

MSI

MICRO-STAR INTERNATIONAL

MS-6380 ATX Mainboard



Version 3.0
G52-MA00464

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FCC-B Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

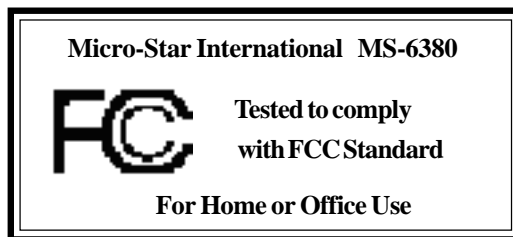
Notice 1

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2

Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

VOIR LA NOTICE D'INSTALLATION AVANT DE RACCORDER AU RESEAU.



Edition

October 2001

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Revision History

Revision	Revision History	Date
3.0	First release for PCB 3.X	October 2001

Safety Instructions

1. Always read the safety instructions carefully.
2. Keep this User's Manual for future reference.
3. Keep this equipment away from humidity.
4. Lay this equipment on a reliable flat surface before setting it up.
5. The openings on the enclosure are for air convection hence protects the equipment from overheating. **DO NOT COVER THE OPENINGS.**
6. Make sure the voltage of the power source and adjust properly 110/220V before connecting the equipment to the power inlet.
7. Place the power cord such a way that people can not step on it. Do not place anything over the power cord.
8. Always Unplug the Power Cord before inserting any add-on card or module.
9. All cautions and warnings on the equipment should be noted.
10. Never pour any liquid into the opening that could damage or cause electrical shock.
11. If any of the following situations arises, get the equipment checked by a service personnel:
 - The power cord or plug is damaged
 - Liquid has penetrated into the equipment
 - The equipment has been exposed to moisture
 - The equipment has not work well or you can not get it work according to User's Manual.
 - The equipment has dropped and damaged
 - If the equipment has obvious sign of breakage
12. **DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT UNCONDITIONED, STORAGE TEMPERATURE ABOVE 60°C (140°F), IT MAY DAMAGE THE EQUIPMENT.**



CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.

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Introduction

1

Thank you for purchasing MS-6380 (v3.X) motherboard. The MS-6380 (v3.X) ATX mainboard is a high-performance computer mainboard based on **VIA® Apollo KT266A (VT8366A & VT8233)** chipset and designed for the **AMD® Athlon™, Athlon XP or Duron™** (PGA) processor for value business/personal desktop markets.

This chapter includes the following topics:

Mainboard Specification	1-2
Mainboard Layout	1-4
Quick Components Guide	1-5
Key Features	1-6
MSI Special Features	1-7

Chapter 1

Mainboard Specification

CPU

- Supports Socket A (Socket-462) for AMD® Athlon™/Athlon™ XP / Duron™ processor
- Supports 800MHz up to 1800+ MHz processor

Chipset

- VIA® VT8366A chipset (552 BGA)
 - FSB @200/266MHz
 - AGP 4X and PCI Advanced high performance memory controller
- VIA® VT8233 chipset (376 BGA)
 - High Bandwidth V-link Client controller
 - Integrated Faster Ethernet LPC
 - Integrated Hardware Sound Blaster/Direct Sound AC97 audio
 - Ultra DMA 33/66/100 master mode PCI EIDE controller
 - ACPI

Clock Generator

- 100/133MHz clocks are supported.

MainMemory

- Supports six memory banks using three 184-pin DDR DIMMs
- Supports a maximum memory size up to 3GB
- Supports 2.5v DDR SDRAM DIMM

Slots

- One AGP slot
 - AGP (Accelerated Graphics Port) specification compliant
 - Supports AGP 2.0 1x/2x/4x
- One CNR (Communication Network Riser) slot
- Five 32-bit Master PCI Bus slots
- Supports 3.3V/5V PCI bus Interface

On-BoardIDE

- An IDE controller on the VIA® VT8233 chipset provides IDE HDD/CD-ROM with PIO, Bus Master and Ultra DMA 33/66/100 operation modes
- Can connect up to 4 IDE devices

Audio

- Chip integrated (2 channel S/W audio)
 - Direct Sound AC97 Audio

On-Board Peripherals

- On-Board Peripherals include:
 - 1 floppy port supports 2 FDD with 360K, 720K, 1.2M, 1.44M and 2.88Mbytes
 - 2 serial ports (COMA + COMB)
 - 1 parallel port supporting SPP/EPP/ECP mode
 - 6 USB 1.1 ports (Rear * 2/Front * 4)
 - 1 IrDA connector for SIR/ASKIR/HPSIR
 - 1 Audio/Game port

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.

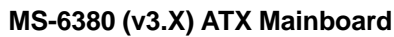
Dimension

- ATX Form Factor (30.4 cm X 23.5 cm)

Mounting

- 6 mounting holes

Mainboard Layout



Quick Components Guide

Component	Function	Reference
DDR1~3	Installing DDR SDRAM modules	See p. 2-6~2-7
Socket 462	Installing CPU	See p. 2-2~2-4
CFAN1	Connecting to CPUFAN	See p. 2-20
SFAN1	Connecting to SYSTEM FAN	See p. 2-20
PSFAN1	Connecting to Power Supply FAN	See p. 2-20
ATX Power Supply	Installing power supply	See p. 2-8
IDE1 & IDE2	Connecting to IDE hard disk drive	See p.2-14
FDD1	Connecting to floppy disk drive	See p.2-13
JUSB1~4	Connecting to USB interfaces	See p. 2-21
PCI Slot 1~5	Installing expansion cards	See p. 2-27
AGP Slot	Installing AGP cards	See p. 2-27
CNR Slot	Installing expansion cards	See p. 2-27
JMDM1	Connecting to modem module	See p. 2-17
JWOL1	Connecting to LAN card	See p. 2-17
JBAT1	Clearing CMOS data	See p. 2-24
JFP1 & F_P2	Connecting to case	See p. 2-15
J7	Connecting to IR module	See p. 2-18
J3	Connecting to chassis intrusion switch	See p. 2-18
JAU1 & JAUDIO2	Connecting to front panel audio connector	See p. 2-22
JKBV1	Enabling PS/2 Keyboard/Mouse/ Rear USB wake up function	See p. 2-25
J12	Enabling Front USB device wake up function	See p. 2-26

Chapter 1

Key Features

- ATX Form Factor
- CPU: Socket A for AMD® Duron™/Athlon™/Athlon XP processor
- Memory: 3 PC1600/PC2100 DDR DIMMs
- Slot: 1 AGP slot, 1 CNR slot, 5 PCI slots
- I/O: 2 serial ports, 1 parallel port, 6 USB 1.1 ports, 1 floppy port, 1 IrDA connector, 3 Audio/1 Game port
- Fuzzy Logic™ III overclocking utility (Optional)
- PC Alert™ III system hardware monitor (Optional)
- Audio: 2 Channel S/W audio integrated
- PCI 2.2 LAN Wake up Function
- Modem (External/Internal) Ring Wake up Function

MSI Special Features

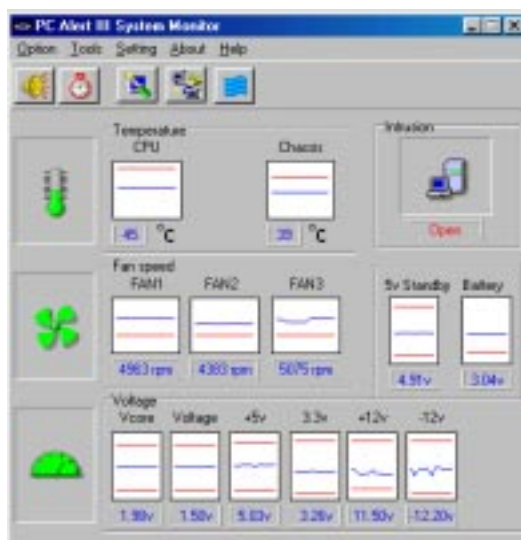
The MSI special features are designed by MSI R&D which are only available in MSI mainboards. The mainboard is equipped with OPTIONAL Fuzzy Logic™ III and PC Alert™ III.

PC Alert™ III (Optional)

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

- * monitor CPU & system temperatures
- * monitor fan speed(s)
- * monitor system voltage
- * monitor chassis intrusion

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



Note: Items shown on PC Alert III vary depending on your system's status.

Chapter 1



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

Fuzzy Logic™ III (Optional)

The Fuzzy Logic™ III utility allows users to overclock the CPU FSB (Front Side Bus) frequency in the Windows environment. Select the CPU frequency you prefer and click Go to apply the frequency or click Save allowing the system to run at the specified frequency each time when the system is powered on.



Features:

- Displays Current System Status
 - CPU Fan
 - CPU Temp.
 - Vcore
 - Vio
 - Memory Clock
 - CPU Clock
 - AGP Clock
 - PCI Clock
- Adjusts CPU FSB Frequency

Hardware Setup

2

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.

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
Memory	2-6
Power Supply	2-8
Back Panel	2-9
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Jumpers	2-24
Slots	2-27

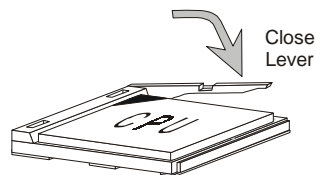
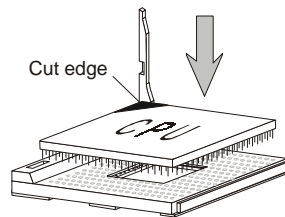
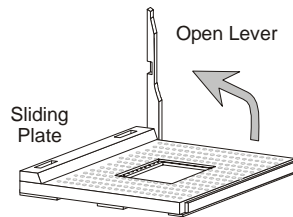
Chapter 2

Central Processing Unit: CPU

The mainboard supports AMD® Athlon™, Athlon XP and Duron™ processors. It uses a CPU socket called Socket A for easy CPU installation. **Make sure the CPU has a Heat Sink and a cooling fan attached on the top to prevent overheating.** If you do not find the Heat Sink and cooling fan, contact your dealer to purchase and install 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 cut edge. The cut edge should point towards the lever pivot. The CPU will only fit in the correct orientation.
3. Hold the CPU firmly, and then press the lever down to complete the installation.





