

**MSI**  
MICRO-STAR INTERNATIONAL  
**815EPT Pro**  
**MS-6337 (V5.X) ATX Mainboard**



**Version 5.0**  
**G52-MA00355**

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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.

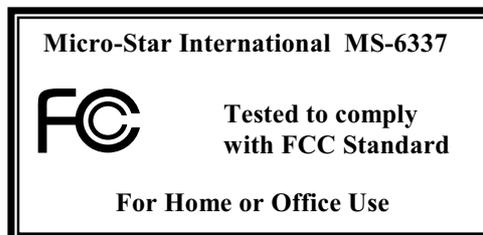
**Notice 1**

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**

May 2001

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## **Revision History**

<b>Revision</b>	<b>Revision History</b>	<b>Date</b>
V5.0	Change 815E/EP chipset to 815E/EP B-step chipset	May 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 cannot 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 cannot 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<sup>0</sup> C (140<sup>0</sup>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*

The 815EPT Pro and 815EPT Pro-R (MS-6337, V5.X) ATX mainboards are high-performance computer mainboards based on Intel® 815EP/815E (reserved upon request) chipsets. The MS-6337 UMB (Universal Motherboard) is optimized to support the whole series of new generation Intel® Pentium® III (FC-PGA/FC-PGA2) processors for high-end business/personal desktop markets.

The Intel® 815E chipset integrates a Display Cache SDRAM controller that supports a 32-bit 133MHz SDRAM array for enhanced integrated 3D graphics performance. It is a highly-flexible chipset which is designed to extend the basic graphics/multimedia PC platform up to the mainstream performance desktop platform.

The Intel 815E/EP chipsets contain two components: the 82815EP Memory Controller Hub (MCH) and the 82801BA I/O Controller Hub 2 (ICH2). The MCH integrates a 66/100/133-MHz, P6 family system bus controller, AGP (2X/4X) discrete graphics card, 100/133-MHz SDRAM controller, and a high speed accelerated hub architecture interface for communication with the ICH2. The ICH2 integrates an UltraATA/100 controller, 2 USB host controllers with a total of 4 ports, LPC interface controller, FWH interface controller, PCI interface controller, AC'97 digital link, integrated LAN controller, and a hub interface for communication with the MCH.

This chapter contains the following topics:

Mainboard Specifications	1-2
Mainboard Layout	1-4
Quick Components Guide	1-6
Key Features	1-7
MSI Special Features	1-8

## **Chapter 1**

# **Mainboard Specifications**

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### **CPU**

- Support Socket370 for the whole series of new generation Intel® Pentium® III(FC-PGA/FC-PGA2) processors.
- Support 500MHz, 550MHz, 600MHz, 633MHz, 667MHz, 700MHz, 733MHz, 800MHz, 866MHz, 933MHz, 1GHz, 1.1GHz, 1.13GHz and up to 1.2GHz.

### **Chipset**

- Intel® 815E chipset (reserved upon request/with VGA port) or Intel® 815EP chipset (standard/without VGA port)
  - 544 BGA
  - AGP 4x/2x universal slot
  - Support 66/100/133MHz FSB
- Intel® ICH2 chipset.
  - AC'97 Audio support
  - 2 full IDE channels, up to ATA100
  - Low pin count interface for SIO
  - 2 USB host controllers/4 USB ports

### **Main Memory**

- Support four 168-pin DIMM sockets.
- Support a maximum memory size of 256MB or 512MB SDRAM.

### **Slots**

- One CNR (Communication Network Riser).
- One AGP (Accelerated Graphics Port) 2x/4x slot (One AGP Pro slot for 815EPT Pro-R)
- Six PCI 2.2 32-bit Master PCI Bus slots. All PCI slots can be used as master.
- 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 66/100 operation modes.
- Can connect up to four IDE devices.
- ATA RAID 0.1 supported by Promise PDC20265R.

### **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 (COM1/COM2)
- 1 parallel port supports SPP/EPP/ECP mode
- 4 USB ports (Rear \* 2 / Front \* 2)

*Note: One front USB port provides USB PC to PC Networking Function.*

### **Audio**

- ICH2 chip integrated
- Support 2 Channel Audio or 4 Channel Audio (for 815EPT Pro-R)

### **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.

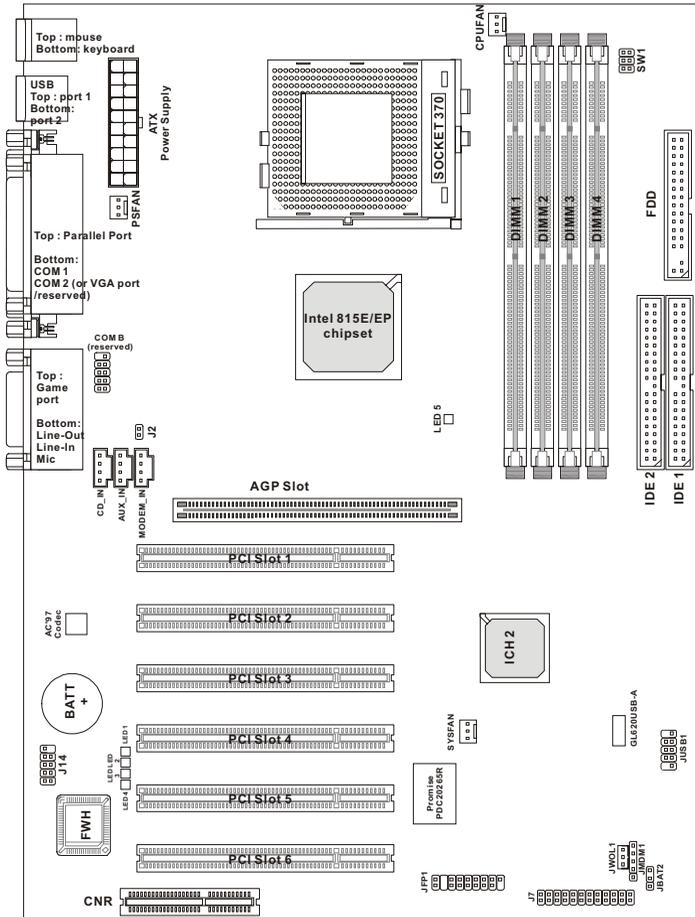
### **Dimension**

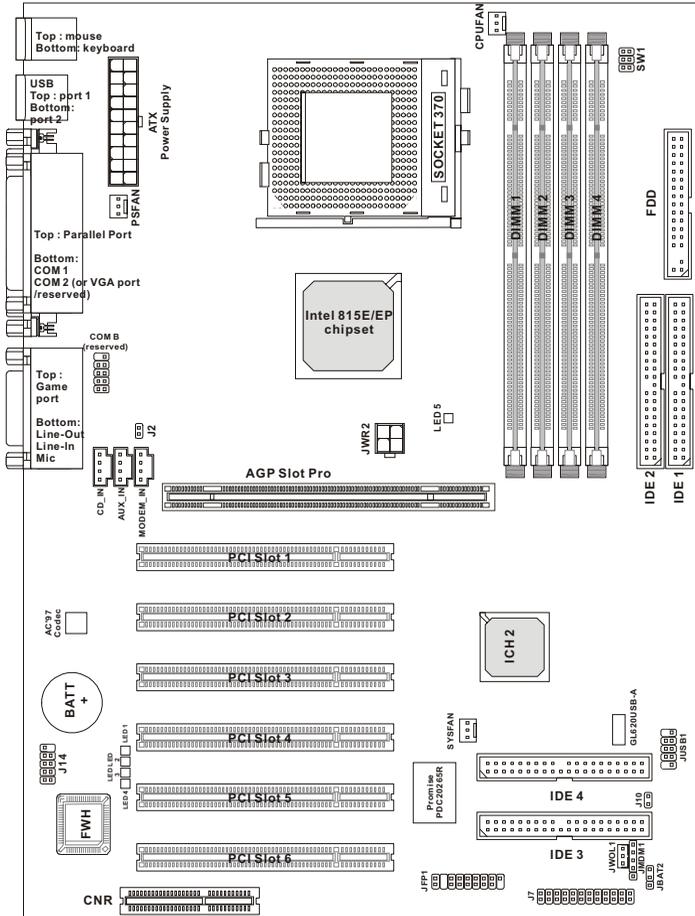
- ATX Form Factor

### **Mounting**

- 6 mounting holes.

# Mainboard Layout





## 815EPT Pro-R (MS-6337 V5.X) ATX Mainboard

\* Please note that Intel® 815E chipset (with VGA port) is reserved upon request.

## Chapter 1

# Quick Components Guide

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<b>Component</b>	<b>Function</b>	<b>Reference</b>
SW1	Overclocking Jumper	See p. 2-4
JWR	ATX 20-Pin Power Connector	See p. 2-9
JWR2	ATX 12V Power Connector	See p. 2-10
JKBMS1	Mouse & Keyboard Connectors	See p. 2-11
USB Connectors	Connecting to USB devices	See p. 2-12
LPT1	Parallel Port Connector	See p. 2-13
COM 1 & COM 2	Serial Port Connectors	See p. 2-14
VGA DB 15-Pin	Connecting to VGA monitor	See p. 2-14
FDD	Floppy Disk Drive Connector	See p. 2-15
IDE1~ IDE2	Hard Disk Connectors	See p. 2-16
IDE3 & IDE4 (Optional)	IDE RAID Connectors	See p. 2-17
JFP1	Case Connector	See p. 2-18
LED5	DIMM Power LED	See p. 2-20
JWOL1	Wake On LAN Connector	See p. 2-21
JMDM1	Wake On Ring Connector	See p. 2-22
CPUFAN/SYSFAN/PSFAN	Fan Power Connectors	See p. 2-23
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J7	Front Panel Connector	See p. 2-26
JUSB1	USB Front Connector	See p. 2-27
J14	D-Bracket™ Connector	See p. 2-30
JBAT2	Clear CMOS Jumper	See p. 2-31
J2	TOP TECH. III	See p. 2-32
AGP/AGP PRO Slot	Connecting to AGP (Pro) cards	See p. 2-33
PCI Slots	Connecting to expansion cards	See p. 2-33
CNR	Connecting to expansion cards	See p. 2-33

## **Key Features**

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- ATX Form Factor
- CPU: Socket370 for the whole series of new generation Intel® Pentium® III(FC-PGA/FC-PGA2) processors
- Memory: four 168-pin DIMM sockets/maximum memory size of 256MB or 512MB SDRAM
- Slot: 1 AGP/AGP PRO slot, 1 CNR slot, 6 PCI slots
- I/O: 2 serial ports, 1 parallel port, 4 USB ports, 1 floppy port, 3 Audio/1 Game port
- USB Interface: USB 1.1 PC to PC Networking
- 2 IDE RAID connectors (Optional)
- Fuzzy Logic™ III overclocking utility
- D-LED™ - 4 LEDs embedded in the mainboard
- PC Alert™ III system hardware monitor
- Audio: 2 Channel S/W audio integrated or optional 4 Channel Audio (for 815EPT Pro-R)
- LAN Wake up Function
- Modem (External/Internal) Ring Wake up Function

## MSI Special Features

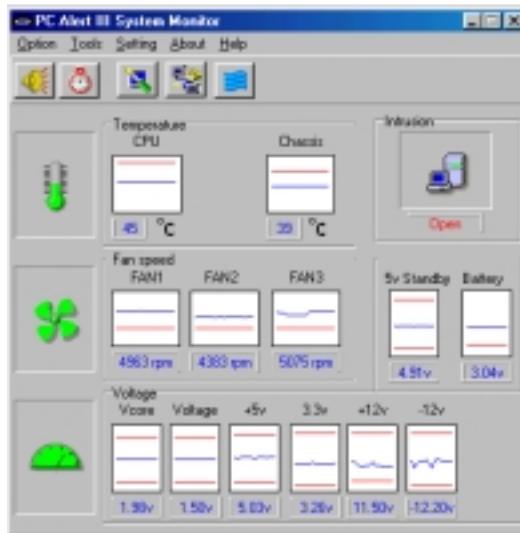
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### PC Alert™ III

The PC Alert™ III is an 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 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 the warning.



