable

Selecting “Enabled” allows the caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result. Setting options:[Enabled] [Disabled]. Default value: [Disabled].

Video BIOS Cacheable

Selecting “Enabled” allows caching of the video RAM, resulting in better system performance. However, if any program writes to this memory area, a system error may result. Setting options:[Enabled] [Disabled]. Default value: [Disabled].

Memory Hole at 15M-16M

This allows you to reserve an address space for ISA expansion cards that require it. Setting options:[Enabled] [Disabled]. Default value: [Disabled].

CPU Latency Timer

This allows you to control the GMCH's response to CPU deferrable cycles. Setting options: [Disabled], [Enabled]. Default value: [Disabled].

Delayed Transaction

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select "Enabled" to support compliance with PCI specification version 2.1. Setting options: [Disabled], [Enabled]. Default value: [Enabled].

On-Chip Video

This allows you to enabled/disabled the on-chip video window size for VGA driver use. Setting options: [Enabled], [Disabled]. Default value: [Enabled].

Local Memory Frequency

This allows you to select the Onboard Display Cache frequency. Setting options: [100Mhz], [133Mhz]. Default value: [100Mhz].

ONBOARD DISPLAY CACHE SETTING (OPTIONAL)

Initial Display Cache

This allows you to Enabled/Disabled Onboard Display Cache. Setting options: [Enabled], [Disabled]. Default value: [Enabled].

CAS# Latency

The number of clock cycles of CAS# Latency depends on the Onboard Display cache timing. Setting options: [2], [3]. Default value: [3].

Chapter 4

Paging Mode Control

This allows you to select the paging mode control. Setting options: [Open], [Close]. Default value: [Open].

RAS-to-CAS Override

This item allows you to insert a timing delay between the CAS and RAS strobe signals, used when Onboard display cache is written to, read from, or refreshed. During CAS# LT, this will depend on the Onboard Display Cache CAS# Latency setting. During Override (2), RAS-to-CAS time=2.

RAS# Timing

This option controls RAS# active to Precharge, and refresh to RAS# active delay (in local memory clocks).

Slow RAS# to precharge (t_{RAS}) = 7, refresh to RAS# act (t_{RC}) = 10

Fast RAS# to precharge (t_{RAS}) = 5, refresh to RAS# act (t_{RC}) = 8

RAS# Precharge Timing

This item controls RAS# precharge (in local memory clocks)

Slow RAS# Precharge Time=3

Fast RAS# Precharge Time=2

Integrated Peripherals

On-Chip Primary PCI IDE	Enabled	Item Help
On-Chip Secondary PCI IDE	Enabled	
IDE Primary Master PIO	Auto	Menu Level >
IDE Primary Slave PIO	Auto	
IDE Secondary Master PIO	Auto	
IDE Secondary Slave PIO	Auto	
IDE Primary Master UDMA	Auto	
IDE Primary Slave UDMA	Auto	
IDE Secondary Master UDMA	Auto	
IDE Secondary Slave UDMA	Auto	
USB Controller	Enabled	
USB Keyboard Support	Disabled	
Init Display First	PCI Slot	
AC97 Audio	Auto	
AC97 Modem	Disabled	
Onboard LAN	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	3F8/IRQ4	
Onboard Serial Port 2	Disabled	
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	
EPP Mode Select	EPP1.7	
ECP Mode Use DMA	3	
PWRON After PWR-Fail	off	
Game Port Address	201	
Midi Port Address	330	
Midi Port IRQ	10	
Power Status Led	Single	
SCR Port Address	Disabled	
*SCR Port IRQ	11	
<p>↑ ↓ → ←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults</p>		

Chapter 4

OnChip Primary/Secondary PCIIDE

The integrated peripheral controller contains an IDE interface with support for two IDE channels. Choose the default of [Enabled] to activate each channel separately. Setting options: [Enabled] [Disabled]. Default value: [Enabled].

IDE Primary/Secondary Master/Slave PIO

The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device. Settings options: [Auto], [Mode 0], [Mode 1], [Mode 2], [Mode 3], [Mode 4].