WARNING! Thermal Issue for CPU

As processor technology pushes to faster speeds and higher performance, thermal management becomes increasingly crucial when building computer systems. Maintaining the proper thermal environment is key to reliable operation. As such, the processor must be maintained in the specified thermal requirements.

AMD Athlon™/Duron™/Athlon XP processor with a speed of **600MHz and above** requires LARGER heatsink and fan. You also need to add thermal grease between the CPU and heatsink to improve heat dissipation. Then, make sure that the CPU and heatsink are securely fastened and in good contact with each other. These are needed to prevent damaging the processor and ensuring reliable operation. If you want to get more information on the proper cooling, you can visit AMD's website for reference.

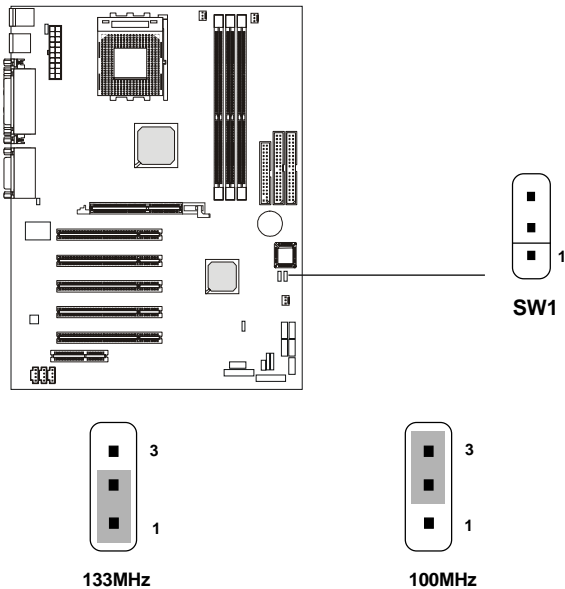
Chapter 2

CPU Core Speed Derivation Procedure

If	CPU Clock	=	100MHz
	Core/Bus ratio	=	7
then	CPU core speed	=	Host Clock x Core/Bus ratio
		=	100MHz x 7
		=	700MHz

CPU Clock Selection Jumper: SW1

The default hardware configuration for CPU Clock Frequency is set at 100MHz. To use a 133MHz CPU, you need to adjust the CPU clock up to 133MHz by setting the SW1 jumper.





WARNING!

Replacing CPU

While replacing the CPU, always turn off the ATX power supply or unplug the power cable of the ATX power supply from grounded outlet first to ensure the safety of CPU.

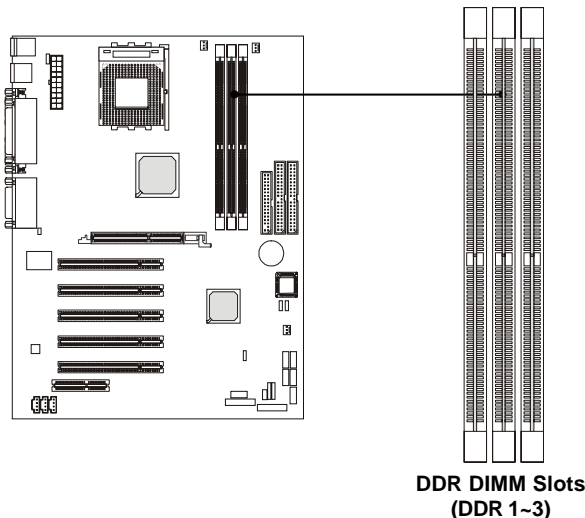
Overclocking

*This motherboard is 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 is not recommended. **We do not guarantee the damages or risks caused by inadequate operation or beyond product specifications.***

Chapter 2

Memory

The mainboard provides 3 sockets for 184-pin unbuffered DDR DIMM (Double In-Line Memory Module) modules and supports a maximum memory size of 3GB.



Introduction to DDR SDRAM

You can install PC1600/PC2100 DDR SDRAM modules on the DDR DIMM slots (DDR 1~3).

DDR (Double Data Rate) SDRAM is similar to conventional SDRAM, but doubles the rate by transferring data twice per cycle. It transfers data on both the rising and falling edges of the clock. Conventional SDRAM only uses the rising edge of the clock to transfer data. Therefore, conventional SDRAM is called SDR (Single Data Rate) SDRAM.

DDR SDRAM uses 2.5 volts as opposed to 3.3 volts used in SDR SDRAM, and requires 184-pin DIMM modules rather than 168-pin DIMM modules used by SDR SDRAM. DDR SDRAM is also known as SDRAM-II, DDR DRAM and DSDRAM (Double-Speed DRAM).

Two types of DDR are available at the time of writing: PC1600 & PC2100. PC1600 DDR SDRAM running at 100MHz will produce about 1.6GB/s memory bandwidth. PC2100 running at 133MHz will produce 2.1GB/s memory bandwidth. High memory bandwidth makes DDR an ideal solution for high performance PC, workstations and servers.

DIMM Modules Combination

At least one DIMM module should be installed on the motherboard. Memory modules can be installed on the slots in any order. The single-/double-sided memory modules that each DIMM slot supports are listed as below:

Socket	Memory Module	Total Memory
DDR 1 (Bank0 & Bank1)	S/D	64MB ~ 1GB
DDR 2 (Bank2 & Bank3)	S/D	64MB ~ 1GB
DDR 3 (Bank4 & Bank5)	S/D	64MB ~ 1GB
Maximum System Memory Supported		64MB ~ 3GB

S: Single Side

D: Double Side

Installing DIMM Modules

1. The DDR DIMM has only one notch on the center of module. The module will only fit in the right orientation.

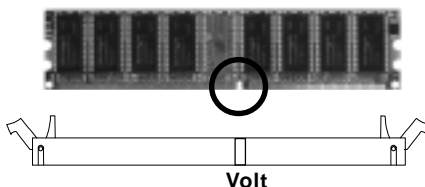


Front Side



Rear Side

2. Insert the DIMM memory module vertically into the DIMM slot. Then push it in.



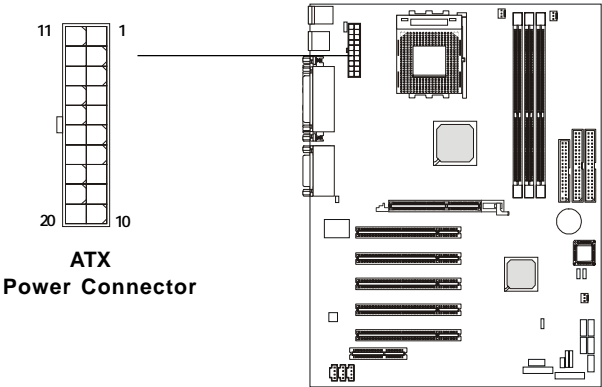
3. The plastic clip at each side of the DIMM slot will automatically close.

Power Supply

The mainboard supports ATX power supply for the power system. Before inserting the power supply connector, always make sure that all components are installed properly to ensure that no damage will be caused.

ATX 20-Pin Power Supply

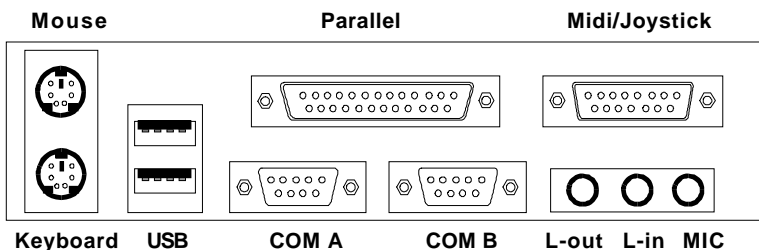
This connector allows you to connect to an ATX power supply. To connect to the ATX power supply, make sure the plug of the power supply is inserted in the proper orientation and the pins are aligned. Then push down the power supply firmly into the connector.



PIN	SIGNAL	PIN	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

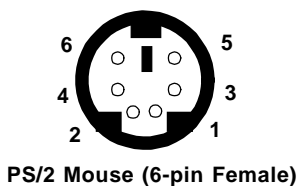
Back Panel

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.

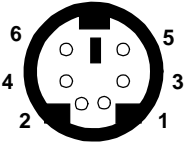


Pin Definition

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

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.

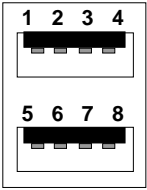


PS/2 Keyboard (6-pin Female)

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

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-compatible devices. You can plug the USB device directly into this connector.

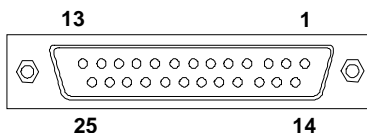


USB Ports

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	Negative Data Channel 1
7	+Data 1	Positive Data Channel 1
8	GND	Ground

Parallel Port Connector

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



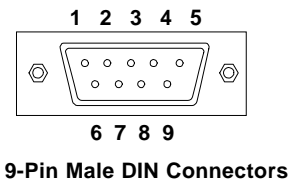
Pin Definition

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	AUTO FEED#	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	Ground

Chapter 2

Serial Port Connectors: COM A & COM B

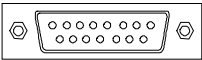
The mainboard has two 9-pin male DIN connectors for serial port COM A and COM B. You can attach a serial mouse or other serial devices.



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

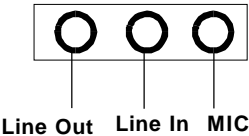
Joystick/Midi Connectors

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



Audio Port Connectors

Line Out is to connect speakers or headphones. **Line In** is a connector for external CD player, Tape player or other audio devices. **Mic** is used to connect to a microphone.

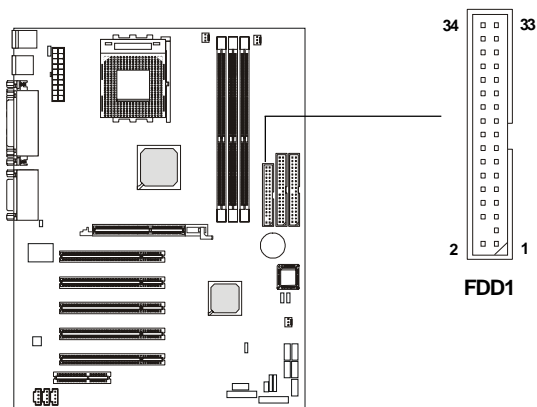


Connectors

The mainboard provides connectors to connect to FDD, IDE HDD, case, modem, USB Ports, IR module and CPU/Power supply/System FAN.