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



**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

## Chapter 1

### T.O.P Tech™

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



### CPU temperature on Setup menu

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

Current CPU1 Temp.	40°C/104°F	Item Help
Current CPU2 Temp.	30°C/86°F	
Current CPUFAN1 Speed	4200Rpm	Menu Level ▶
Current CPUFAN2 Speed	6124Rpm	
CPU1 Vcore	1.64V	
CPU2 Vcore	1.98V	
3.3V	3.31V	
5V	4.95V	
12V	11.64V	
↑ ↓ → ←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

## **Fuzzy Logic™ III**

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:**

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

## Chapter 1

### D-LED™ & D-Bracket™

The D-LED™ uses graphic signal display to help users understand their system. Four LEDs embedded in the mainboard provide up to 16 combinations of signals to debug the 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. These users can use the feature to detect if there are any problems or failures.

To facilitate users' operation, the 815EPT Pro & 815EPT Pro-R mainboards are additionally equipped with D-Bracket™ connector for diagnosis of system problems through external LEDs. An optional D-Bracket™ cable would be necessary for this function. Please refer to “D-Bracket™ Connector: J14” in Chapter 2.

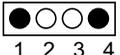
Definitions of the LED signals for D-Bracket™ are the same as D-LED™ as shown below.



**Diagnostic LED**



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

D-LED	D-Bracket	Description
 <p>1 2 3 4</p>	 <p>1 2 3 4</p>	<p>Processor Initialization</p> <p>- 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</p> <p>- This will start detecting CPU clock, checking type of video onboard. Then, detect and initialize the video adapter.</p>
		<p>BIOS Sign On</p> <p>- This will start showing information about logo, processor brand name, etc....</p>
		<p>Testing Base and Extended Memory</p> <p>- 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</p> <p>- This will initialize IDE drive and controller.</p>
		<p>Initializing Floppy Drive Controller</p> <p>- This will initializing Floppy Drive and controller.</p>
		<p>Boot Attempt</p> <p>- This will set low stack and boot via INT 19h.</p>
		<p>Operating System Booting</p>

---

# **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 Installation	2-5
Power Supply	2-9
Back Panel	2-11
Connectors	2-15
Jumpers	2-31
Slots	2-33

## Chapter 2

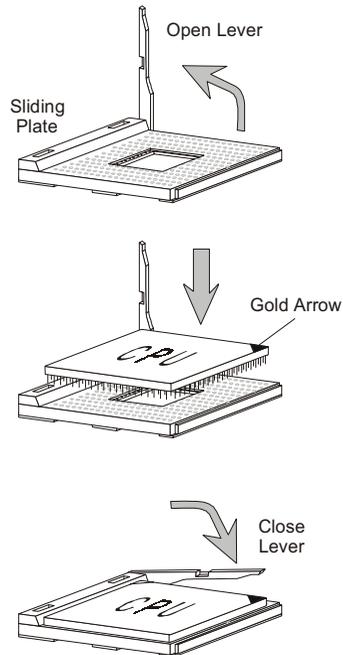
# Central Processing Unit: CPU

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The mainboard operates with the whole series of new generation **Intel® Pentium® III (FC-PGA/FC-PGA2) processors**. The mainboard uses a CPU socket called Socket 370 for easy CPU installation. The CPU should always have a Heat Sink and a cooling fan attached to prevent overheating.

## 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 gold arrow. The gold arrow should point towards the end of lever. The CPU will only fit in the correct orientation.
3. Hold the CPU down firmly, and then close the lever to complete the installation.



## **CPU Core Speed Derivation Procedure**

**If**    CPU Clock                    =        100MHz  
          Core/Bus ratio                =        8.5  
**then** CPU core speed            =        Host Clock x Core/Bus ratio  
    =        100MHz x 8.5  
    =        850MHz



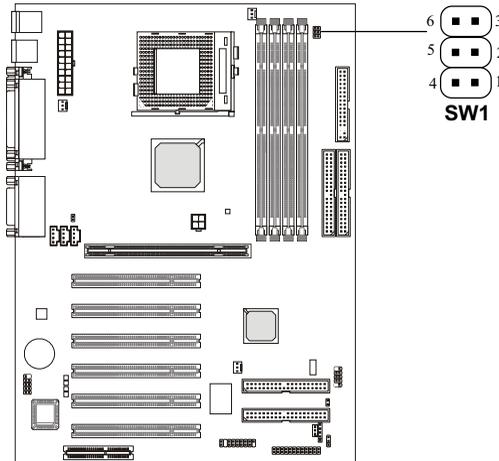
**WARNING!**

*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.*

## Chapter 2

### Overclocking Jumper: SW1

Overclocking is operating a CPU/Processor beyond its specified frequency. SW1 jumper is used for overclocking.



SW1	Function
	<b>Auto</b>
	<b>66.6→100</b> <b>133→100</b>
	<b>133→66.6</b> <b>100→66.6</b>
	<b>100→133</b>

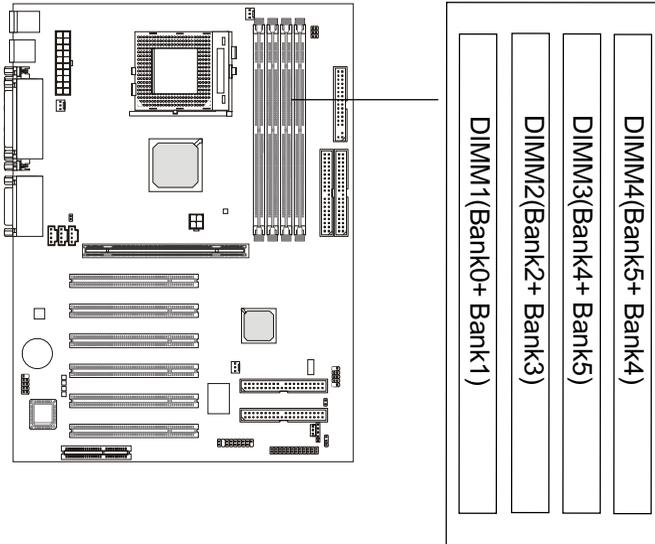
**Note:** If you used this jumper for overclocking, you also need to modify the CPU Bus ratio through BIOS.

## Memory Installation

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### Memory Bank Configuration

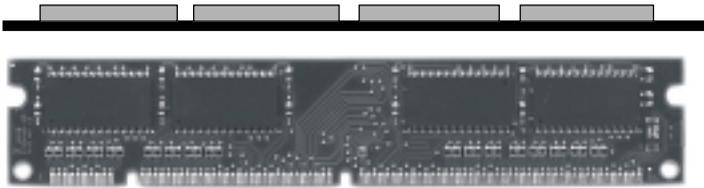
The mainboard supports a maximum memory size of 512MB: It provides four 168-pin **unbuffered** DIMMs (Double In-Line Memory Module) sockets. It supports 32MB to 512MB DIMM memory module.



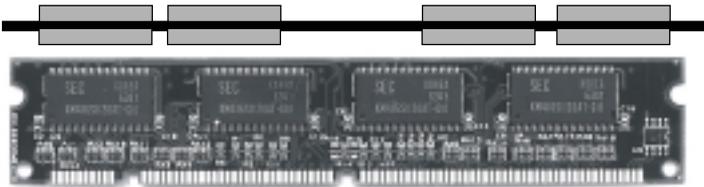
## Chapter 2

### Memory Installation Procedures

#### A. How to install a DIMM Module

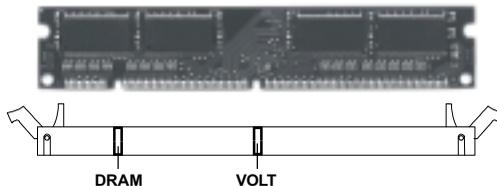


**Single Sided DIMM**



**Double Sided DIMM**

1. The DIMM slot has 2 Notch Keys “VOLT and DRAM”, so the DIMM memory module can only fit in one direction.
2. Insert the DIMM memory module vertically into the DIMM slot. Then push it in.



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

## **Memory Population Rules**

1. Supports only SDRAM DIMM.
2. To operate properly, at least one 168-pin DIMM module must be installed.
3. This mainboard supports Table Free memory, so memory can be installed on DIMM1, DIMM2, DIMM3 or DIMM4 in any order.
4. Supports 3.3 volt DIMM.
5. The DRAM addressing and the size supported by the mainboard is shown at the next page.

**Note:** It is not recommended to install a Double Side DIMM module to DIMM 3 and DIMM 4 at the same time as this will not function properly. To make use of DIMM 3 and DIMM 4 at the same time, insert a Single Side DIMM module to each of them. Please use the same type or model of SDRAM. Moreover, you should always use DIMM 3 if you have only one Single Side DIMM module. Installing it on DIMM 4 is not allowed and this will not function properly.

Refer to the table below for proper combination.

<b>DIMM1</b>	<b>DIMM2</b>	<b>DIMM3</b>	<b>DIMM4</b>
<b>DS/SS</b>	<b>DS/SS</b>	<b>DS</b>	<b>X</b>
<b>DS/SS</b>	<b>DS/SS</b>	<b>SS</b>	<b>SS</b>
<b>DS/SS</b>	<b>DS/SS</b>	<b>X</b>	<b>DS</b>
<b>DS/SS</b>	<b>DS/SS</b>	<b>SS</b>	<b>X</b>

**DS:** Double Side DIMM  
**SS:** Single Side DIMM  
**X:** None/Cannot be installed

Table 2.3-1 SDRAM Memory Addressing

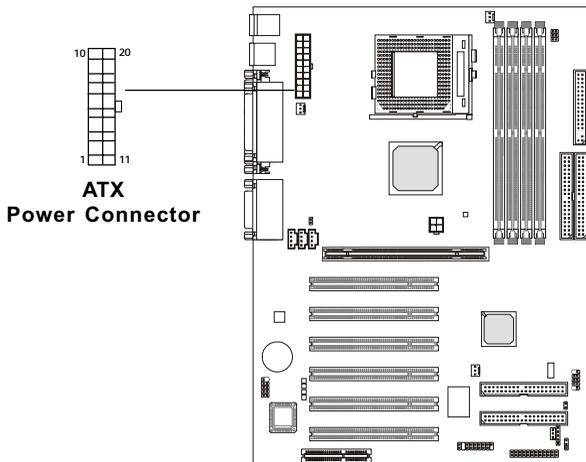
DIMM Capacity	# of Devices/ DIMM	# of Sides	Dram Tech.	Front Side Population		Back Side Population		Row	Bank	Column
				Count	Config	Count	Config			
0		N/A		Empty		Empty		N/A	N/A	N/A
32MB	16	DS	16Mb	8-	2Mb x8	8-	2Mb x8	11	1	9
32MB	4	SS	64Mb	4-	4Mb x16			12	2	8
48MB	12	DS	64/16Mb	4-	4Mb x16	8-	2Mb x8	12	2/1	8
64MB	8	DS	64Mb	4-	4Mb x16	4-	4Mb x16	12	2	8
64MB	8	SS	64Mb	8-	8Mb x8			12	2	9
64MB	4	SS	128Mb	4-	8Mb x16			12	2	9
96MB	12	DS	64Mb	8-	8Mb x8	4-	4Mb x16	12	2	9/8
96MB	8	DS	128/64Mb	4-	8Mb x16	4-	4Mb x16	12	2	9/8
128MB	16	DS	64Mb	8-	8Mb x8	8-	8Mb x8	12	2	9
128MB	8	DS	128Mb	4-	8Mb x16	4-	8Mb x16	12	2	9
128MB	8	SS	128Mb	8-	16Mb x8			12	2	10
128MB	4	SS	256Mb	4-	16Mb x16			13	2	9
192MB	12	DS	128Mb	8-	16Mb x8	4-	8Mb x16	12	2	10/9
192MB	16	DS	128/64Mb	8-	16Mb x8	8-	8Mb x8	12	2	10/9
256MB	16	DS	128Mb	8-	16Mb x8	8-	16Mb x8	12	2	10
256MB	8	DS	256Mb	4-	16Mb x16	4-	16Mb x16	13	2	9
256MB	8	SS	256Mb	8-	32Mb x8			13	2	10
512MB	16	DS	256Mb	8-	32Mb x8	8-	32Mb x8	13	2	10

## 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 Connector: JWR

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 is inserted in the proper orientation and the pins are aligned. Then push down the power supply firmly into the connector.