IDE Primary/Secondary Master/Slave UDMA

Ultra DMA/33 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third -party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/33 and Ultra DMA/66, select “Auto” to enable BIOS support. Setting options: [Auto], [Disabled]. Default Value: [Auto].

USB Controller

This allows you to control the function of USB controller. When choosing “Enabled”, the USB controller can be used while choosing “Disabled” let USB has no function. Setting options: [Enabled] [Disabled]. Default value: [Enabled]

USB Keyboard Support

Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard. Setting options: [Enabled] [Disabled]. Default value: [Disabled]

Init Display First

This item allows you to decide to activate whether PCI Slot or AGP Slot. Setting options: [PCI Slot] [AGP]. Default value: [PCI Slot].

AC97 Audio/AC97 Modem

[Auto] allows the motherboard's BIOS to detect whether you're using any audio/modem device. If it is, the onboard modem/audio controller will be enabled. If not, the onboard modem/audio controller will be disabled. If you want to use different controller cards to connect modem and audio connectors, set these fields to [Disabled]. Setting options: [Auto] [Disabled]. Default value: [Auto]

OnboardLAN

This item should be enabled if you want to use the onboard LAN function. Setting options: [Enabled] [Disabled]. Default value: [Enabled].

IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select "Enabled" for automatic detection of the optimal number of block read/writes per sector the drive can support. Setting options: [Enabled] [Disabled]. Default value: [Enabled].

POWER ON Function

This item allows you to choose the function from that the system is powered on. Setting options: [password] [Hot Key], [Mouse Left], [Mouse Right], [BUTTON ONLY], [keyboard 98]. Default value: [BUTTON ONLY].

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Keyboard Power ON Password

This allows you to set the password for keyboard power on function while the system is turned off.

Hot Key Power ON

This allows you to set the hot key power on function while the system is turned off. Setting options: [Ctrl-F1/2/3/4/5/6/7/8/9/10/11/12]

Default value: [Ctrl-F1]

Onboard FDC Controller

Select “Enabled” if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install add-on FDC or the system has no floppy drive, select “Disabled” in this field. Setting options: [Disabled], [Enabled]. Default value: [Enabled]

Onboard Serial Port 1/Port 2

This allows you to select an address and corresponding interrupt for the first and second serial ports. Setting options: [3F8/IRQ4], [2E8/IRQ3], [3E8/IRQ4], [2F8/IRQ3], [Disabled], [Auto]. Default value: [3F8/IRQ4] for Port 1, [Disabled] for Port 2.

UART Mode Select

This allows you to select the UART mode. While choosing [Normal], the following four items will have no function. Setting options: [IrDA] [ASKIR] [Normal]. Default value: [Normal]

Onboard Parallel Port

There is a built-in-parallel port on the onboard Super I/O chipset that provides Standard, ECP, and EPP features. Setting options: [Disabled] [3BC/IRQ7] [378/IRQ7] [278/IRQ5]. Default value: [378/IRQ7]

Parallel Port Mode

This allows you to set the onboard parallel port mode. Setting options : [SPP] [EPP] [ECP] [ECP/EPP]. Default value: [SPP]

SPP: Standard Parallel Port

EPP: Enhanced Parallel Port

ECP: Extended Capability Port

EPP Mode Select

This allows you to select the type of EPP mode. Setting options : [EPP1.7] [EPP1.9]. Default value: [EPP1.7]

ECP Mode Use DMA

This allows you to select a DMA channel for the parallel port for use during ECP mode. Setting options : [1] [3]. Default value: [3]

PWRON After PWR-Fail

This allows you to choose how the system will power on after a power failure. Setting options : [Off] [Former-Sts] [On]. Default value: [Off]

Game Port Address

This allows you to set the Game Port address. Setting options : [Disabled] [201] [209]. Default value: [201]

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Midi Port Address

This allows you to set the Midi Port address. Setting options : [Disabled] [330] [300] [290]. Default value: [330]

Midi Port IRQ

This allows you to set the Midi Port IRQ. Setting options : [5] [10]. Default value: [10]

Power Status Led

This allows you to choose the type of Power Status Led. Setting options : [Single] [Dual] [Blinking]. Default value: [Single]

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.