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.



Chapter 2

Hard Disk Connectors: IDE1 & IDE2

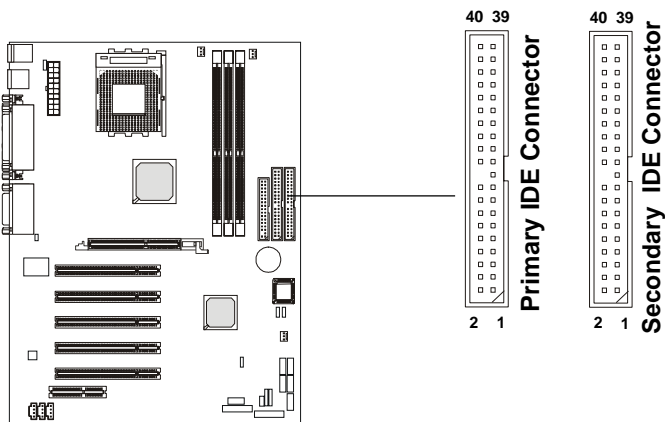
The mainboard uses an IDE controller on the VIA® VT8233 chipset that provides PIO mode 0-4, Bus Master, and Ultra DMA 33/66/100 modes. It has two HDD connectors IDE1 (Primary) and IDE2 (Secondary). You can connect up to four hard disk drives, CD-ROM or 120MB Floppy to IDE1 and IDE2.

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.



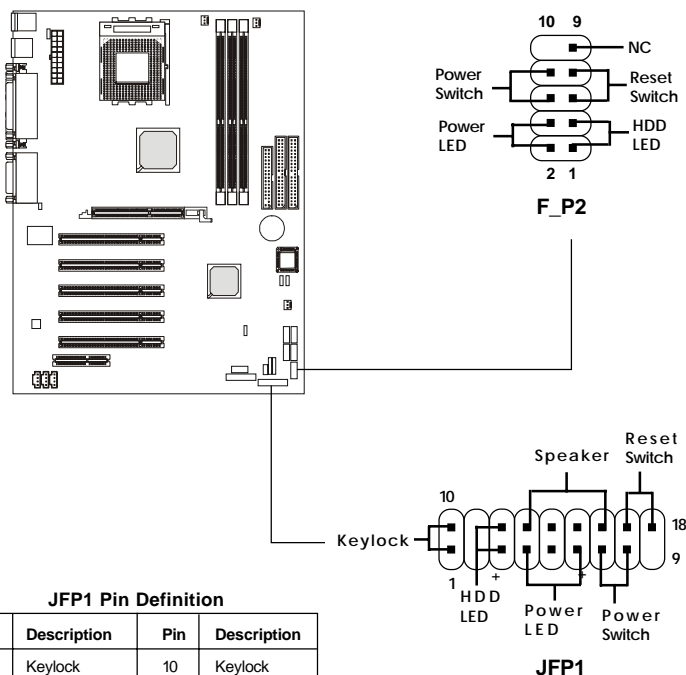
TIP

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

Case Connectors: JFP1 & F_P2

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

The other case connector block **F_P2** is compliant to **Intel Front Panel I/O Connectivity Design Guide** and can connect to the the Power Switch, Reset Switch, Power LED and HDD LED on the case.



Chapter 2

Power Switch

Connect to a 2-pin push button switch.

Reset Switch

Reset switch is used to reboot the system rather than turning the power ON/OFF. Avoid rebooting while the HDD is working. 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. Connect the Power LED from the system case to this pin.

Speaker (JFP1 only)

Speaker from the system case is connected to this pin.

HDDLED

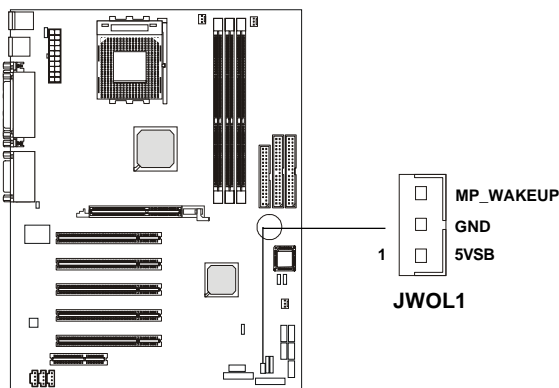
HDD LED shows the activity of a hard disk drive connected to the IDE1 or IDE2 connector. Avoid turning the power off while the HDD is working. You can connect the HDD LED from the system case to this pin.

Keylock (JFP1 only)

Keylock allows you to disable the keyboard for security purpose. You can connect the keylock to this pin.

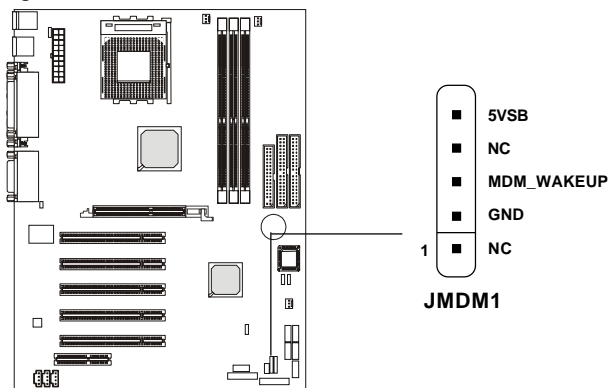
Wake On LAN Connector: JWOL1

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.



Wake On Ring Connector: JMDM1

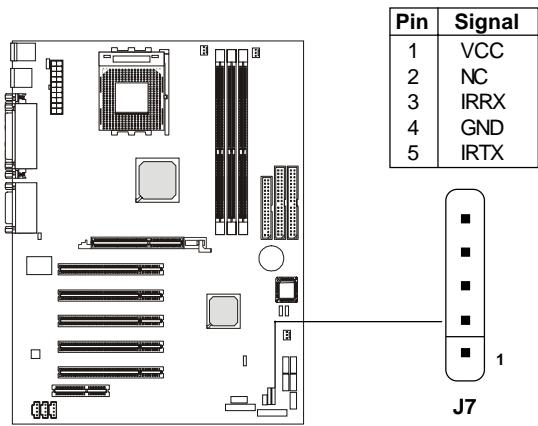
This connector allows you to connect to a modem card with Wake On Ring function. The connector will power up the system when a signal is received through the modem card.



Note: Modem wake-up signal is active “low”.

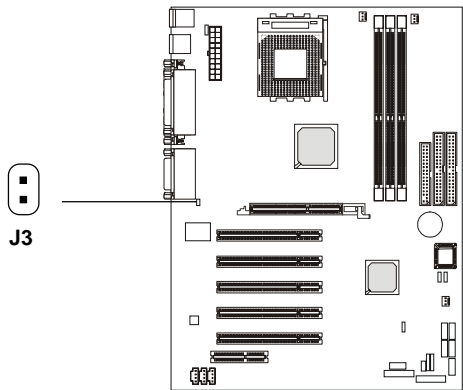
IrDA Infrared Module Connector: J7

This connector allows you to connect to an IrDA Infrared module. You must configure the setting through the BIOS setup to use the IR function.



Chassis Intrusion Switch Connector: J3

This connector is connected to a 2-pin chassis switch. If the chassis is opened, the switch will be short. The system will record this status and show a warning message on the screen. To clear the warning, you must enter the BIOS utility and clear the record.

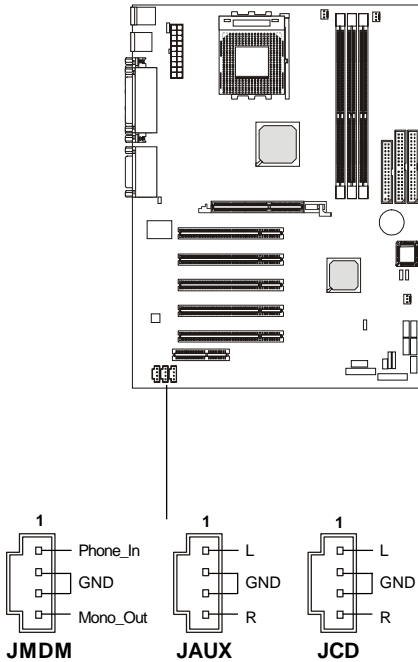


CD-In/Aux Line-In/Modem-In Connector: JCD/JAUX/JMDM

JCD connector is for CD-ROM audio connector.

JAUX connector is for DVD add-on card with Line-in connector.

JMDM connector is for modem with internal audio connector.



Note:

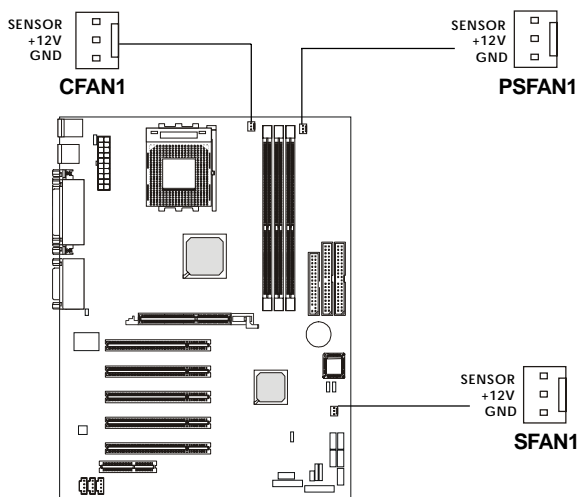
Mono_Out is connected to the Modem speaker-out connector.

Phone_In is connected to the Modem Microphone-In connector.

Chapter 2

Fan Power Connectors: CFAN1/SFAN1/PSFAN1

The CFAN1 (processor fan), SFAN1 (system fan) and PSFAN1 (power supply fan) support system cooling fan with +12V. It supports three-pin head connector. When connecting the wire to the connectors, 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. If 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.