#### PIN DEFINITION

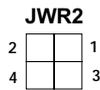
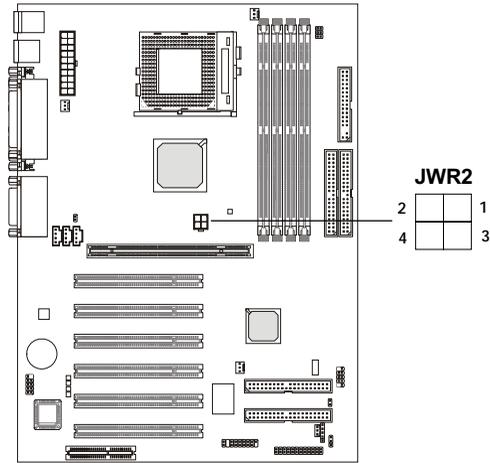
PIN	SIGNAL	PIN	SIGNAL
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	GND	13	GND
4	5V	14	PS_ON
5	GND	15	GND
6	5V	16	GND
7	GND	17	GND
8	PW_OK	18	-5V
9	5V_SB	19	5V
10	12V	20	5V

**Warning:** Since the mainboard has the instant power on function, make sure that all components are installed properly before inserting the power connector to ensure that no damage will be done.

## Chapter 2

### ATX 12V Power Connector: JWR2

This 12V power connector is used to connect the power cable of the AGP Pro card if the card comes with a power cable, and supply power to the installed card accordingly.

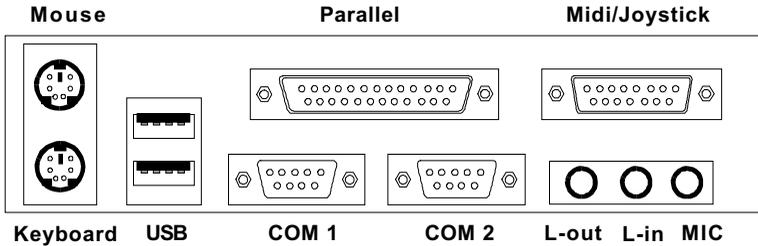


PIN	SIGNAL
1	GND
2	GND
3	12V
4	12V

**Note:** JWR2 is the power connector for AGP Pro card. Only for 815EPT Pro-R.

## Back Panel

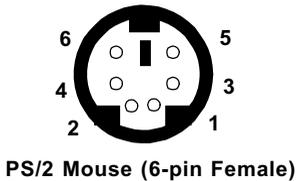
The Back Panel provides the following connectors:



### Mouse Connector: JKBMS1

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

Pin Definition

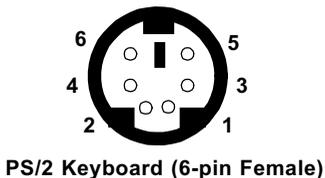


PIN	SIGNAL	DESCRIPTION
1	Mouse DATA	Mouse DATA
2	NC	No connection
3	GND	Ground
4	VCC	+5V
5	Mouse Clock	Mouse clock
6	NC	No connection

### Keyboard Connector: JKBMS1

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

Pin Definition



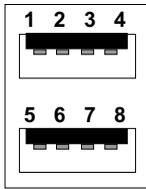
PIN	SIGNAL	DESCRIPTION
1	Keyboard DATA	Keyboard DATA
2	NC	No connection
3	GND	Ground
4	VCC	+5V
5	Keyboard Clock	Keyboard clock
6	NC	No connection

## Chapter 2

### 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 Port Description		
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



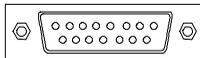
The diagram shows a top-down view of a USB port connector. It is a rectangular port with two rows of four pins each. The top row is numbered 1, 2, 3, 4 from left to right. The bottom row is numbered 5, 6, 7, 8 from left to right. The pins are represented by small squares with a central dot.

USB Ports

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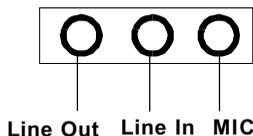
### Joystick/Midi Connectors

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.

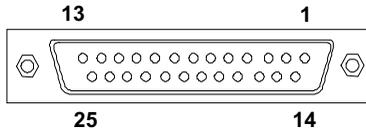


#### For 815EPT Pro-R

815EPT Pro-R supports Audio Multi-Channel function. This allows you to change the Line In to 3,4 channel output and Line Out to 1, 2 channel output.

**Parallel Port Connector: LPT1**

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**

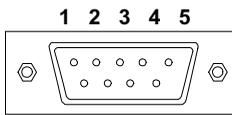
<b>PIN</b>	<b>SIGNAL</b>	<b>DESCRIPTION</b>
1	STROBE	Strobe
2	DATA0	Data0
3	DATA1	Data1
4	DATA2	Data2
5	DATA3	Data3
6	DATA4	Data4
7	DATA5	Data5
8	DATA6	Data6
9	DATA7	Data7
10	ACK#	Acknowledge
11	BUSY	Busy
12	FE	Paper End
13	SELECT	Select
14	AUTOFEED#	Automatic Feed
15	ERR#	Error
16	INIT#	Initialize Printer
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

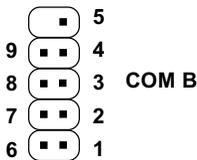
### Serial Port Connector: COM 1 & COM 2

For **815EP** chipset, the mainboard is equipped with two 9-pin male DIN connectors for serial port **COM 1** and **COM2**. You can attach a serial mouse or other serial devices to the connectors.

For **815E** chipset (reserved upon request), the mainboard has one 9-pin male DIN serial port **COM 1** and one 9-pin **COM B** pin header. You can attach a serial mouse or other serial devices to the connectors. The serial port COM 2 is replaced by one **VGA DB 15-pin** connector. You can attach a VGA monitor to it.



**9-Pin Male DIN Connectors**

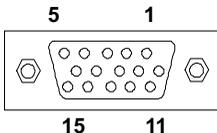


#### Pin Definition

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

### VGA DB 15 Pin Connector

For **815E** chipset (reserved upon request), the mainboard provides one DB 15-pin female connector to connect a VGA monitor.



**DB 15-Pin Female Connector**

#### Pin Definition

Analog Video Display Connector (DB-15S)	
PIN	SIGNAL DESCRIPTION
1	Red
2	Green
3	Blue
4	Not used
5	Ground
6	Ground
7	Ground
8	Ground
9	Power
10	Ground
11	Not used
12	SDA
13	Horizontal Sync
14	Vertical Sync
15	SCL

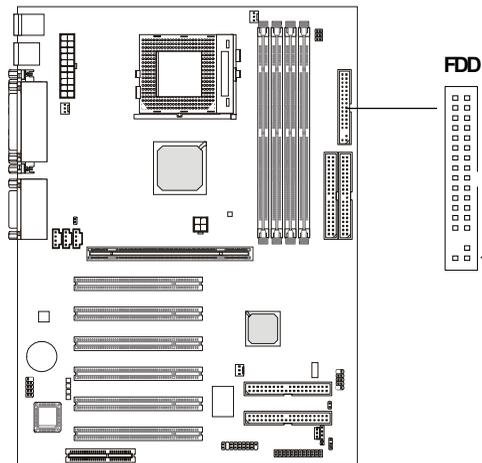
## **Connectors**

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

### **Floppy Disk Drive Connector: FDD**

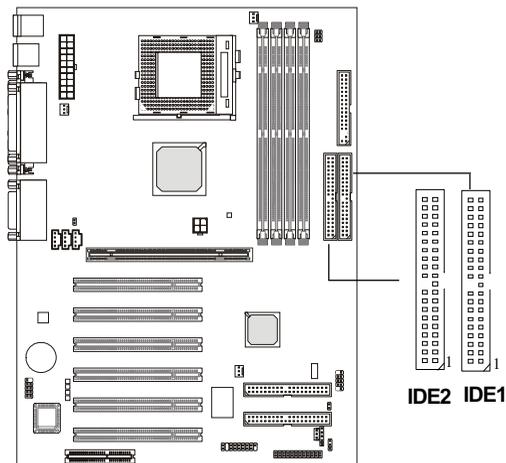
The mainboard provides a standard floppy disk drive connector that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types.



## Chapter 2

### Hard Disk Connectors: IDE1~ IDE2

The mainboard has a 32-bit Enhanced PCI IDE and Ultra DMA 33/66/100 controller that provides PIO mode 0~4, Bus Master, and Ultra DMA/33/66/100 function . You can connect up to four hard disk drives, CD-ROM, 120MB Floppy (reserved for future BIOS) and other devices. These connectors support the provided IDE hard disk cable.



**TIP:**

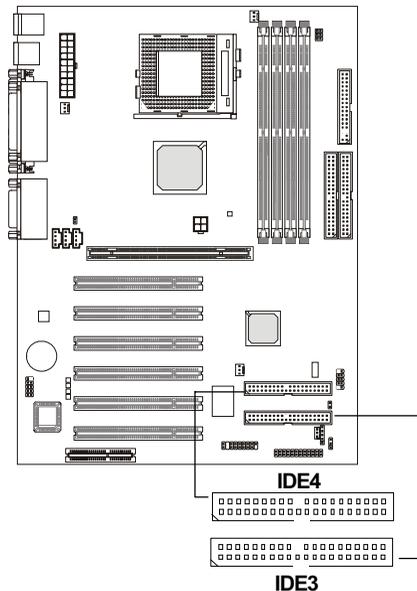
*If you install two hard disks on cable, you must configure the second drive to Slave mode by setting its jumper. Refer to the hard disk documentation supplied by hard disk vendors for jumper setting instructions.*

## **IDE RAID Connectors: IDE3 & IDE4 (Optional)**

The mainboard offers a low-cost RAID (Redundant Array of Independent Disks) solution by integrating two IDE RAID connectors that support PIO mode 0-4, Bus Master, and Ultra DMA 33/66/100 modes. The IDE RAID connectors allow you to connect Ultra ATA/DMA hard disks and use RAID technology for high performance, data security and fault tolerance. The connectors support RAID 0 (striping) and RAID 1 (mirroring).

### **IDE RAID Connectors**

- You can connect a Master and a Slave drive to each IDE RAID connector.
- **For more information on IDE RAID, please refer to IDE RAID Manual.**
- Please note that only the two master HDDs will adopt RAID function.



### **For 815EPT Pro**

There are two HDD connectors (IDE1 & IDE2) on 815EPT Pro mainboard.