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
Power Management Setup

ACPI Function	Enabled	Item Help
ACPI Suspend Type	S1 (POS)	
Power Management	User Define	Menu Level >
Video Off Method	DPMS	
Video Off In Suspend	Yes	
Suspend Type	PwrOn Suspend	
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	Enabled	
Wake Up On LAN	Enabled	
USB KB Wake-Up From S3	Disabled	
CPU Thermal-Throttling	50.0%	
Resume by Alarm	Disabled	
x Date (of Month) Alarm	0	
x Time (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		

Chapter 4

ACPIFunction

This item allows you to set ACPI (Advanced Configuration and Power Management) function. Setting options: [Enabled] [Disabled]. Default value: [Enabled]

ACPI Suspend Type

This item allows you to set the ACPI suspend type you will use. Setting options: [S1 (POS)] [S3 (STR)]. Default value: [S1 (POS)]

S1 (POS)	The S1 sleeping state is low wake-up latency sleeping state. In this state, no system context is lost (CPU or chip set) and hardware maintains all system context.
S3 (STR)	The S3 state is a low wake-up latency sleeping state. In this state all system context is lost except system memory. CPU, cache, and chipset context are lost in this state. Hardware maintains memory context and restores some CPU and L2 configuration context.

Power Management

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

HDD Power Down Doze Mode Suspend Mode

There are three selections for Power Management, two of which have fixed mode settings.

Min. Saving	Minimum power management. Suspend Mode = 1 hr., and HDD Power Down = 15 min.
Max. Saving	Maximum power management. Suspend Mode = 1 min., and HDD Power Down = 1min.
User Define (default)	Allow 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.

Video Off Method

This determines the manner in which the monitor is blanked.

V/H SYNC+Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
Blank Screen	This option only writes blanks to the video buffer.
DPMS Support (default)	Initial display power management signaling.

Video Off In Suspend

This allows you to determine whether you want your monitor blanked for power management when entering suspend mode. Setting options: [Yes], [No]. Default value: [Yes].

Suspend Type

This allows you to select the suspend type for system power management. Setting options: [Stop Grant], [PwrOn Suspend]. Default value: [PwrOn Suspend].

Modem Use IRQ

This determines the IRQ in which the MODEM can use. Setting options: [3] [4] [5] [7] [9] [10] [11] [NA]. Default value: [3].

Suspend Mode

This allows you to set the time period before the system goes into suspend mode. Setting options: [1 Min] [2 Min] [4 Min] [8 Min] [12 Min] [20 Min] [30 Min] [Disabled]. Default value: [Disabled].

Chapter 4

HDD Power Down

This allows you to set the time period before the hard disk drive will be powered down while all other devices remain active. Setting options: [Disabled] [1/2/3/4/5/6/7 min]. Default value: [Disabled]

Soft-off by PWR-BTTN

Choose the value of [Delay 4 Sec] to allow pressing the power button for more than 4 seconds to force the system to enter the Soft-Off state. Setting options: [Delay 4 sec] [Instant-Off]. Default value: [Instant-Off]

Wake-Up by PCI Card

This function allows you to enable the system to wake up through PCI Card peripheral. Setting options: [Enabled] [Disabled]. Default value: [Disabled]

Power On by Ring

This function allows you to enable the system to wake up through modem card while the telephone is ringed. Setting options: [Disabled] [Enabled]. Default value: [Enabled]

Wake Up On LAN

To use this function, you need a LAN add-on card which supports power on functions. It should also support the wake-up on LAN jumper (JWOL1). This function allows your computer to be booted from another computer via a network by sending a wake-up frame or signal. Setting options: [Enabled] [Disabled]. Default value: [Enabled]

USB KB Wake-Up From S3

When choosing the function of “Enabled”, pressing USB keyboard will wake up the system from shutdown in “Suspend to RAM” mode. Setting options: [Enabled] [Disabled]. Default value: [Disabled]