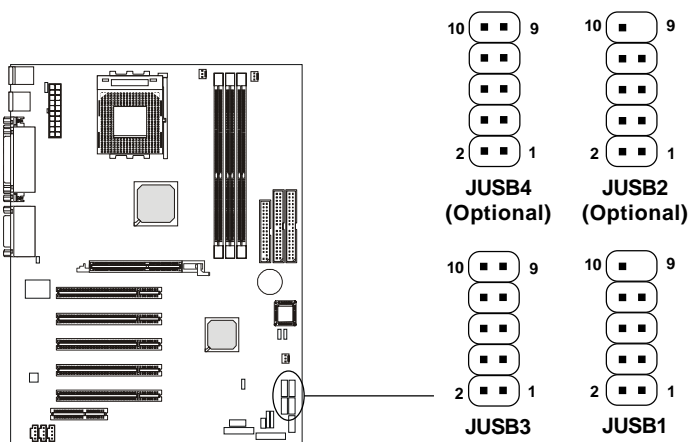


Note:

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.

Front USB Connectors: JUSB1, JUSB2 (Optional), JUSB3 & JUSB4 (Optional)

The mainboard provides Front USB (Universal Serial Bus) pin headers that allow you to connect optional USB ports for front panel. **JUSB1 & JUSB2 are compliant to Intel Front Panel I/O Connectivity Design Guide. JUSB2 & JUSB4 are OPTIONAL.**



USB3/4 Pin Definition

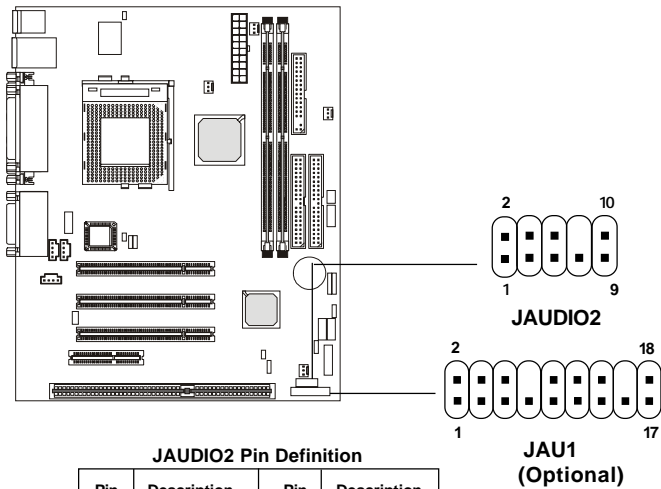
Pin	Description	Pin	Description
1	USBPWR	2	GND
3	USBP2-	4	NC
5	USBP2+	6	USBP3+
7	NC	8	USBP3-
9	GND	10	USBPWR

USB1/2 Pin Definition

Pin	Description	Pin	Description
1	USBPWR	2	USBPWR
3	USBP4-	4	USBP5-
5	USBP4+	6	USBP5+
7	GND	8	GND
9	NC	10	USBOC

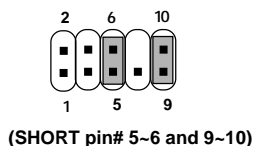
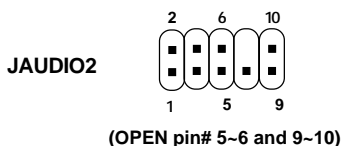
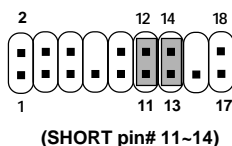
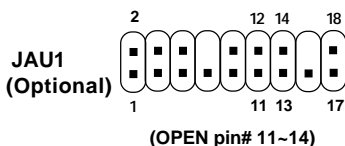
Front Panel Audio Connectors: JAU1 (Optional) & JAUDIO2

You can connect optional audio connectors to Front Panel Audio Headers. **JAUDIO2** is compliant to Intel Front Panel I/O Connectivity Design Guide. As for JAU1, it is **OPTIONAL**.





Note: To have the Line-out connector on the back panel work properly, you need to **place the jumper on pin# 11~14 of the JAU1 connector or on pin#5~6 and 9~10 of the JAUDIO2 connector**. Otherwise, this Line-out connector will not function and nothing can be heard through speakers or headphones attached to the connector. But front panel audio connector is enabled at this point and allows you to connect speakers or headphones.



- Disable Line-out connector on the back panel
- Enable Front Panel Audio Connector

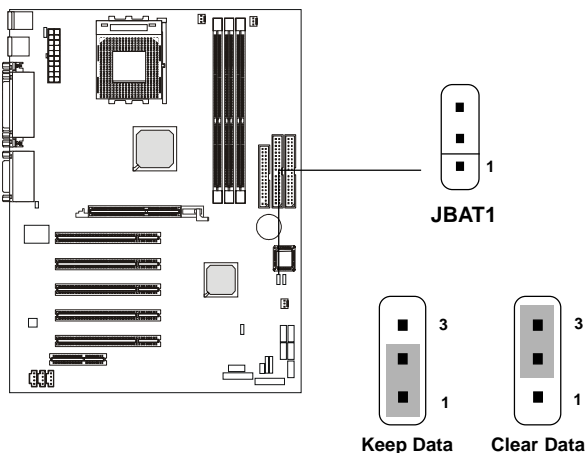
- Enable Line-out connector on the back panel
- Disable Front Panel Audio Connector

Jumpers

The motherboard provides the following jumpers for you to set the computer's function. This section will explain how to change your motherboard's function through the use of jumpers.

Clear CMOS Jumper: JBAT1

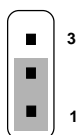
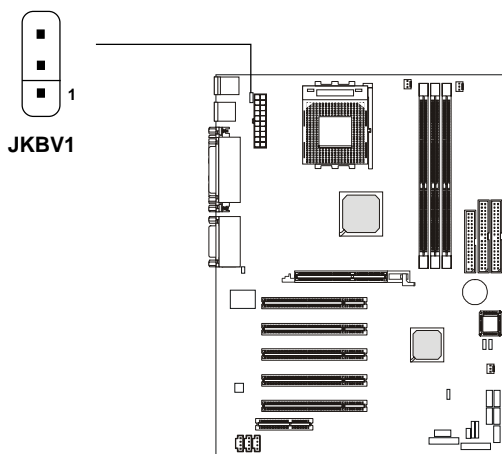
There is a CMOS RAM on board that has a power supply from external battery to keep the data of system configuration. With the CMOS RAM, the system can automatically boot OS every time it is turned on. If you want to clear the system configuration, use the JBAT1 (Clear CMOS Jumper) to clear data. Follow the instructions below to clear the data:



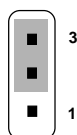
You can clear CMOS by shorting 2-3 pin while the system is off. Then return to 1-2 pin position. Avoid clearing the CMOS while the system is on; it will damage the mainboard.

Keyboard Wake-up Jumper: JKBV1

The JKBV1 jumper is used to set PS/2 keyboard/mouse and **Rear USB** wake-up function. To use the function, you should also go to BIOS to enable the PS/2 keyboard/mouse & USB wake-up (power on) function.



**VCC 5V --
Disable Keyboard
Power On Function**



**5V StandBy (Default)--
Enable Keyboard
Power On Function**

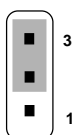
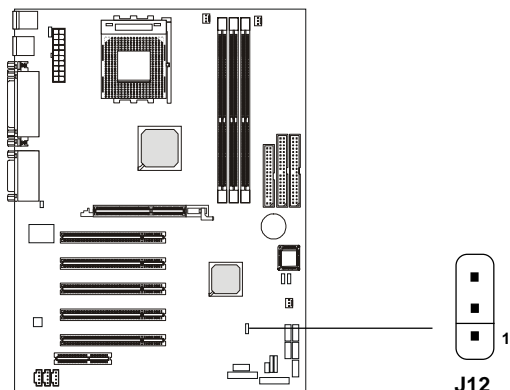


Note: To be able to use this function, you need a power supply that provides enough power for this feature. (Power supply with 750mA 5V Stand-by)

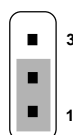
Chapter 2

Front USB Wake-up Jumper: J12

The J12 jumper is used to set **Front USB** device wake-up function. To use the function, you should also go to BIOS to enable the USB wake-up (power on) function.



**5V StandBy (Default)--
Enable Front USB
Wake Up Function**



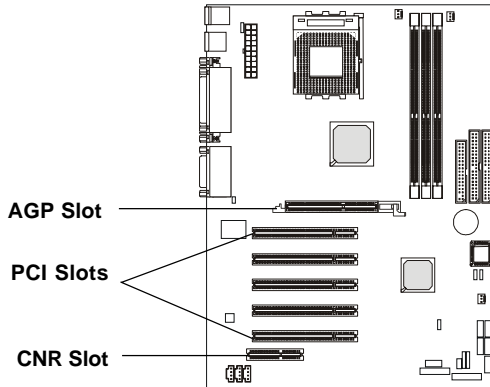
**VCC 5V --
Disable Front USB
Wake Up Function**



Note: To be able to use this function, you need a power supply that provides enough power for this feature. (Power supply with 750mA 5V Stand-by)

Slots

The motherboard provides one AGP slot, five 32-bit Master PCI slots, and one CNR slot.



AGP (Accelerated Graphics Port) Slot

The AGP slot allows you to insert the AGP graphics card. AGP is an interface specification designed for the throughput demands of 3D graphics. It introduces a 66MHz, 32-bit channel for the graphics controller to directly access main memory and provides three levels of throughputs: 1x (266Mbps), 2x (533Mbps) and 4x (1.07Gbps).

PCI Slots

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

CNR (Communication Network Riser)

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

Chapter 2

PCI Interrupt Request Routing

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. **To install a PCI expansion card on a PCI *shared* slot, you must make sure the card's driver supports "IRQ shared" function or there is no need to assign an IRQ to the device.**

The "AGP/PCI" IRQ pins are typically connected to the PCI bus INTA#-INTD# pins as follows:

	Order 1	Order 2	Order 3	Order 4
AGP	INT A#	INT B#		
PCI Slot 1	INT A#	INT B#	INT C#	INT D#
PCI Slot 2	INT B#	INT C#	INT D#	INT A#
PCI Slot 3	INT C#	INT D#	INT A#	INT B#
PCI Slot 4	INT D#	INT A#	INT B#	INT C#
PCI Slot 5	INT A#	INT B#	INT C#	INT D#

The mainboard supports PCI Slot 1~5 Bus Master.

AWARD® BIOS Setup

3

The mainboard uses AWARD® BIOS ROM that provides a Setup utility for users to modify the basic system configuration. The information is stored in a battery-backed CMOS RAM so it retains the Setup information when the power is turned off.