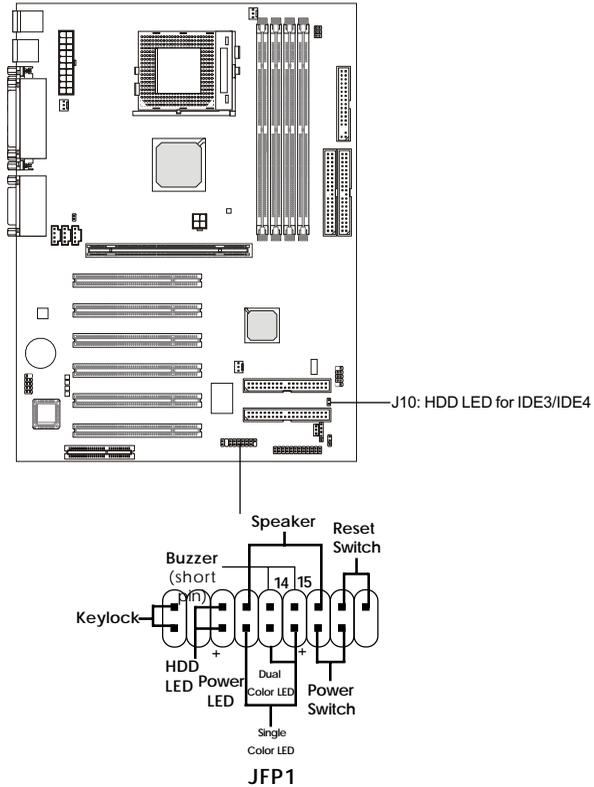
### **For 815EPT Pro-R**

There are four HDD connectors (IDE1, IDE2, IDE3, IDE4) on 815EPT Pro-R mainboard. IDE3 & IDE4 are provided for IDE RAID function. Please refer to IDE RAID user's manual for more information on IDE RAID function.

## Chapter 2

### Case Connector: JFP1

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



### **Power Switch**

Connect to a 2-pin push button switch. This switch has 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.

### **Power LED**

The Power LED is lit while the system power is on.

### **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. J10 is the HDD LED exclusively for IDE3/IDE4.

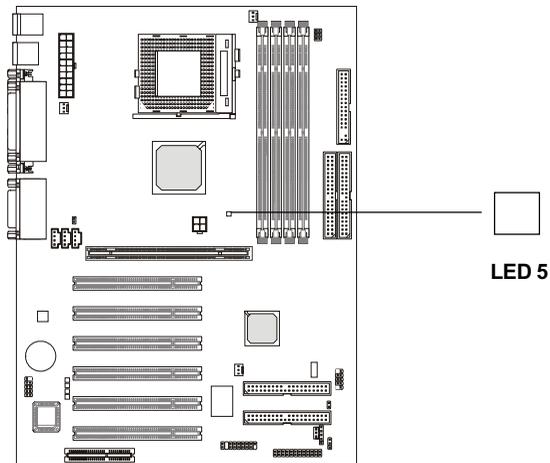
### **Keylock**

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

## Chapter 2

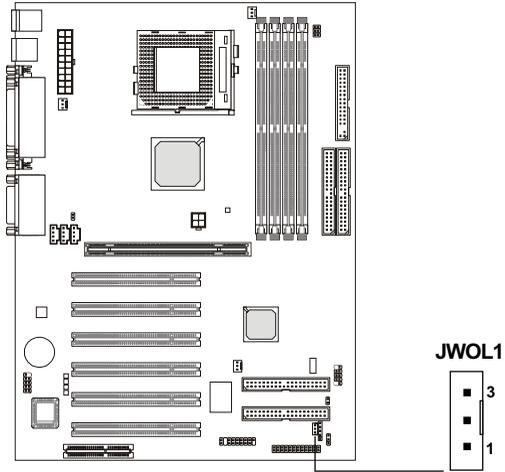
### DIMM Power LED: LED5

The mainboard provides a special diagnostic LED for users to be aware of their mainboard conditions. LED 5 indicates the DIMM power. When LED 5 is powered on, do not attempt to insert or remove the DIMM module.



### **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.



<b>PIN</b>	<b>SIGNAL</b>
1	5VSB
2	GND
3	MP_WAKEUP

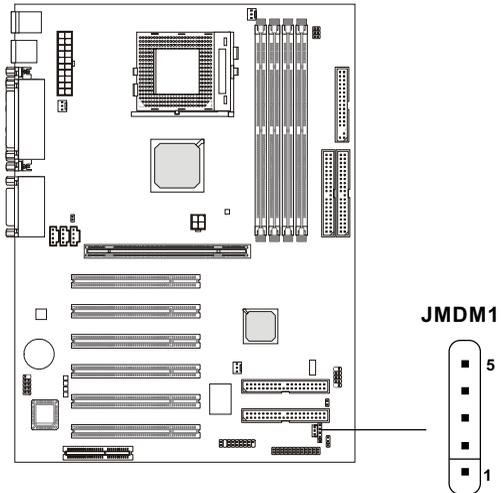
**Note:** LAN wake-up signal is active “high”.

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

## Chapter 2

### 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.



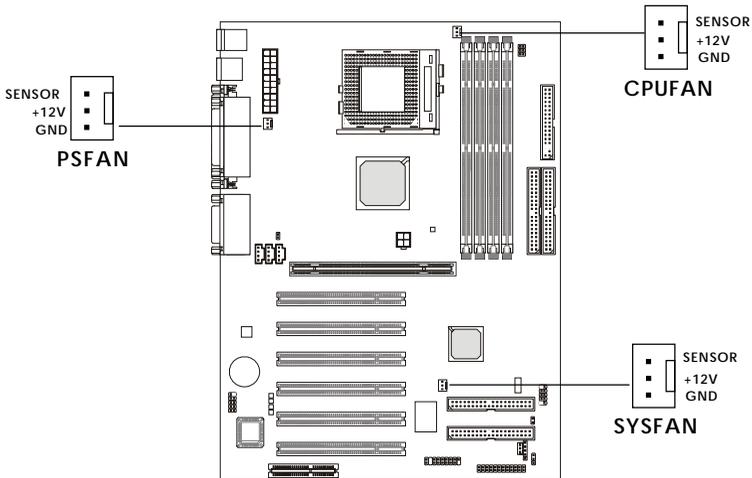
PIN	SIGNAL
1	NC
2	GND
3	MDM_WAKEUP
4	NC
5	5VSB

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

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

### Fan Power Connectors: CPUFAN/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 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.



**CPUFAN:** Processor Fan

**SYSFAN:** System Fan

**PSFAN:** Power Supply Fan

For fans with fan speed sensor, every rotation of the fan will send out 2 pulses. System Hardware Monitor will count and report the fan rotation speed.

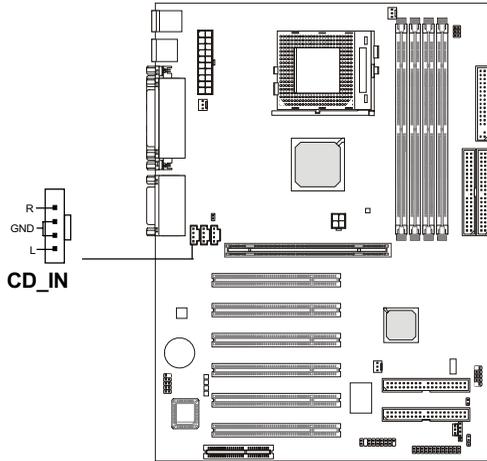
#### **Note:**

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.

## Chapter 2

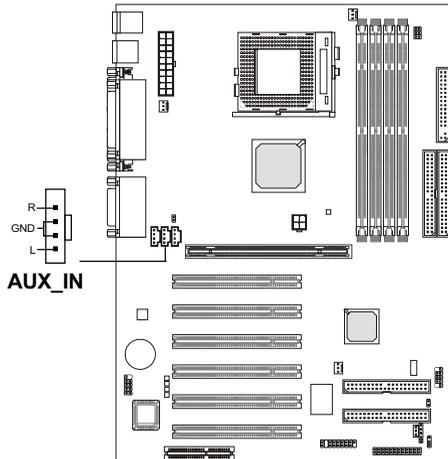
### CD-In Connector: CD\_IN

The connector is for CD-ROM audio connector.



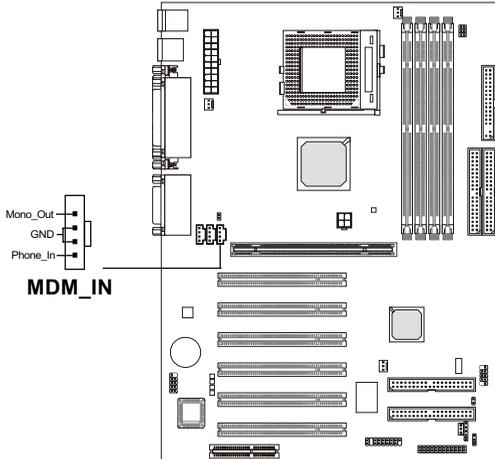
### Aux Line-In Connector: JAUX

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



## **Modem-In Connector: MDM\_IN**

The connector is for modem with internal audio connector.

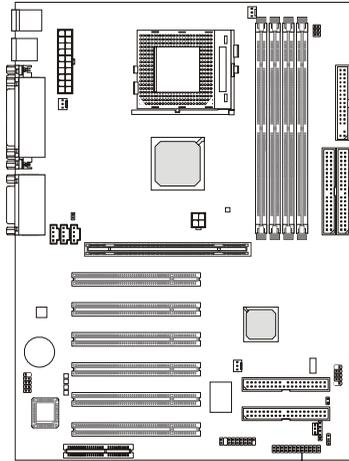


Mono\_Out is connected to the Modem Speaker Out connector.  
Phone\_In is connected to the Modem Microphone In connector.

## Chapter 2

### Front Panel Connector: J7

The mainboard provides a **Front Panel Connector**.

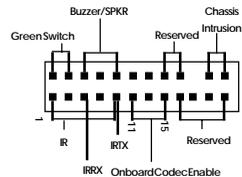


#### Pin Definition:

11-13 pin (optional)  
Short 11-13 pin to disable Onboard Codec.

13-15 pin (optional)  
Short 13-15 pin to enable Onboard Codec.

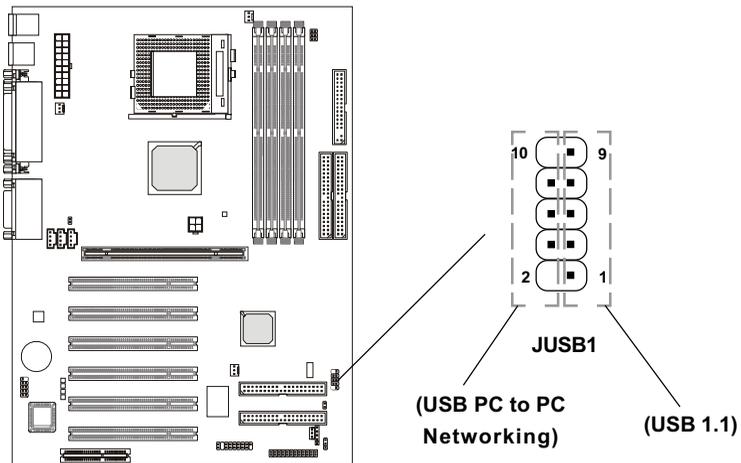
Speaker Output  
Short 6-8 pin to activate AC97\_SPKR  
Short 8-10 pin to activate onboard Buzzer.



## USB Front Connector: JUSB1

The mainboard provides a **front Universal Serial Bus connector** with USB PC to PC Networking Function. Two cables (**USB PC to PC Cable** & **USB Bracket Cable**) are provided for the function.