CPU Thermal-Throttling

This allows you to select the CPU Thermal-Throttling rate. Setting options: [12.5%], [25.0%], [37.5%], [50.0%], [62.5%], [75.0%], [87.5]. Default value: [50.0]

Resume by Alarm

This allows you to set the date and time alarm for your computer to boot up. During [Disabled], you cannot use this function. During the value of [Enabled], you can set the date and time alarm. Default value: [Disabled]

- Date (of Month) Alarm

You can choose which month the system will boot up. Setting “0” will allow you to boot the system every day.

- Time (hh:mm:ss) Alarm

You can choose what hour, minute and second the system will boot up.

Note: *If you have change the setting, you must let the system boot up until it goes to the operating system, before this function will work.*

Reload Global Timer Events

Reload Global Timer events are I/O events whose occurrence can prevent the system from entering a power saving mode or can awaken the system from such a mode. In effect, the system remains alert for anything which occurs to a device which is configured as *Enabled* , even when the system is in a power down mode.

Chapter 4

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 the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
PnP/PCI Configuration

Reset Configuration Data	Disabled	Item Help
Resources Controlled By xIRQ Resources	Auto (ESCD) Press Enter	Menu Level >
PCI/VGA Palette Snoop	Disabled	Default is Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the OS cannot boot
INT Pin 1 Assignment	Auto	
INT Pin 2 Assignment	Auto	
INT Pin 3 Assignment	Auto	
INT Pin 4 Assignment	Auto	
↑ ↓ → ←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

Reset Configuraton Data

This allows you to reset the configuration data. Setting options: [Disabled] [Enabled]. Default value: [Disabled]

Resource Controlled By

The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows®95/98. If you set this field to “manual” choose specific resources by going into each of the sub menu that follows this field (a sub menu is preceded by a “➤”). The settings are: Auto(ESCD), Manual. (If you choose “Auto”, the IRQ Resources and DMA Resources will not have function.)

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

Leave this field at *Disabled*. The settings are Enabled, Disabled.

Chapter 4

PC Health Status

This section helps you to get more information about your system including CPU temperature, FAN speed and voltages. It is recommended that you contact with your motherboard supplier to get proper value about your setting of the CPU temperature.

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
PC Health Status

CPU Warning Temperature	Disabled	Item Help
Current System Temp.		
Current CPU Temperature		
Current CPUFAN1 Speed		
Current CPUFAN2 Speed		
Vcore		
+3.3V		
+5V		
+12V		
- 12V		
Shutdown Temperature	Disabled	Menu Level >

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

CPU Warning Temperature

This allows you to set the CPU warning temperature. The system will beep while the CPU reaches the warning temperature. Default value: [Disabled]

Current SystemTemp.

This item shows the current CPU System temperature.

Current CPUFAN1/CPUFAN2 Speed

This item shows the current CPUFAN speed.

Vcore

This item shows the current system voltage.

Shutdown Temperature

This option allows you to set the shutdown temperature level for the processor. When the processor reach the temperature you set, this will shutdown the system. This function only works in Windows® 95/98 operation system. Setting options: [Disabled], [80°C/176°F], [85°C/185°F], [90°C/194°F]. Default Value: [Disabled]

Chapter 4

Frequency/Voltage Control

This section is for setting CPU Frequency/Voltage Control.

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
Frequency/Voltage Control

Auto Detect DIMM/PCI Clk	Enabled	Item Help
CPU Host/SDRAM/PCI Clk/Sst	Default	
CPU Clock Ratio	Auto	Menu Level >
↑ ↓ → ←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