The chapter contains the following topics:

Entering Setup	3-2
Control Keys	3-2
Getting Help	3-3
The Main Menu	3-4
Standard CMOS Features	3-6
Advanced BIOS Features	3-9
Advanced Chipset Features	3-13
Integrated Peripherals	3-17
Power Management Setup	3-23
PnP/PCI Configurations	3-28
PC Health Status	3-30
Frequency/Voltage Control	3-32
Load Fail-Safe/Optimized Defaults	3-34
Set Supervisor/User Password	3-36
Save & Exit Setup	3-38
Exit Without Saving	3-39

Chapter 3

Entering Setup

Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press key to enter Setup.

Hit DEL if you want to run SETUP

If the message disappears before you respond and you still wish to enter Setup, restart the system by turning it OFF and On or pressing the RESET button. You may also restart the system 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

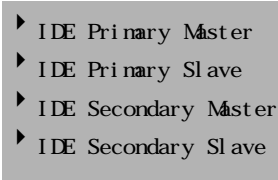
After entering the Setup utility, the first screen you see is the Main Menu.

Main Menu

The main menu displays the setup categories the BIOS supplies. You can use the arrow keys (↑↓) to select the item. The on-line description for the selected setup category is displayed on the bottom of the screen.

Sub-Menu

If you find a right pointer symbol appears to the left of certain fields (as shown in the right view), that means a sub-menu containing additional options for the field can be launched from this field. To enter the sub-menu, highlight the field and press <Enter>. Then you can use control keys to move between and change the settings of the sub-menu. To return to the main menu, press <Esc>.



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

General Help <F1>

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

Chapter 3

The Main Menu

Once you enter AWARD® BIOS CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu displays twelve configurable functions and two exit choices. Use arrow keys to move among the items and press <Enter> to enter the sub-menu.

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software		
<ul style="list-style-type: none">▸ Standard CMOS Features▸ Advanced BIOS Features▸ Advanced Chipset Features▸ Integrated Peripherals▸ Power Management Setup▸ PnP/PCI Configurations▸ PC Health Status		<ul style="list-style-type: none">▸ Frequency/Voltage Control<ul style="list-style-type: none">Load Fail-Safe DefaultsLoad Optimized DefaultsSet Supervisor PasswordSet User PasswordSave & Exit SetupExit Without Saving
ESC : Quit F9 : Menu in BIOS		↑↓←→ : Select Item
F10 : Save & Exit Setup		
Time, Date, Hard Disk Type...		

Standard CMOS Features

Use this menu for basic system configurations, such as time, date etc.

Advanced BIOS Features

Use this menu to setup the items of Award® special enhanced features.

Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize your system's performance.

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 Configurations

This entry appears if your system supports PnP/PCI.

PC Health Status

This entry displays the current status of your PC.

Frequency/Voltage Control

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 of your PC.

Load Optimized Defaults

Use this menu to load the default factory settings for BIOS for optimal system performance.

Set Supervisor Password

Use this menu to set Supervisor Password.

Set User Password

Use this menu to set User Password.

Save & Exit Setup

Save changes to CMOS and exit setup.

Exit Without Saving

Abandon all changes and exit setup.

Chapter 3

Standard CMOS Features

The items inside Standard CMOS Features menu are divided into 13 categories. Each category includes none, one or more setup items. Use the arrow keys to highlight the item you want to modify and use the <PgUp> or <PgDn> keys to switch to the value you prefer.

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software Standard CMOS Features		
Date (mm:dd:yy) : Time (hh:mm:ss) :	Thu, Oct 4 2001 00:00:00	Item Help
► IDE Primary Master ► IDE Primary Slave ► IDE Secondary Master ► IDE Secondary Slave		Menu Level ► Change the day, month, year and century
Drive A Drive B	1.44M, 3.5 in. None	
Video Halt On	E G A / V G A All, But Keyboard	
Base Memory Extended Memory Total Memory	640K 65472K 66112K	
↑↓←→: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 want (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 can be adjusted by users.

Time

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

IDE Primary Master/Primary Slave/Secondary Master/Secondary Slave

Press PgUp/<+> or PgDn/<-> to select the hard disk drive type. The specification of hard disk drive will show up on the right hand according to your selection.

IDE Primary Master		
IDE HDD Auto-Detection	Press Enter	Item Help
IDE Primary Master	Auto	Menu Level ▶▶ To auto-detect the HDD s size, head...on this channel
Access Mode	Auto	
Capacity	15021MB	
Cylinder	291024	
Head	16	
Precomp	0	
Landing Zone	29103	
Sector	63	

Access Mode	The settings are Auto, CHS, LBA and Large.
Capacity	The formatted size of the storage device.
Cylinder	Number of cylinders.
Head	Number of heads.
Precomp	Write precompensation cylinder.
Landing Zone	Cylinder location of the landing zone.
Sector	Number of sectors.

Drive A/B

This item allows you to set the type of floppy drives installed. Available options: *None*, *360K*, *5.25 in.*, *1.2M*, *5.25 in.*, *720K*, *3.5 in.*, *1.44M*, *3.5 in.*, *2.88M*, *3.5 in.*.

Video

The item sets the type of video adapter used for the primary monitor of the system . Available options: *EGA/VGA* , *CGA 40*, *CGA 80* and *MONO*.

Chapter 3

Halt On

The item determines whether the system will stop if an error is detected at boot. Available options are:

<i>All Errors</i>	The system stops when any error is detected.
<i>No Errors</i>	The system doesn't stop for any detected error.
<i>All, But Keyboard</i>	The system doesn't stop for a keyboard error.
<i>All, But Diskette</i>	The system doesn't stop for a disk error.
<i>All, But Disk/Key</i>	The system doesn't stop for either a disk or a keyboard error.

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 writedata into this area, BIOS will show a warning message on screen and alarm beep.
CPU L2 Cache ECC Checking	Enabled	
Quick Power On Self Test	Enabled	
First Boot Device	Floppy	
Second Boot Device	HDD-0	
Third Boot Device	C D R O M	
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	
APIC Mode	Enabled	
MPS Version Control For OS	1.4	
OS Select for DRAM > 64MB	Non-OS2	
Video BIOS Cacheable	Disabled	
↑↓←→: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

The item is to set the Virus Warning feature for IDE Hard Disk boot sector protection. If the function is enabled and any attempt to write data into this area is made, BIOS will display a warning message on screen and beep. Settings are *Disabled* and *Enabled*. Default value is *Disabled*.

CPU Internal/External Cache

Cache memory is additional memory that is must faster than conventional DRAM (system memory). When the CPU requests data, the system transfers requested data from main DRAM into cache memory, for even faster access by the CPU. The settings enable/disable the internal cache (also known as L1 or level 1 cache) and external cache (also known as L2 or level 2 cache). Settings: *Enabled* and *Disabled*.

Chapter 3

CPU L2 Cache ECC Checking

This allows you to enable or disable the ECC (Error-Correcting Code) feature for error detection and correction when data passes through L2 cache memory. Settings: *Enabled* and *Disabled*.

Quick Power On Self Test

The option speeds up Power On Self Test (POST) after you power on the computer. When set to *Enabled*, BIOS will shorten or skip some check items during POST. Settings: *Enabled* and *Disabled*.

First/Second/Third Boot Device

The items allow you to set the sequence of boot devices where BIOS attempts to load the disk operating system. The settings are:

<i>Floppy</i>	The system will boot from floppy drive.
<i>LS120</i>	The system will boot from LS-120 drive.
<i>HDD-0</i>	The system will boot from the first HDD.
<i>SCSI</i>	The system will boot from the SCSI.
<i>CDROM</i>	The system will boot from the CD-ROM.
<i>HDD-1</i>	The system will boot from the second HDD.
<i>HDD-2</i>	The system will boot from the third HDD.
<i>HDD-3</i>	The system will boot from the fourth HDD.
<i>ZIP</i>	The system will boot from ATAPI ZIP drive.
<i>LAN</i>	The system will boot from the Network drive.
<i>Disabled</i>	Disable this sequence.

Boot Other Device

Setting the option to *Enabled* allows the system to try to boot from other device if the system fails to boot from the 1st/2nd/3rd boot device.

Swap Floppy Drive

Setting to *Enabled* will swap floppy drives A: and B:.

Boot Up Floppy Seek

This setting causes the BIOS to search for floppy disk drives at boot time. When enabled, the BIOS will activate the floppy disk drives during boot process: the drive activity light will come on and the head will move back and forth once. Settings: *Enabled* and *Disabled*.

Boot Up NumLock Status

This item is to set the Num Lock status when the system is powered on. Setting to *On* will turn on the Num Lock key when the system is powered on. Setting to *Off* will allow end users to use the arrow keys on the numeric keypad. Settings: *On* and *Off*.

Gate A20 Option

This item is to set the Gate A20 status. A20 refers to the first 64KB of extended memory. When *Fast* is selected, the Gate A20 is controlled by Port92 or chipset specific method resulting in faster system performance. When *Normal* is selected, A20 is controlled by a keyboard controller or chipset hardware.

Typematic Rate Setting

This item is used to enable or disable the typematic rate setting including Typematic Rate & Typematic Delay.

Typematic Rate (Chars/Sec)

After **Typematic Rate Setting** is enabled, this item allows you to set the rate (characters/second) at which the keys are accelerated. Settings: *6, 8, 10, 12, 15, 20, 24* and *30*.

Typematic Delay (Msec)

This item allows you to select the delay between when the key was first pressed and when the acceleration begins. Settings: *250, 500, 750* and *1000*.

Security Option

This specifies the type of BIOS password protection that is implemented. Settings are described below:

Option	Description
Setup	The password prompt appears only when end users try to run Setup.
System	A password prompt appears every time when the computer is powered on or when end users try to run Setup.

Chapter 3

APICMode

This field is used to enable or disable the APIC (Advanced Programmable Interrupt Controller). Due to compliance to PC2001 design guide, the system is able to run in APIC mode. Enabling APIC mode will expand available IRQs resources for the system. Settings: *Enabled* and *Disabled*.

MPS Version Control For OS

This field allows you to select which MPS (Multi-Processor Specification) version to be used for the operating system. You need to select the MPS version supported by your operating system. To find out which version to use, consult the vendor of your operating system. Settings: *1.4* and *1.1*.