*(Please refer to the Appendix for more information on USB PC to PC Networking Function and driver installation.)*



JUSB1 Pin Definition

Pin	Description	Pin	Description
1	VCC	2	NC
3	USB2-	4	GND
5	USB2+	6	USB3+
7	GND	8	USB3-
9	GND	10	NC

## Chapter 2

*Note: USB PC to PC Networking feature allows users to transfer and receive data from other computers or share system resources with other computers without using any network adapter. See below for instructions.*

### To Attach the USB PC to PC cable

1. Check whether the package includes the following items. If any is missing, contact your dealer.

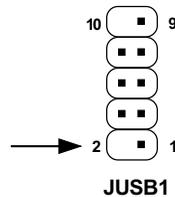
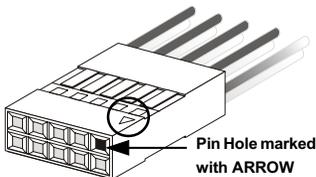


USB PC to PC Bracket

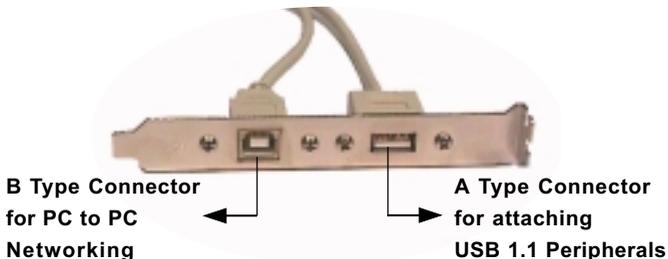


USB PC to PC Cable

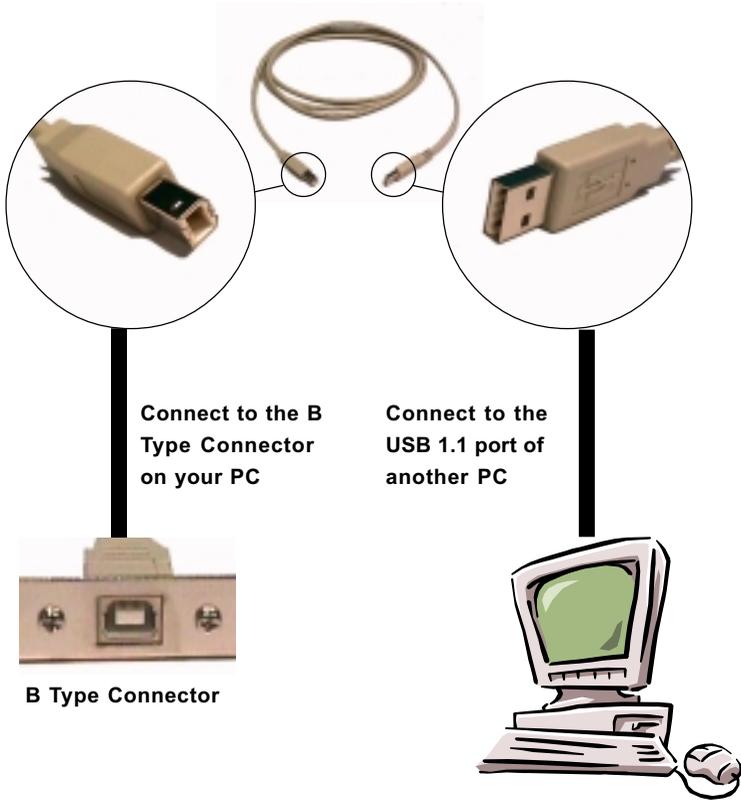
2. Connect the USB Bracket Cable to the JUSB1 pin header on the mainboard. Locate the pin hole marked with the ARROW on the connector of USB Bracket and Pin# 2 of JUSB1. Then align the pin hole with Pin# 2 to attach the USB Bracket.



3. Identify the **B Type Connector** on the bracket used for PC to PC Networking function.



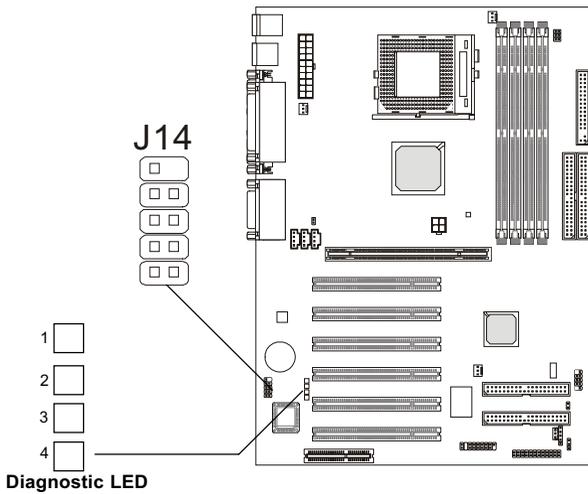
4. Connect your PC to another PC via USB PC to PC cable. The transfer rate will run at USB 1.1 speed (12Mbps/s).



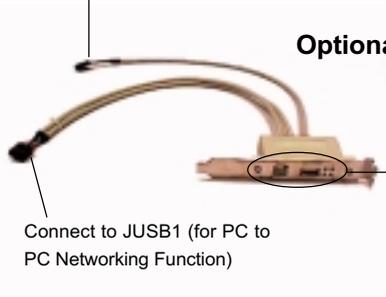
*For more information on USB PC to PC Networking function, refer to Appendix A: USB PC to PC Networking Function.*

## D-Bracket™ Connector: J14

The mainboard comes with a J14 connector. You can connect an **optional** D-Bracket™ cable to it. D-Bracket™ is a USB Bracket integrating four LEDs whose functions are the same as D-LED™ (with LEDs embedded in the mainboard) and allows users to identify system problems (without the need to disassemble the PC case) through 16 various combinations of LED signals. For definitions of the 16 signal combinations, refer to “D-LED™ & D-Bracket™” in Chapter 1.



Connect to J14 (for diagnosis of PC system problems through external LEDs)



### Optional D-Bracket™ Cable

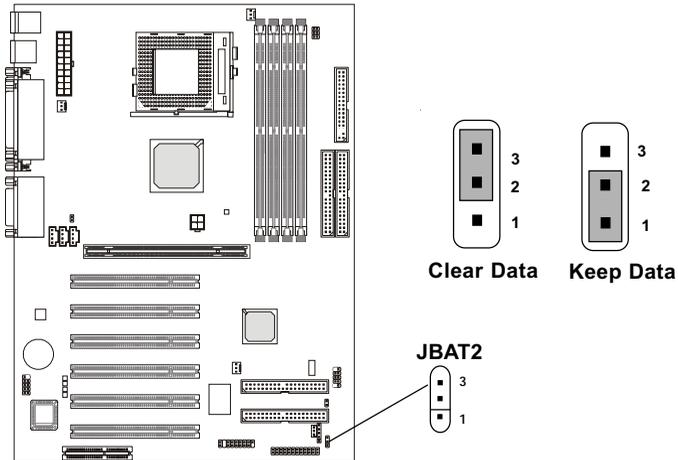


## Jumpers

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: JBAT2

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. That battery has long life time for at least 5 years. If you want to clear the system configuration, use the JBAT2 (Clear CMOS Jumper ) to clear data. Follow the instructions below to clear the data:



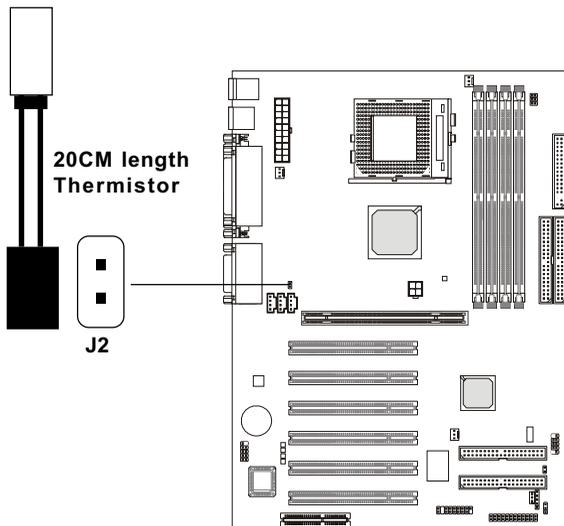
**WARNING!**

*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.*

## Chapter 2

### TOP TECH. III: J2

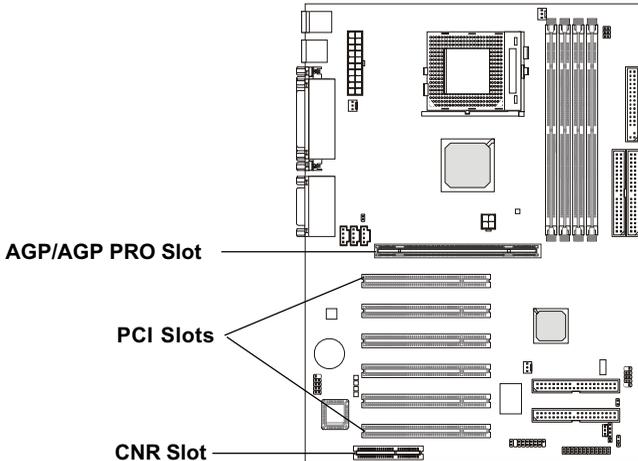
This is used to check the AGP chipset temperature on AGP card. The J2 is a 2-pin connector which can be inserted with a 20cm length thermistor. It is located near the chipset heat sink that monitors the chipset temperature. The BIOS setup for “TOP TECH III” should be set for “Enabled.”



## Slots

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The motherboard provides six 32-bit Master PCI Bus Slots, one AGP/AGP PRO and one CNR slot.



### **AGP (Accelerated Graphics Port)/AGP PRO Slot**

The AGP/AGP Pro Slot allows you to insert the AGP Pro or AGP card.

### **PCI Slots**

Six 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.

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# 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.

This chapter provides you with the overview of the BIOS Setup program. It 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	3-8
Advanced Chipset Features	3-11
Integrated Peripherals	3-14
Power Management Setup	3-18
PNP/PCI Configurations	3-22
PC Health Status	3-24
Frequency/Voltage Control	3-25
Load Optimized/Fail-Safe Defaults	3-26
Set Supervisor/User Password	3-28

## Chapter 3

# 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 <Del> key or simultaneously press <Ctrl>, <Alt>, and <Esc> keys to enter Setup.

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

---

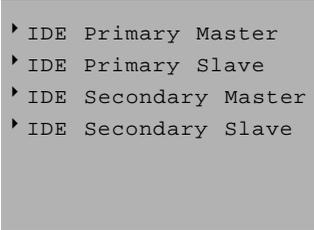
After entering the Setup menu, the first menu you will see is the Main Menu.

### Main Menu

The main menu lists the setup functions you can make changes to. You can use the control keys (↑↓) 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 (↑↓) to highlight the field and press <Enter> 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 press the <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 (Figure 1) will appear on the screen. The Main Menu allows you to select from twelve setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

CMOS Setup Utility - Copyright(C) 1984-2001 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 Setup	Set User Password
PnP/PCI Configurations	Save & Exit Setup
PC Health Status	Exit Without Saving
Esc : Quit F9: Menu in BIOS ↑↓→← : Select Item	
F10 : Save & Exit Setup	
Time, Date, Hard Disk Type...	

### Standard CMOS Features

Use this Menu for basic system configurations.

### Advanced BIOS Features

Use this menu to set the Advanced Features available on your system.

### 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 Configuration**

This entry appears if your system supports PnP/PCI.

**PC Health Status**

This entry shows your PC health status.

**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 for your system to operate.

**Load Optimized Defaults**

Use this menu to load the BIOS default values that are factory settings for optimal performance system 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 3

# Standard CMOS Features

---

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

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

Date(mm:dd:yy): Time(hh:mm:ss):	Fri, Feb 28,1999 00:00:00	Item Help
IDE Primary Master IDE Primary Slave IDE Secondary Master IDE Secondary Slave	Press Enter 2557MB Press Enter None Press Enter None Press Enter None	Menu Level >
Drive A Drive B	1.44M, 3.5in. None	
Video Halt On	EGA/VGA All Errors	
Base Memory Extended Memory Total Memory	640K 64512K 65536K	
↑↓ → ← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

### Date

The date 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

The time format is <hour> <minute> <second>.

**PrimaryMaster/PrimarySlave**  
**SecondaryMaster/Secondary Slave**

Press PgUp/<+> or PgDn/<-> to select Manual, None, Auto type. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not matched or listed, you can use Manual to define your own drive type manually.

If you select Manual, related information is asked to be entered to the following items. Enter the information directly from the keyboard. This information should be provided in the documentation from your hard disk vendor or the system manufacturer.