Auto Detect DIMM/PCI CLK

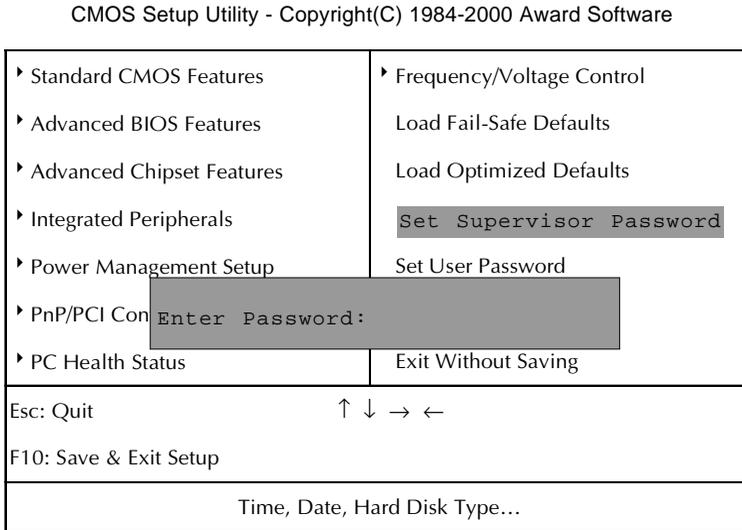
This item allows you to enable/disable auto detect DIMM/PCI Clock.
Default value: [Enabled]. Setting options: [Enabled] [Disabled]

CPU Clock Ratio

This item allows you to set the CPU Clock Ratio.

Set Supervisor/User Password

When you select this function, a message as below will appear on the screen:



Type the password, up to eight characters in length, and press <Enter>. The password typed 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 a password, just press <Enter> when you are prompted to enter the password. A message will confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

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Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.

You determine when the password is required within the BIOS Features Setup Menu and its Security option. If the Security option is set to “System”, the password will be required both at boot and at entry to Setup. If set to “Setup”, prompting only occurs when trying to enter Setup.

About Supervisor Password & User Password:

Supervisor password : Can enter and change the options of the setup menus.

User password: Can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

Glossary

Buffer

A temporary storage area, usually in RAM. The purpose of most buffers is to act as a holding area, enabling CPU to manipulate data before transferring it to a device.

Bus

A collection of wires through which data is transmitted from one part of a computer to another. You can think of a bus as a highway on which data travels within a computer.

Chipset

A number of integrated circuits designed to perform one or more related functions. For example, one chipset may provide the basic functions of a modem while another provides the CPU functions for a computer.

CMOS

Abbreviation of *complementary metal oxide semiconductor*. Pronounced *see-moss*, CMOS is a widely used type of semiconductor. CMOS chips are particularly attractive for use in battery-powered devices, such as portable computers. Personal computers also contain a small amount of battery-powered CMOS memory to hold the date, time, and system setup parameters.

Com

In DOS system, the name of a serial communications port. DOS supports four serial ports: COM1, COM2, COM3, and COM4.

DIMM

Short for *dual in-line memory module*, a small circuit board that holds memory chips. A *single in-line memory module (SIMM)* has a 32-bit path to the memory

chips whereas a DIMM has 64-bit path.

IDE

Abbreviation of either *Intelligent Drive Electronics* or *Integrated Drive Electronics*, depending on who you ask. An IDE interface is an interface for mass storage devices, in which the controller is integrated into the disk or CD-ROM drive.

IrDA

Short for *Infrared Data Association*, a group of device manufacturing that developed a standard for transmitting data via infrared light waves. This enables you to transfer data from one device to another without any cables.

LED

Abbreviation of *light emitting diode*, an electronic device that lights up when electricity is passed through it. LEDs are usually red. They are good for displaying images because they can be relatively small, and they do not burn out.

LPT

A name frequently used by operating systems to identify a printer. Although LPT originally stood for *line printer terminal*, it is now used more generally to identify any type of printer.

PCI

Acronym for *Peripheral Component Interconnect*, a local bus standard developed by Intel Corporation. Most modern PCs include a PCI bus in addition to a more general ISA expansion bus.

PS/2 Port

A type of port developed by IBM for connecting a mouse or keyboard to a PC. The PS/2 port supports a mini DIN plug containing just 6 pins. Most PCs have a PS/2 port so that the special port can be used by another device, such as a modem.