OS Select for DRAM > 64MB

This allows you to run the OS/2[®] operating system with more than 64MB DRAM. When you choose *Non-OS2*, you cannot run the OS/2[®] operating system with more than 64MB DRAM. But it is possible if you choose *OS2*.


Video BIOS Cacheable

Setting to *Enabled* allows caching of the Video BIOS ROM at C0000h-F7FFFh and leads to better video performance. But any program attempt to write to this memory area will cause a system error.

Advanced Chipset Features

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Advanced Chipset Features

▶DRAM Clock/Drive Control	Press Enter	Item Help
▶AGP & P2P Bridge Control	Press Enter	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		

 **Note:** Change these settings only if you are familiar with the chipset.

DRAM Clock/Drive Control

Press <Enter> to enter the sub-menu, and you will see a sub-menu screen similar to the following:

DRAM Clock/Drive Control		
DRAM Timing by SPD	Yes	Item Help
x DRAM Frequency(MHz)	Auto	Menu Level ▶▶
x SDRAM CAS Latency	Auto	Select DRAM timing if control by SPD.
x Bank Interleave	Auto	Yes:
x Row Precharge	Auto	All DRAM timing programing by SPD.
x RAS Pulse	Auto	No:
x RAS to CAS	Auto	(1)SDRAM CAS-Latency
x Burst Length	Auto	-->Manual
DRAM Command Rate	2T	
Current Host(FSB) Clock	133MHz	
Current DRAM Frequency	133MHz	
Current DDR Frequency	266MHz	

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DRAM Timing by SPD

The field decides whether DRAM timing is configured by reading the contents of the SPD (Serial Presence Detect) device on the DRAM module. Setting to *Enabled* makes **DRAM Frequency(MHz)**, **DRAM CAS Latency**, **Bank Interleave**, **Row Precharge**, **RAS Pulse**, **RAS to CAS** and **Burst Length** automatically determined by BIOS according to the configurations on the SPD.

DRAMFrequency(MHz)

The chipset supports synchronous and asynchronous mode between host clock and DRAM clock frequency. The settings are:

<i>HCLK</i>	The DRAM clock will be equal to the Host Clock.
<i>HCLK-33</i>	The DRAM clock will be equal to the Host Clock minus 33MHz. For example, if the Host Clock is 133MHz, the DRAM clock will be 100MHz.
<i>HCLK+33</i>	The DRAM clock will be equal to Host Clock plus 33MHz. For example, if the Host Clock is 100MHz, the DRAM clock will be 133MHz.
<i>Auto</i>	BIOS automatically determines the DRAM clock frequency.

DRAMCASLatency

The item controls the timing delay (in clock cycles) before SDRAM starts a read command after receiving it. Settings: *Auto*, 2, 2.5 and 3. 2 increases system performance while 3 provides more stable system performance.

Bank Interleave

The item is used to enable or disable bank interleave feature. Settings: *Auto* and *Disabled*.

Row Precharge

This setting allows you to select the number of DRAM clocks allocated for the Row Address Strobe (RAS#) signal to accumulate its charge before the DRAM is refreshed. If insufficient time is allowed, refresh may be incomplete and data lost. The less the clock cycles, the faster the DRAM performance. Settings: *3T*, *2T* and *Auto*.

RAS Pulse

This setting allows you to select the number of DRAM clock cycles allotted for the RAS pulse width, according to DRAM specifications. The less the clock cycles, the faster the DRAM performance. Settings: *6T*, *5T* and *Auto*.

RAS to CAS

When DRAM is refreshed, both rows and columns are addressed separately. This setup item allows you to determine the timing of the transition from RAS (row address strobe) to CAS (column address strobe). The less the clock cycles, the faster the DRAM performance. Settings: *3T*, *2T* and *Auto*.

Burst Length

This setting allows you to set the size of Burst-Length for DRAM. Bursting feature is a technique that DRAM itself predicts the address of the next memory location to be accessed after the first address is accessed. To use the feature, you need to define the burst length, which is the actual length of burst plus the starting address and allows internal address counter to properly generate the next memory location. The bigger the size, the faster the DRAM performance. Settings: *4*, *8* and *Auto*.

DRAMCommandRate

This setting controls the DRAM command rate. Selecting *1T* allows DRAM signal controller to run at 1T (T=clock cycles) rate. Selecting *2T* makes DRAM signal controller run at 2T rate. *1T* is faster than *2T*. Settings: *2T* and *1T*.

Current Host (FSB) Clock, Current DRAM/DDR Frequency

These items display current CPU host clock, DRAM/DDR clock frequency. **Current DDR Frequency** appears only when DDR DRAMs are installed.

AGP & P2P Bridge Control

Press <Enter> to go to the sub-menu screen similar to the following.

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AGP & P2P Bridge Control		
AGP Aperture Size	64 M	Item Help Menu Level ▶▶
AGP Driving Control	Auto	
x AGP Driving Value	D A	
AGP Fast Write	Disabled	

AGP Aperture Size

The field selects the size of the Accelerated Graphics Port (AGP) aperture. Aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. Settings: *4M*, *8M*, *16M*, *32M*, *64M*, *128M* and *256M*.

AGP Driving Control

This field is used to adjust the AGP driving force. Selecting *Manual* allows you to select an AGP driving force in **AGP Driving Value**. It is strongly suggested to select *Auto* to avoid causing any system error.

AGP Driving Value

This item specifies an AGP driving force.

AGP Fast Write

The field enables or disables the AGP Fast Write feature. The Fast Write technology allows CPU to write directly to the graphics card without passing anything through the system memory and improves the AGP 4X speed. Select *Enabled* only when the installed AGP card supports the function.

Integrated Peripherals

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Integrated Peripherals

▶ VIA OnChip IDE Device	Press Enter	Item Help
▶ VIA OnChip PCI Device	Press Enter	
InitDisplayFirst	PCI Slot	Menu Level ▶
OnChip USB Controller	All Enabled	
USB Keyboard Support	Disabled	
USB Mouse Support	Disabled	
IDE HDD Block Mode	Enabled	
POWER ON Function	BUTTON ONLY	
KB Power ON Password	Enter	
Hot Key Power ON	Ctrl-F1	
Onboard FDC Controller	Enbaled	
Onboard Serial Port 1	3F8/IRQ4	
Onboard Serial Port 2	2F8/IRQ3	
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	E C P	
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	
↑↓←→:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

VIA OnChip IDE Device

Press <Enter> to go to the sub-menu screen similar to the following:

VIA OnChip IDE Device

OnChip IDE Channel0	Enabled	Item Help
OnChip IDE Channel1	Enabled	
IDE Prefetch Mode	Enabled	Menu Level ▶ ▶
Primary Master PIO	Auto	
Primary Slave PIO	Auto	
Secondary Master PIO	Auto	
Secondary Slave PIO	Auto	
Primary Master U D M A	Auto	
Primary Slave U D M A	Auto	
Secondary Master U D M A	Auto	
Secondary Slave U D M A	Auto	

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OnChip IDE Channel0/1

The integrated peripheral controller contains an IDE interface with support for two IDE channels. Choose *Enabled* to activate each channel separately.

IDE Prefetch Mode

The onboard IDE drive interface supports prefetching, for faster drive accesses. Set to *Disabled* if your primary and/or secondary add-in IDE interface does not support prefetching.

Primary/Secondary Master/Slave PIO

The four items allow you to set a PIO (Programmed Input/Output) mode for each of the four IDE devices that the onboard IDE interface supports. Modes 0~4 provide increased performance. In *Auto* mode, BIOS automatically determines the best mode for each IDE device.

Primary/Secondary Master/Slave UDMA

Ultra DMA implementation is possible only if your IDE device supports it and your operating environment contains a DMA driver. If both your hard drive and software support Ultra DMA 33/66/100, select *Auto* to enable BIOS support.

VIA OnChip PCI Device

Press <Enter> to enter the sub-menu screen similar to the following:

VIA OnChip PCI Device		
VIA-3058 AC97 Audio	Auto	Item Help Menu Level ▶▶
VIA-3068 MC97 Modem	Auto	

VIA-3058 AC97 Audio

This item is used to enable or disable the AC'97 (Audio Codec'97)

feature. Selecting *Auto* allows the mainboard to detect whether an audio device is used. If an audio device is detected, the onboard AC'97 controller will be enabled; if not, the controller is disabled. Disable the function if you want to use other controller cards to connect an audio device. Settings: *Disabled* and *Auto*.

VIA-3068 MC97 Modem

This item is used to enable or disable the MC'97 (Modem Codec'97) feature. Selecting *Auto* allows the mainboard to detect whether a modem is used. If a modem is detected, the onboard MC'97 controller will be enabled; if not, the controller is disabled. Disable the controller if you want to use other controller cards to connect modems. Settings: *Disabled* and *Auto*.

Init Display First

This item specifies which VGA card is your primary graphics adapter. Available settings are *PCI Slot* and *AGP*.

OnChip USB Controller

The item specifies which USB (Universal Serial Bus) Port is enabled. The settings are *All Disabled*, *ALL Enabled*, *1 USB Port* and *2 USB Port*.

USB Keyboard/Mouse Support

Set to *Enabled* if your need to use an USB keyboard/mouse in the operating system that does not support or have any USB driver installed, such as DOS and SCO Unix.

IDE HDD Block Mode

This allows your hard disk controller to use the fast block mode to transfer data to and from the hard disk drive. Block mode is also called block transfer, multiple commands or multiple sector read/write. *Enabled* enables IDE controller to use block mode; *Disabled* allows the controller to use standard mode.

POWER ON Function

This controls how the PS/2 mouse or keyboard can power on the system. Settings are *Password*, *Hot KEY*, *Mouse Left*, *Mouse Right*, *BUTTON ONLY*

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and *Keyboard 98*.

KB Power ON Password

If **POWER ON Function** is set to *Password*, then you can set a password in the field for PS/2 keyboard to power on the system.

Hot Key Power ON

If **POWER ON Function** is set to *Hot KEY*, then you can assign a hot key combination in the field for the PS/2 keyboard to power on the system. Settings: *Ctrl-F1* through *Ctrl-F12*.