If the controller of HDD interface is SCSI, the selection shall be “None”.  
If the controller of HDD interface is CD-ROM, the selection shall be “None”.

<b>Access Mode</b>	The settings are Auto, Normal, Large,LBA.
<b>Cylinder</b>	number of cylinders
<b>Head</b>	number of heads
<b>Precomp</b>	write precom
<b>LandingZone</b>	landing zone
<b>Sector</b>	number of sectors

## Chapter 3

# Advanced BIOS Features

---

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

Anti-Virus Protection	Disabled	Item Help
CPU Internal Cache	Enabled	
External Cache	Enabled	Menu Level >
CPU L2 Cache ECC Checking	Enabled	
Processor Number Feature	Enabled	
Quick Power On Self Test	Enabled	
First Boot Device	Floppy	
Second Boot Device	HDD-0	
Third Boot Device	LS120	
Fourth Boot Device	Disabled	
Swap Floppy Drive	Disabled	
Boot Up Floppy Seek	Enabled	
Boot Up NumLock Status	On	
Gate A20 Option	Fast	
Typeomatic Rate Setting	Disabled	
Typeomatic Rate (Chars/Sec)	6	
Typeomatic 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 WIN 95	No	
Full Screen LOGO Show	Enabled	
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		
↑ ↓ → ← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		

### 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 attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.

**Disable** (default) No warning message to appear when anything attempts to access the boot sector or hard disk partition table.

**Enable** Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector of hard disk partition table.

### CPU Internal Cache

The default value is Enabled.

**Enabled** (default) Enable cache

**Disabled** Disable cache

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

**External Cache**

Choose Enabled or Disabled. This option enables the level 2 cache memory.

**CPU L2 Cache ECC Checking**

Choose Enabled or Disabled. This option enables the level 2 cache memory ECC(error check correction).

**Processor Number Feature**

This option is for Pentium® III processor. During Enabled, this will check the CPU Serial number. Disabled this option if you don't want the system to know the Serial number.

**Quick Power On Self Test**

This category speeds 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.

- |                          |                   |
|--------------------------|-------------------|
| <b>Enabled</b> (default) | Enable quick POST |
| <b>Disabled</b>          | Normal POST       |

**First/Second/Third/Fourth Boot Device**

The BIOS attempts to load the operating system from the devices in the sequence selected in these items. The settings are Floppy, LS120, HDD-0/HDD-1/HDD-2/HDD-3, SCSI, CDROM, LAN, ZIP100, and Disabled.

**Swap Floppy Drive**

Switches the floppy disk drives between being designated as A and B. Default is Disabled.

**Boot Up Floppy Seek**

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks while 760K, 1.2M and 1.44M are all 80 tracks.

**Boot Up NumLock Status**

The default value is On.

- |                     |                         |
|---------------------|-------------------------|
| <b>On</b> (default) | Keypad is numeric keys. |
| <b>Off</b>          | Keypad is arrow keys.   |

**Gate A20 Option**

- |               |  |
|---------------|--|
| <b>Normal</b> | The A20 signal is controlled by keyboard controller or chipset hardware. |
|---------------|--|

## **Chapter 3**

**Fast**(default) The A20 signal is controlled by port 92 or chipset specific method.

### **Typematic Rate Setting**

Key strokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected.

The settings are: Enabled/Disabled.

### **Typematic Rate (Chars/Sec)**

Sets the number of times a second to repeat a key stroke when you hold the key down. The settings are: 6, 8, 10, 12, 15, 20, 24, 30.

### **Typematic Delay (Msec)**

Sets the delay time after the key is held down before it begins to repeat the keystroke The settings are: 250, 500, 750, 1000.

### **Security Option**

This category allows you to limit access to the system and Setup, or just to Setup.

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

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

### **OS Selection for DRAM > 64MB**

Allows OS2® to be used with > 64 MB of DRAM. Settings are Non-OS/2 (default) and OS2. Set to OS/2 if using more than 64MB and running OS/2®.

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

This item allows you to Enabled or Disabled the HDD S.M.A.R.T (Self-Monitoring Analysis and Reporting Technology) Capability. The default setting is Disabled.

### **Report No FDD For WIN 95**

Whether report no FDD for Win 95 or not. The settings are: Yes, No.

### **Full Screen LOGO Show**

This allows you to enable or disable the Full Screen LOGO Show capability. The default setting is Enabled.

## Advanced Chipset Features

The Advanced Chipset Features Setup option is used to change the values of the chipset registers. These registers control most of the system options in the computer.

Choose the “ADVANCED CHIPSET FEATURES” from the Main Menu and the following screen will appear.

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

SDRAM CAS Latency Time	Auto	Item Help
SDRAM Cycle Time Tras/Trc	7/9	
SDRAM RAS-to-CAS Delay	3	Menu Level >
SDRAM RAS Precharge Time	3	
System BIOS Cacheable	Disabled	
Video BIOS Cacheable	Disabled	
Memory Hole at 15M-16M	Disabled	
CPU Latency Timer	Enabled	
Delayed Transaction	Enabled	
AGP Graphics Aperture Size	64MB	
System Memory Frequency	Auto	
↑ ↓ → ← 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.

### SDRAM CAS latency Time

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. The settings are: 2, 3 and Auto.

### SDRAM Cycle Time Tras/Trc

Select the number of SCLKs for an access cycle. The settings are: 5/7 and 7/9.

### SDRAM RAS-to-CAS Delay

This field lets you insert a timing delay between the CAS and RAS strobe

## Chapter 3

signals, used when DRAM is written to, read from, or refreshed. *Fast* gives faster performance; and *Slow* gives more stable performance. This field applies only when synchronous DRAM is installed in the system.

The settings are: 2 and 3.

### **SDRAM RAS Precharge Time**

If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete and the DRAM may fail to retain data. *Fast* gives faster performance; and *Slow* gives more stable performance. This field applies only when synchronous DRAM is installed in the system. The settings are: 2 and 3.

### **System BIOS Cacheable**

Selecting *Enabled* allows 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. The settings are: Enabled and Disabled.

### **Video BIOS Cacheable**

Select Enabled allows caching of the video BIOS, resulting in better system performance. However, if any program writes to this memory area, a system error may result. The settings are: Enabled and Disabled.

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

You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements. The settings are: Enabled and Disabled.

### **CPU Latency Timer**

During Enabled, A deferrable CPU cycle will only be Deferred after it has been in a Snoop Stall for 31 clocks and another ADS# has arrived. During Disabled, A deferrable CPU cycle will be Deferred immediately after the GMCH receives another ADS#.

### **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. The settings are: Enabled and Disabled.

**AGP Graphics Aperture Size**

This option determines the effective size of the graphics aperture used in the particular PAC configuration. The AGP aperture is memory-mapped, while graphics data structure can reside in a graphics aperture. The aperture range should be programmed as not cacheable in the processor cache, accesses with the aperture range are forwarded to the main memory, then PAC will translate the original issued address via a translation table that is maintained on the main memory. The option allows the selection of an aperture size of 32MB, 64MB.

**System Memory Frequency**

Select the Onboard Display Cache frequency. The settings are 100MHz, 133MHz or Auto.

## Chapter 3

# Integrated Peripherals

CMOS Setup Utility - Copyright(C) 1984-2001 Award Software  
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	
USB Mouse Support	Disabled	
Init Display First	PCI Slot	
AC97 Audio	Auto	
AC97 Modem	Auto	
Gate A20	Enabled	
IDE HDD Block Mode	Enabled	
Keyboard Power On	Disabled	
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	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	SPP	
EPP Mode Select	EPP 1.7	
ECP Mode Use UDMA	3	
PWRON After PWR-Fail	Off	
Game Port Address	201	
Midi Port Address	290	
Midi Port IRQ	10	
Power Status LED	Single	
↑ ↓ → ← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

### OnChip Primary/Secondary PCI IDE

The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select *Enabled* to activate each channel separately. The settings are: Enabled and Disabled.

### **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. The settings are: 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, Ultra DMA/66 and Ultra DMA/100 select Auto to enable BIOS support. The settings are: Auto, Disabled.

### **USB Controller**

Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals. The settings are: Enabled, Disabled.

### **USB Keyboard Support**

Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard. The settings are: Enabled, Disabled.

### **USB Mouse Support**

Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have a USB mouse. The settings are: Enabled, Disabled.

### **Init Display First**

This item allows you to decide to activate whether PCI Slot or on-chip VGA first. The settings are: PCI Slot, Onboard.

### **AC97 Audio/Modem**

This item allows you to decide to enable/disable the 815 chipset family to support AC97 Audio/Modem.

### **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. The settings are: Enabled, Disabled.

## **Chapter 3**

### **Keyboard Power On**

This function allows you to Enabled or Disabled the Keyboard Power On. The default setting is Disabled.

### **Power On Function**

This function allows you to select the item to power on the system. The settings are : Button Only, Mouse Left, Mouse Right, Password, Hotkey, keyboard 98.

### **KB Power On Password**

This function allows you to set the password for Keyboard Power On.

### **Hot Key Power On**

This function allows you to set the hot key to power on the system. The default setting is: Ctrl-F1.

### **Onboard FDC Controller**

Select Enabled if your system has a floppy disk controller (FDD) 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.

The settings are: Enabled and Disabled.

### **Onboard Serial Port 1/Port 2**

Select an address and corresponding interrupt for the first and second serial ports. The settings are: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.

### **UART Mode Select**

This item allows you to determine which InfraRed(IR) function of the onboard I/O chip, this functions uses.

### **Onboard Parallel Port**

**Disabled** There is a built-in parallel port on the on-board Super I/O chipset that provides Standard, ECP, and EPP features. It has the following options:

#### **Disable**

3BCH/IRQ7	Line Printer port 0
278H/IRQ5	Line Printer port 2
378H/IRQ7	Line Printer port 1

**Parallel Port Mode**

SPP : Standard Parallel Port

EPP : Enhanced Parallel Port

ECP : Extended Capability Port

ECP + EPP: Extended Capability Port + Enhanced Parallel Port

**SPP/EPP/ECP/ECP+EPP**

To operate the onboard parallel port as Standard Parallel Port only, choose “SPP.” To operate the onboard parallel port in the EPP mode simultaneously, choose “EPP.” By choosing “ECP”, the onboard parallel port will operate in ECP mode only. Choosing “ECP + EPP” will allow the onboard parallel port to support both the ECP and EPP modes simultaneously.

**EPP Mode Select**

The onboard parallel port is EPP Spec. compliant, so after the user chooses the onboard parallel port with the EPP function, the following message will be displayed on the screen: “EPP Mode Select.” At this time either EPP 1.7 spec. or EPP 1.9 spec. can be chosen.

**ECP Mode Use DMA**

The ECP mode has to use the DMA channel, so choose the onboard parallel port with the ECP feature. After selecting it, the following message will appear: “ECP Mode Use DMA” At this time, the user can choose between DMA channel 3 or 1.

**PWRON After PWR-FAIL**

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

**Game Port Address/Midi Port Address/Midi Port IRQ**

This will determine which Address the Game Port/Midi Port/Midi Port IRQ will use.

**Power Status LED**

This item determines which state the Power LED will use. The settings are Blinking, Dual, and Single. During blinking, the power LED will blink when the system enters the suspend mode. When the mode is in Dual, the power LED will change its color. Choose the single and the power LED will always remain lit.

## Chapter 3

# 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) 1984-2001 Award Software Power Management Setup

IPCA 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	Stop Grant	
Modem Use IRQ	3	
Suspend Mode	Disabled	
HDD Power Down	Disabled	
Soft-Off by PWR-BTTN	Instant-Off	
Wake-Up by PCI Card	Disabled	
Power On by Ring	Enabled	
Wake-Up On LAN	Enabled	
USB KB Wake-Up From S3	Disabled	
CPU Thermal-Throttling	50.0%	
Resume By Alarm	Disabled	
Date(of Month) Alarm	0	
Date(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		

## IPCA Function

This item allows you to Enabled/Disabled the Advanced Configuration and Power Management (ACPI). The settings are Enabled and Disabled.

## ACPI Suspend Type

This item will set which ACPI suspend type will be used.

### 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 where 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:

1. Suspend Mode
2. HDD Power Down

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

Min. Power Saving	Minimum power management. Suspend Mode = 1 hr., and HDD Power Down = 15 min.
Max. Power Saving	Maximum power management — Suspend Mode = 1 min., and HDD Power Down = 1 min.
User Defined (default)	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

### **Video Off Method**

This determines the manner in which the monitor is blanked.

V/HSYNC+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 (default)	Initial display power management signaling.

### **Video Off In Suspend**

This determines the manner in which the monitor is blanked. The settings are: Yes and No.

### **Suspend Type**

Select the Suspend Type. The settings are: PWRON Suspend, Stop Grant.

### **Modem Use IRQ**

This determines the IRQ in which the MODEM can use. The settings are: 3, 4, 5, 7, 9, 10, 11, NA.

## **Chapter 3**

### **Suspend Mode**

When enabled and after the set time of system inactivity, all devices except the CPU will be shut off. The settings are: 1/2/4/8/12/20/30/40 Min, 1 Hour, and Disabled.

### **HDD Power Down**

When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

The settings are: 1/2/3/4/5/6/7/8/9/10/11/12/13/14/15Min and Disabled.

### **Soft-Off by PWR-BTTN**

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state. The settings are: Delay 4 Sec, Instant-Off.

### **Wake-Up by PCI Card**

This will enable the system to wake up through PCI Card peripheral. The settings are : Enabled and Disabled.

### **Power On by Ring**

During Disabled, the system will ignore any incoming call from the modem. During Enabled, the system will boot up if there's an incoming call from the modem.

### **Wake-Up on LAN**

To use this function, you need a LAN add-on card which support power on functions. It should also support the wake-up on LAN jumper (JWOL1).

<b>Enabled</b>	Wake up on LAN supported.
<b>Disabled</b>	Wake up on LAN not supported.

### **USB KB Wake-Up From S3**

This option is used to Enabled/Disabled USB keyboard wake up with suspend to RAM.

### **CPU Thermal-Throttling**

Select the CPU THRM-Throttling rate. The settings are: 12.5%, 25.0%, 37.5%, 50.0%, 62.5%, 75.0%, 87.5%.

### **Resume by Alarm**

This function is for setting date and time for your computer to boot up. During Disabled, you cannot use this function. During Enabled, choose the Date and

Time Alarm:

**Date (of month) Alarm** You can choose which month the system will boot up. Set to 0, to boot 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.

**Primary IDE 0**

**Primary IDE 1**

**Secondary IDE 0**

**Secondary IDE 1**

**FDD, COM, LPT Port**

**PCI PIRQ[A-D]#**

## Chapter 3

# PNP/PCI Configurations

---

This section describes configuring the PCI bus system. PCI, or **P**ersonal **C**omputer **I**nterconnect, 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) 1984-2001 Award Software  
PnP/PCI Configurations

PNP OS Installed	No	Item Help
Reset Configuration Data	Disabled	
Resources Controlled By	Auto	Menu Level >
IRQ Resources	Press Enter	
DMA Resources	Press Enter	
PCI/VGA Palette Snoop	Disabled	
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		

### PNP OS Installed

This item allows you to determine whether the PnP OS is installed or not. The settings are Yes or No.

### Reset Configuration Data

Normally, you leave this field 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 operating system can not boot. The settings are: Enabled and 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.

**IRQ Resources**

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

**DMA Resources**

This sub menu can let you control the DMA resource.

**PCI/VGA Palette Snoop**

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

## Chapter 3

# PC Health Status

This section shows the Status of your CPU, Fan, Warning for overall system status.

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

CPU Warning Temperature	Disabled	Item Help
Current System Temp.	39°C/102°F	
Current CPU Temperature	66°C/150°F	Menu Level >
Current Top Tech. III Temp.	32°C/89°F	
System fan	0RPM	
Power fan	0RPM	
CPU fan	5532RPM	
Vcore	1.96V	
VTT	1.48V	
3.3V	3.24V	
+5V	4.89V	
+12V	11.79V	
-12V	12.19V	
-5V	-4.53V	
VBAT(V)	3.10V	
5VSB(V)	5.37V	
Chassis Intrusion Detect	Disabled	
Shutdown Temperature	Disabled	
↑ ↓ → ← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

### CPU Warning Temperature

During Enabled, this will warn the user when the CPU temperature reach a certain temperature. *Current System Temp/Current CPU Temperature/Current Top Tech. III Temp/System Fan (optional)/Power Fan (optional)/Cpu Fan/Vcore/VTT/3.3V/+5V/+12V/-12V/-5V/VBAT(V)/5VSB(V)*

This will show the CPU/FAN/System voltage chart and FAN Speed.

### Chassis Intrusion Detect

Set this option to Enabled, Reset, or Disabled the chassis intrusion detector. During Enabled, any intrusion on the system chassis will be recorded. The next time you turn on the system, it will show a warning message. To be able to clear those warning, choose reset. After clearing the message it will go back to Enabled.

### Shutdown Temperature

This option is for setting the Shutdown temperature level for the processor. When the processor reach the temperature you set, this will shutdown the system.

## Frequency/Voltage Control

This section is for setting CPU Frequency/Voltage Control.

CMOS Setup Utility - Copyright(C) 1984-2001 Award Software  
Frequency/Voltage Control

Auto Detect DIMM/PCI Clk	Enabled	Item Help
Spread Spectrum	Enabled	
Clock By Slight Adjust	66	Menu Level >
CPU Internal Freq Will Be	198 Mhz	
CPU Clock Ratio	Auto	
Vcore Adjust	1.30V	
(May be dangerous if Vcore Adjust ovr 10%)		
Vio Voltage Adjust	3.4V	
↑ ↓ → ← 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. The settings are: Enabled, Disabled.

### Spread Spectrum

This item allows you to set the Spread Spectrum.

### Clock By Slight Adjust

This item allows you to select the CPU clock from 66MHz to 166MHz depending on the CPU host clock.

### CPU Clock Ratio

This item allows you to select the CPU clock ratio.

### Vcore Adjust

This item allows you to adjust the Vcore from 1.30V to 1.55V. Please note that it may be dangerous to adjust the Vcore over 10%.

### Vio Voltage Adjust

This item allows you to adjust the Vio Voltage. The settings are: Default, 3.4V, 3.5V and 3.6V.

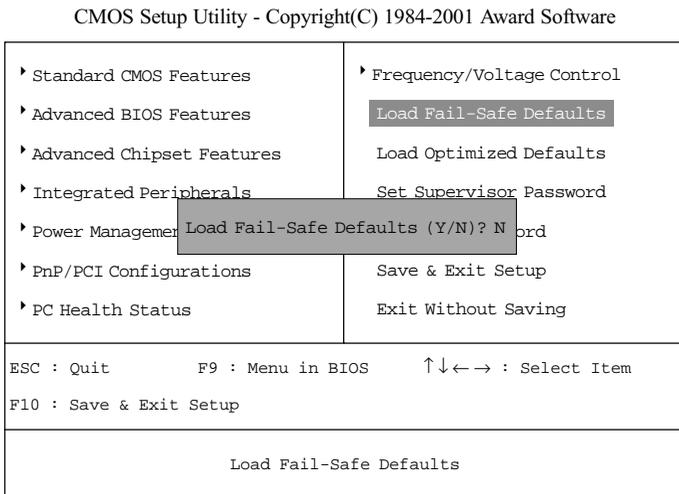
## Chapter 3

# Load Fail-Safe/Optimized Defaults

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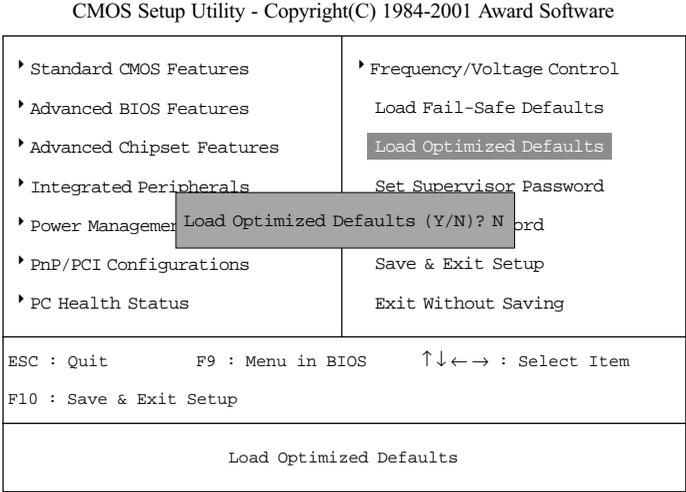
The two options on the main menu allow users to restore all of the BIOS settings to the default Fail-Safe or Optimized values. The Optimized Defaults are the default values set by the mainboard manufacturer specifically for the optimal performance of the mainboard. The Fail-Safe Defaults are the default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

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



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:

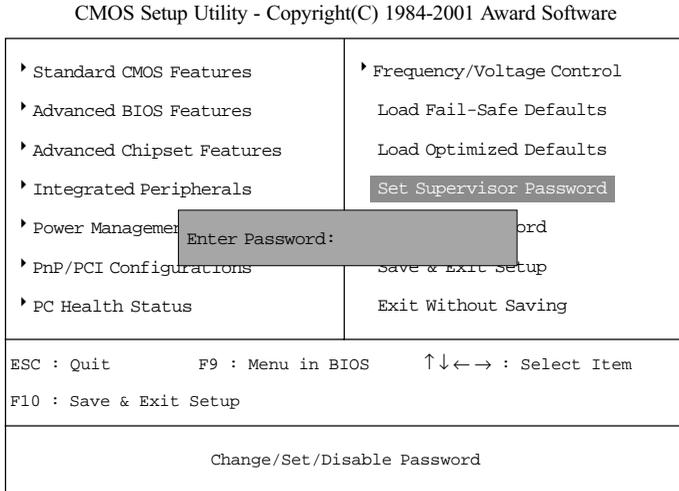


Pressing *Y* loads the default factory settings for optimal system performance.

## Chapter 3

# Set Supervisor/User Password

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



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 menus.

*User password:* Can only enter but do not have the right to change the settings of the setup menus

# **Appendix A: USB PC to PC Networking Function**

## **Overview**

USB PC to PC is the best solution for providing the easiest network connection service to you. By connecting multiple PCs through USB PC to PC port, you can build up a local area network without any network adapter. We give this Ethernet emulation environment a name — USB PC to PC. USB PC to PC supports TCP/IP, NetBEUI and IPX protocols. These features make your PCs can share their resources such as files or printers to each other. Further more, USB PC to PC also give you the ability of connecting to your existing Home or Office LAN for network resource or Internet sharing.

## **Installing GeneLink™ LAN Driver**

Before you use the function, you need to install the GeneLink™ LAN Driver to all the PCs connected via USB PC to PC.

### ***Step 1. Install driver***

1. Insert the driver CD and click “USB PC to PC” button to install the driver.
2. The welcome dialog box appears and click Next > button.
3. Choose the destination folder, and click Next > button.
4. Select components that you want to install, then click Next > button. (GeneLink™ LAN Driver is used to make all PCs are connected via USB PC to PC port, so it is just for resource sharing; GeneLink™ Software Router can make your PC connect to another existing Home/Office LAN, for network resource or Internet sharing.)
5. The Setup Program will install all necessary components automatically.
6. Setup complete. Then select ‘Yes, I want to restart my computer now’ and click “fInish” button to reboot your computer for updating your driver configuration.

After you complete the installation procedures, you’ll find Setup Program has installed GeneLink™ network driver in your computer. It binds TCP/IP, NetBEUI and IPX protocols to GeneLink™ device.