Onboard FDC Controller

Use the item to enable or disable the onboard Floppy controller. Select *Enabled* when you have a floppy disk drive installed and want to use it.

Onboard Serial Port 1/2

The items specify the base I/O port address and IRQ for the onboard Serial Port 1 (COM A)/Serial Port 2 (COM B). Selecting *Auto* allows BIOS to automatically determine the correct base I/O port address. Settings: *Disabled*, *3F8/IRQ4*, *2F8/IRQ3*, *3E8/IRQ4*, *2E8/IRQ3* and *Auto*.

UART Mode Select

The field allows you to specify the operation mode for serial port “COM B”. Settings are:

<i>IrDA</i>	IrDA-compliant Infrared Port
<i>ASKIR</i>	Amplitude Shift Keyed Infrared Port
<i>Normal</i>	RS-232C Serial Port

RxD, TxD Active

The item determines the active of RxD, TxD. Settings: “*Hi, Hi*”, “*Hi, Lo*”, “*Lo, Hi*” and “*Lo, Lo*”.

IR Transmission Delay

The field enables or disables IR transmission delay function. Settings: *Enabled* and *Disabled*.

UR2DuplexMode

The field specifies a duplex value for the IR device connected to COM B. Full Duplex mode permits simultaneous two-direction transmission in. Half Duplex mode permits transmission in one direction only at a time. Settings: *Half* and *Full*.

Use IR Pins

Consult your IR peripheral documentation to select the correct setting of TxD and RxD signals. Settings: *IR-Rx2Tx2* and *RxD2, TxD2*.

Onboard Parallel Port

This specifies the I/O port address and IRQ of the onboard parallel port. Settings: *378/IRQ7*, *278/IRQ5*, *3BC/IRQ7* and *Disabled*.

Parallel Port Mode

This item selects the operating mode for the parallel port: *SPP*, *EPP*, *ECP* or *ECP+EPP*.

EPP Mode Select

The item selects the EPP version used by the parallel port if it is set to *EPP* or *ECP+EPP* mode. Settings are *EPPI.7* and *EPPI.9*.

ECPMode UseDMA

The item specifies the DMA channel 1 or 3 for the parallel port when it is set to *ECP* or *ECP+EPP* mode.

PWRON After PWR-Fail

This item specifies whether your system will reboot after a power failure or interrupts occurs. Available settings are:

- | | |
|-------------------|--|
| <i>Off</i> | Leaves the computer in the power off state. |
| <i>On</i> | Reboots the computer. |
| <i>Former-Sts</i> | Restores the system to the previous status before power failure or interrupt occurred. |

Game/Midi Port Address

The items disable or assign the I/O address for the Game/Midi port.

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Midi Port IRQ

The item specifies an IRQ for the Midi port.

Power Management Setup

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Power Management Setup

IPCA function	Enabled	Item Help
Sleep State	S1/POS	Menu Level ▶
Power Management Option	User Define	
HDD Power Down	Disable	
Doze Mode	Disable	
Suspend Mode	Disable	
PM Control by APM	Yes	
MODEM Use IRQ	3	
Soft-Off by PWRBTN	Instant-Off	
▶ IRQ/Event Activity Detect	Press Enter	
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

IPCA function

This item is to activate the ACPI (Advanced Configuration and Power Management Interface) Function. If your operating system is ACPI-aware, such as Windows 98SE/2000/ME, select *Enabled*. Settings: *Enabled* and *Disabled*.

Sleep State

This item specifies the power saving modes for ACPI function. If your operating system supports ACPI, such as Windows 98SE, Windows ME and Windows 2000, you can choose to enter the Standby mode in S1/POS or S3/STR fashion through the setting of this field. Options are:

- S1/POS

The S1 sleep mode is a low power state. In this state, no system context (CPU or chipset) is lost and hardware maintains all system context.
- S3/STR

The S3 sleep mode is a power-down state in which power is supplied only to essential components such

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as main memory and wake-capable devices and all system context is saved to main memory. The information stored in memory will be used to restore the PC to the previous state when an “wake up” event occurs.

Power Management Option

This item is used to select the degree (or type) of power saving and is related to these modes: Doze Mode and Suspend Mode. There are three options for power management:

- Min Saving* Minimum Power Management. Doze Mode = 1 Hour, Suspend Mode = 1 Hour.
- Max Saving* Maximum Power Management. Doze Mode = 1 Min., Suspend Mode = 1 Min.
- User Define* Allows end users to configure each mode separately.

HDD Power Down

If HDD activity is not detected for the length of time specified in this field, the hard disk drive will be powered down while all other devices remain active. Settings: *Disable* and *1 Min* through *15 Min*.

Doze Mode

After the selected period of system inactivity, the CPU clock will run at slower speed while other devices still run at full speed. Settings: *Disable*, *1 Min*, *2 Min*, *4 Min*, *6 Min*, *8 Min*, *10 Min*, *20 Min*, *30 Min*, *40 Min* and *1 Hour*.

Suspend Mode

If system activity is not detected for the length of time specified in this field, all devices except CPU will be shut off. Settings are *Disable*, *1 Min*, *2 Min*, *4 Min*, *6 Min*, *8 Min*, *10 Min*, *20 Min*, *30 Min*, *40 Min* and *1 Hour*.

PM Control by APM

Setting to *Yes* will activate an Advanced Power Management (APM) device to enhance **Max Saving** mode and stop CPU internal clock. Settings: *Yes* and *No*.

MODEMUseIRQ

Name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system. Settings: 3, 4, 5, 7, 9, 10, 11 and NA.

Soft-Off by PWRBTN

This feature allows users to configure the power button function. Settings are:

- Instant-Off*
- The power button functions as a normal power-on/-off button.
- Delay 4 Sec*
- When you press the power button, the computer enters the suspend/sleep mode, but if the button is pressed for more than four seconds, the computer is turned off.

IRQ/Event Activity Detect

Press <Enter> to enter the sub-menu and the following screen appears:

IRQ/Event Activity Detect		
USB Resume from S3	Disabled	Item Help
V G A	O F F	
LPT & COM	L P T / C O M	Menu Level ▶ ▶
HDD & FDD	O N	
PCI Master	O F F	
PowerOn by PCI Card	Disabled	
Wake Up On LAN/Ring	Disabled	
RTC Alarm Resume	Disabled	
x Date (of Month)	0	
x Resume Time (hh:mm:ss)	0 0 0	
▶ IRQs Activity Monitoring	Press Enter	

USB Resume from S3, VGA, LPT & COM, HDD & FDD, PCI Master, PowerOn by PCI Card, Wake Up On LAN/Ring

These items specify whether the system will be awakened from power saving modes when activity or input signal of the specified hardware peripheral or component is detected.

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Note: To use the function of “Wake Up On LAN/Ring”, you need to install a modem/LAN card supporting power on function.

RTC Alarm Resume

This is to enable or disable the feature of booting up the system on a scheduled time/date. Settings: *Enabled* and *Disabled*.

Date(of Month)

Specifies the date for **RTC Alarm Resume**. Settings are *0~31*.

Resume Time (hh:mm:ss)

Specifies the time for **RTC Alarm Resume**. Format is <hour><minute><second>.

IRQs Activity Monitoring

Press <Enter> to enter the sub-menu and the following screen appears:

IRQ Activity Monitoring		
Primary INTR	0 N	Item Help
IRQ3 (COM 2)	Enabled	Menu Level ▶ ▶ ▶
IRQ4 (COM 1)	Enabled	
IRQ5 (LPT 2)	Enabled	
IRQ6 (Floppy Disk)	Enabled	
IRQ7 (LPT 1)	Enabled	
IRQ8 (RTC Alarm)	Disabled	
IRQ9 (Reserved)	Disabled	
IRQ10 (Reserved)	Disabled	
IRQ11 (Reserved)	Disabled	
IRQ12 (PS/2 Mouse)	Enabled	
IRQ13 (Coprocessor)	Enabled	
IRQ14 (IDE Channel 0)	Enabled	
IRQ15 (IDE Channel 1)	Disabled	

Primary INTR

When this is set to *ON*, any event occurring will wake up the system which has been powered down.

IRQ3-IRQ15

Enables or disables the monitoring of the specified IRQ line. If set to *Enabled*, the activity of the specified IRQ line will prevent the system

from entering power saving modes or awaken it from power saving modes.



Note: *IRQ (Interrupt Request) lines are system resources allocated to I/O devices. When an I/O device needs to gain attention of the operating system, it signals this by causing an IRQ to occur. After receiving the signal, when the operating system is ready, the system will interrupt itself and perform the service required by the I/O device.*

Chapter 3

PnP/PCI Configurations

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PnP/PCI Configurations

PNP OS Installed	No	Item Help
Reset Configuration Data	Disabled	
Resources Controlled By	Auto(ESCD)	Menu Level ▶ Select Yes if you are using a Plug and Play capable operation system Select No if you need the BIOS to configure non-boot devices
IRQ Resources	Press Enter	
PCI/VGA Palette Snoop	Disabled	
Assign IRQ For VGA	Enabled	
Assign IRQ For USB	Enabled	
Assign IRQ For ACPI	Auto	
↑↓←→:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

PNP OS Installed

When set to *YES*, BIOS will only initialize the PnP cards used for booting (VGA, IDE, SCSI). The rest of the cards will be initialized by the PnP operating system like Windows® 95 or 98. When set to *NO*, BIOS will initialize all the PnP cards. So, select *Yes* if the operating system is Plug & Play aware.

Reset Configuration Data

The ESCD (Extended System Configuration Data) is a method that the BIOS uses to store resource information for both PNP and non PNP devices in a bit string format. When *Enabled*, the system will rebuild ESCD and you will see the message “ESCD Update Successfully” on boot up.

Resources Controlled By

If select *Auto(ESCD)*, BIOS will automatically configure all the boot and PnP (Plug & Play) compatible devices and assigns system resources like IRQ to these devices. However, this feature means absolutely nothing unless you are using a Plug and Play operating system such as Windows®95/98. If you

want to configure it by yourself, select *Manual*.

IRQ Resources

The items are adjustable only when **Resources Controlled By** is set to *Manual*. Press <Enter> and you will enter the sub-menu of the items. **IRQ Resources** list IRQ-3/-4/-5/-7/-9/-10/-11/-12/-14/-15 for users to set each IRQ a type depending on the type of device using the IRQ. Settings are:

<i>PCI Device</i>	For Plug & Play compatible devices designed for PCI or ISA bus architecture.
<i>Reserved</i>	For devices compliant with the PC AT bus specification, requiring a specific interrupt.