## **Appendix A**

### ***Step 2 – Connect your PCs via the USB PC to PC port***

### ***Step 3 - Network login***

When you restart your computer, you will be prompted for a user name and password to login your network. Please enter an unique name for your PCs.

### ***Step 4 – Sharing your resource and connecting to internet***

You need to manually share your resources (files, folders, drives and printers) to make them accessible for other computers; For Internet accessing, you must define which computer(That has already been connected to Internet) should install GeneLink™ Software Router; And all clients accessing Internet resources through GeneLink™ USB port should have installed GeneLink™ LAN driver.

### ***Notice:***

- 1. You should use the same network protocol (TCP/IP, NetBEUI or IPX) for connecting GeneLink™ LAN to existing Home/Office LAN*
- 2. If you've already configured your [IPX/SPX] and [Client for Netware Networks] before install GeneLink™ driver, we strongly recommend that you should also install **Software Router** as installing GeneLink™ driver into your system.*

## Using USB PC to PC Networking Function

### *How to share your files, folders, drives and printers*

- a. Go to the file, folder, drive or printer that you want to share.
- b. Right click your mouse pointer on the resource you want to share, you'll see a POP-UP Menu.



- c. Select “ Sharing”, and you'll see another Pop-Up Menu.



## **Appendix A**

- d. In “Sharing” tag, select “Share As”.
- e. Enter a name to help others recognize your sharing file or device (optional).
- f. Select “Access Type”. If you select “Depend on Password”, your need to assign an access password for this device.
- g. Click “OK” button.

### ***How to check if you have already shared your resource?***

Go to the resource and check if Windows had added a hand on its icon or not. If yes, it means you’ve successfully shared your resource and others can access it through USB PC to PC; if not, you need to repeat the steps described in “***How to share your files, folders, drives and printers***” to complete your sharing processes.

### ***Connecting to your existing Home or Office LAN***

To connect your USB PC to PC to another existing Home or Office LAN via USB PC to PC USB port, you need to install **GeneLink™ Software Router** in addition to GeneLink™ LAN driver. GeneLink™ Software Router is responsible for handling all network packets between USB PC to PC and your Home/Office LAN. So only the computer that is physically connected to both LANs needs to install GeneLink™ Software Router (i.e., this computer should install both GeneLink™ LAN and one network adapter for Home/Office LAN). For those computers on USB PC to PC, you only need to follow install procedure on manual to install GeneLink™ LAN driver for them. Following procedures will show you how to install drivers to the computer that will link both PC and your existing Home/Office LAN:

**Notice: if you want to connect your GeneLink™ LAN to your existing Home/Office LAN, you should use the same protocol for these two LANs.** For example, if your Home/Office LAN uses TCP/IP protocol, you should also use TCP/IP protocol for your GeneLink™ LAN. Otherwise, these two LANs cannot communicate to each other. The Setup Program installs TCP/IP, NetBEUI and IPX protocols for GeneLink™ LAN by default. If your Home/Office LAN uses other protocol, please install the same protocol for those computers within GeneLink™ LAN.

## USB PC to PC Networking Function

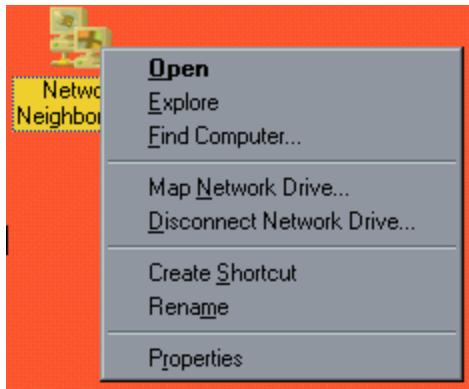
### Connecting to Internet through USB PC to PC & Office/Home LAN

If you would like to access Internet resources through USB PC to PC, here are some things you should notice:

- a. You must define which computer should install GeneLink™ Software Router;
- b. The computer which had installed GeneLink™ Software Router should have already been connected to internet;
- c. All clients which would like to access Internet resources through USB cable should have installed GeneLink™ driver.

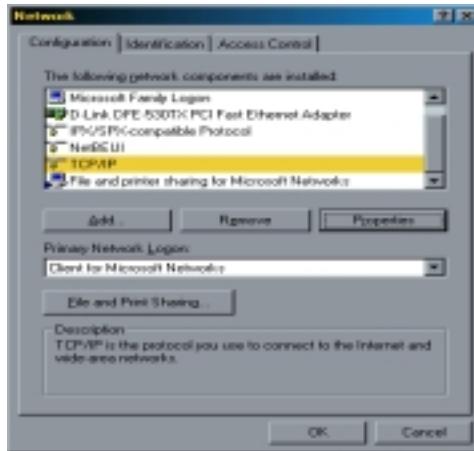
Now we need to do some network configurations on the Desktop/Notebook which connect to GeneLink™ Software Router to make your Internet access possible (maybe you need to consult you Network Administrator for doing that):

- a. If your existing HOME/OFFICE network is NOT using DHCP to assign client's IP address, your need to:  
Move your mouse pointer on Network Neighborhood icon and right click on it. You'll see a pop-up menu.

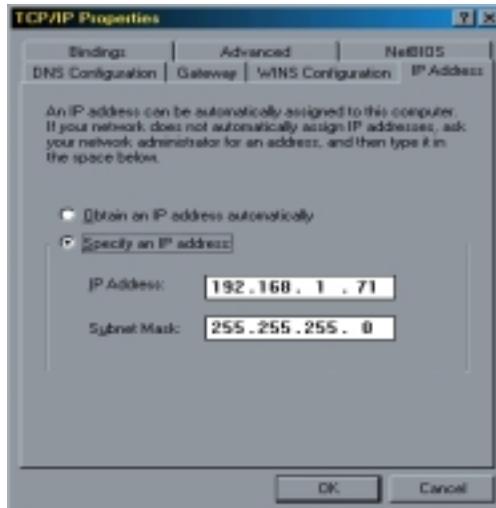


## Appendix A

Click on “Properties”, you’ll see another menu.



Choose TCP/IP in Configuration tag, and then press “Properties” button. You’ll see “TCP/IP Properties” menu.



## **USB PC to PC Networking Function**

Now you need to navigate between “IP Address”, “Gateway”, and “DNS Configuration” tags to specify “IP Address”, “Subnet Mask”, “Gateway” and “DNS Server”. If you don’t know their value, please consult your Network Administrator.

Press “OK” button to go backward to “Network” pop-up menu. Choose “Identification” tag. Specify a unique name for your computer if it doesn’t have and fill the name of your workgroup. If you are not sure what’s the name of your computer or Workgroup, please consult your Network Administrator.



Press “OK” to complete your network configuration. Restart your computer and you’ll be ready to connect to Internet.

- b. If your existing HOME/OFFICE network IS using DHCP to assign client’s IP address, your Network Sever will configure your network configuration automatically. So you can skip those procedures described in previous session.

## ***Appendix A***

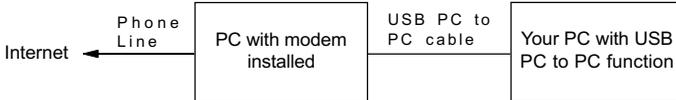
### **SPECIAL NOTICE for those users who have already installed Network Adapter in their system:**

If you've already configured your [IPX/SPX] and [Client for Netware Networks] before install GeneLink™ driver, we strongly recommend that you should also install ***Software Router*** when you installing GeneLink™ driver into your system. If you decide not to install ***Software Router***, then the OS will not allow two IPX/SPX configurations co-exist in the same system. This will cause GeneLink™ Driver Install Program overwrite your original IPX/SPX configuration and make your original network configuration malfunction.

## USB PC to PC Networking Function

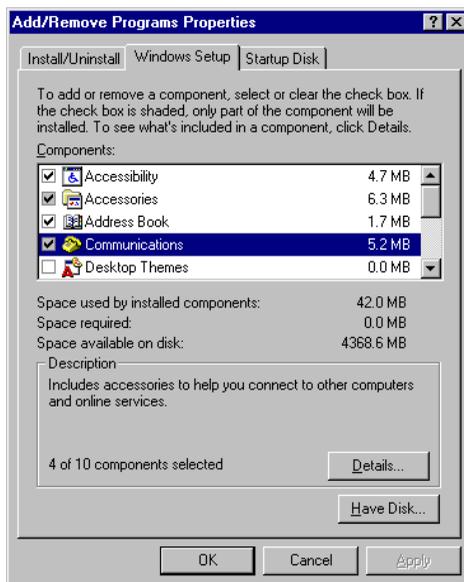
### Connecting to internet through USB PC to PC & another PC with modem

If there is no existing Office/Home LAN and your computer does not have a modem, you still can connect USB PC to PC to internet through another computer with a modem installed. **The function is available in Windows® 98SE and ME.**



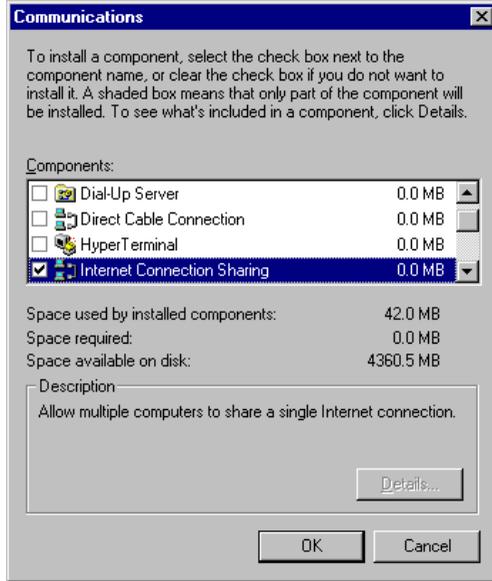
To access internet through another computer with modem, you need to setup “Internet Connection Sharing” on all computers connected via USB PC to PC cables. Instructions are as follows:

- Go to “Control Panel”.
  - Double click “Add/Remove Programs” and the “Add/Remove Programs Properties” window appears.
  - Select “Windows Setup” tag and double click “Communications”.
- The “Communications” window appears.



## Appendix A

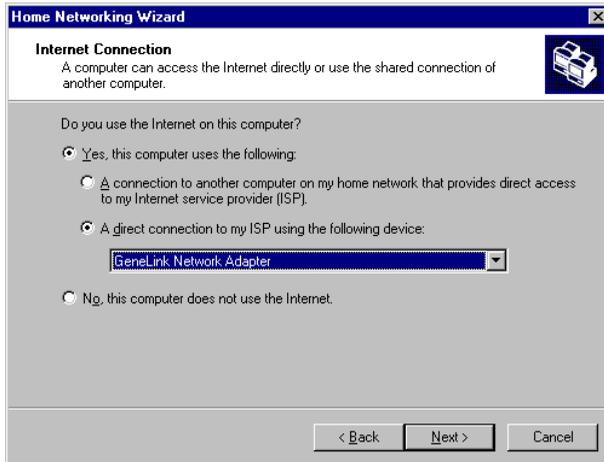
- d. Check “Internet Connection Sharing” and click “OK”.



- e. The “Home Networking Wizard” starts. Click “Next”.



- f. Click “A direct connection to my ISP using the following device”, and select “GeneLink Network Adapter” from the pull-down menu. Click “Next”.



**Note:** For the computer with a modem installed, you need to select “My Connection” instead of “GeneLink Network Adapter” on the step, and after finishing installation of “My Connection”, select “GeneLink Network Adapter” when the following window returns.

## Appendix A

- g. Continue to click “Next”.
- h. Click “Finish.”



- i. Restart the computer.

**Note:** In Windows® 98SE, you can access internet through the shared connection of another computer, but it is unable for you to control the remote modem. However, in *Windows® ME*, you are allowed to dial the remote modem of another computer using the dialing program built in Windows® ME.

## Appendix B: 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.

## **Appendix B**

### **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.