PCI/VGA Palette Snoop

PCI VGA palette is the set of colors currently used by the video device. Some special VGA cards may not show colors correctly and need to look into the video device's VGA palette to determine what colors are in use. Then you have to turn on the palette "snoop", permitting the palette registers of both VGA devices to be identical. The setting must be set to Enabled if any non-standard VGA adapter card, such as MPEG card, installed in the system requires VGA palette snooping.

Assign IRQ For VGA/USB

Selecting *Enabled* allows BIOS to assign an IRQ to VGA/USB device. Choose *Disabled* if you want to release the IRQ.

Assign IRQ For ACPI

Selecting *Auto* allows BIOS to automatically assign an IRQ for SCI (System Control Interrupt) of ACPI spec. Settings: *Auto*, *IRQ9*, *IRQ10* and *IRQ11*.

Chapter 3

PC Health Status

This section is to monitor the current hardware status including CPU temperature, CPU Fan speed, Vcore etc. This is available only if there is hardware monitoring mechanism onboard.

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PC Health Status

CPU Warning Temperature	Disabled	Item Help
Current System Temp.	32°C/89°F	
Current CPU Temperature	58°C/132°F	
Current System Fan Speed	2310 RPM	
Current Power Fan Speed	4200 RPM	
Current CPU Fan Speed	4560 RPM	
Vcore	1.66V	
VTT	1.47V	
3.3V	3.26V	
+ 5V	5.02V	
+12V	12.05V	
-12V	-11.56V	
- 5V	-4.99V	
VBAT (V)	3.22V	
5VSB(V)	4.87V	
Chassis Intrusion Detect	Disabled	
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 item is used to specify a thermal limit for CPU. If CPU temperature reaches the specified limit, the system will issue a warning and allows you to prevent the CPU overheat problem. Settings: *Disabled, 50°C/122°F, 53°C/127°F, 56°C/133°F, 60°C/140°F, 63°C/145°F, 66°C/151°F and 70°C/158°F.*

Current System Temp., Current CPU Temperature, Current System/Power/ CPU Fan Speed, Vcore, VTT, 3.3V/+ 5V/+12V/-12V/- 5V, VBAT(V), 5VSB (V)

These items display the current status of all of the monitored hardware devices/components such as CPU voltages, temperatures and all fans' speeds.

Chassis Intrusion Detect

The item enables or disables the feature of recording the chassis intrusion status and issuing a warning message if the chassis was once opened. To clear the warning message, you must set the item to *Reset*. The setting of the item will automatically return to *Enabled* later. Settings: *Enabled*, *Reset* and *Disabled*.

Shutdown Temperature

The item allows ACPI-aware OS to automatically shutdown if the system temperature reaches a thermal level preset in the field. This can prevent the system components from being damaged due to overheating. Settings: *Disabled*, *80°C/176°F*, *85°C/185°F* and *90°C/194°F*.

Frequency/Voltage Control

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software Frequency/Voltage Control		
Auto Detect DIMM/PCI Clk	Enabled	Item Help
Spread Spectrum	+/-0.25%	
CPU Host/PCI Clock	100/33Mhz	Menu Level ▶

Auto Detect DIMM/PCI Clk

This item is used to auto detect the DIMM and PCI slots to minimize the electromagnetic interference (EMI). When set to *Enabled*, the system will remove (turn off) clocks from empty DIMM or PCI slots. Settings: *Disabled* and *Enabled*.

Spread Spectrum

When the motherboard clock generator pulses, the extreme values (spikes) of the pulses creates EMI (Electromagnetic Interference). The Spread Spectrum function reduces the EMI generated by modulating the pulses so that the spikes of the pulses are reduced to flatter curves. If you do not have any EMI problem, leave the setting at *Disabled* for optimal system stability and performance. But if you are plagued by EMI, setting to *Enabled* for EMI reduction. Remember to disable Spread Spectrum if you are overclocking because even a 0.25% jitter can introduce a temporary boost in clockspeed of 25MHz (with a 1GHz CPU) which may just cause your

overclocked processor to lock up.

CPU Host/PCI Clock

This item specifies the combination of CPU host bus (FSB) and PCI bus frequency and provides a method for end users to overclock the processor accordingly. If the CPU clock is set to 100MHz, you are allowed to select any option between *100/33Mhz* and *124/31Mhz* for **CPU Host/PCI Clock**. If the CPU clock is set to 133MHz, you can set the item from *133/33Mhz* through *154/39Mhz*.

Chapter 3

Load Fail-Safe/Optimized Defaults

The two options on the main menu allow users to restore all of the BIOS settings to the default Fail-Safe or Optimized values. The Optimized Defaults are the default values set by the mainboard manufacturer specifically for the optimal performance of the mainboard. The Fail-Safe Defaults are the default values set by the BIOS vendor for the stable system performance.

When you select Load Fail-Safe Defaults, a message as below appears:

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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	Load Fail-Safe Defaults (Y/N)? N
▸ PnP/PCI Configurations	Save & Exit Setup
▸ PC Health Status	Exit Without Saving

ESC : Quit F9 : Menu in BIOS ↑↓←→ : Select Item

F10 : Save & Exit Setup

Load Fail-Safe Defaults

Pressing Y loads the BIOS default values for the most stable, minimal system performance.

When you select Load Optimized Defaults, a message as below appears:

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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	Load Optimized Defaults (Y/N)? N
▸ PnP/PCI Configurations	Save & Exit Setup
▸ PC Health Status	Exit Without Saving

ESC : Quit F9 : Menu in BIOS ↑↓←→ : Select Item

F10 : Save & Exit Setup

Load Optimized Defaults

Pressing Y loads the default factory settings for optimal system performance.

Chapter 3

Set Supervisor/User Password

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

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

▸ 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	Enter Password: <input type="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

Change/Set/Disable Password

Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previously set password from CMOS memory. You will be prompted to confirm the password. Re-type the password and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To clear a set password, just press <Enter> when you are prompted to enter the password. A message will show up confirming the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup without entering any password.

When a password has been set, 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.

Additionally, when a password is enabled, you can also have BIOS to request a password each time the system is booted. This would prevent unauthorized

use of your computer. The setting to determine when the password prompt is required is the Security Option of the Advanced BIOS Features menu. If the Security Option is set to *System*, the password is required both at boot and at entry to Setup. If set to *Setup*, password prompt only occurs when trying to enter Setup.



About Supervisor Password & User Password:

Supervisor password :

Can enter and change the settings of the setup menu.

User password:

Can only enter but do not have the right to change the settings of the setup menu.

Chapter 3

Save & Exit Setup

When you want to quit the Setup menu, you can select this option to save the changes and quit. A message as below will appear on the screen:

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

▸ 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	SAVE to CMOS and EXIT (Y/N)? Y
▸ PnP/PCI Configurations	Save & Exit Setup
▸ PC Health Status	Exit Without Saving

ESC : Quit F9 : Menu in BIOS ↑↓←→ : Select Item
F10 : Save & Exit Setup

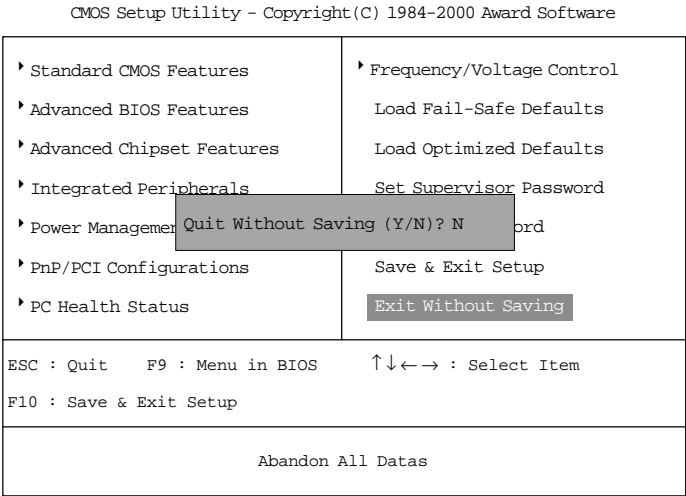
Save Data to CMOS

Typing *Y* will allow you to quit the Setup Utility and save the user setup changes to RTC CMOS.

Typing *N* will return to the Setup Utility.

Exit Without Saving

When you want to quit the Setup menu, you can select this option to abandon the changes. A message as below will appear on the screen:



Typing *Y* will allow you to quit the Setup Utility without saving any changes to RTCCMOS.

Typing *N* will return to the Setup Utility.

Installing Drivers

4

The chapter describes how to install the VIA® chipset and ALC201A sound drivers in different Windows® operating systems. To install the drivers correctly, you should always **install VIA® chipset driver prior to sound drivers**.

This chapter includes the following topics:

Driver Installation for Windows® 98SE/2000
/ME/NT4.0

4-2

Chapter 4

Driver Installation for Windows® 98SE/2000/ME/NT4.0



Note 1: *Install Windows® 2000 Service Pack2 or the latest version before installing the VIA drivers into Windows® 2000.*

Note 2: *Install Windows® NT4.0 Service Pack 6 or above before installing the VIA drivers into Windows® NT.*

Installing VIA® Chipset Driver

1. Insert the supplied CD disk into the CD-ROM drive.
2. The CD will auto-run and the setup screen will appear.
3. Click on **Via Chipset Drivers** and follow the on-screen instructions to complete the installation.
4. Restart the system for the new chipset driver.

Installing Sound Drivers

1. Make sure the supplied CD disk is in the CD-ROM drive.
2. Go to **My Computer** and double click the CD-ROM icon. The setup screen will appear again.
3. Click on **Avance Sound Drivers** and follow the on-screen instructions to complete the installation.
4. Restart the system.



One Touch Setup:

*In Windows 2000/ME, you may see the **One Touch Setup** button appear on the setup screen. Choosing the button will help you to install more than one driver into the system without going through the installation process step by step and save a lot of time accordingly. After clicking on One Touch Setup, a window will show up indicating what drivers will be installed. Install other drivers not included by One Touch Setup manually if any.*