

MSI

MICRO-STAR INTERNATIONAL

MS-6337 LE5 ATX Mainboard



Version 5.0
G52-MA00370

Manual Rev: 5.0
Release Date: May 2001



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.

Micro-Star International MS-6337 LE5



**Tested to comply
with FCC Standard**

For Home or Office Use

Edition

May 2001

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Award is a registered trademark of Award Software Inc.

Revision History

Revision	Revision History	Date
5.0	First release for 5.X PCB	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 60⁰ C (140⁰F), 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 MS-6337 LE5 ATX mainboard is a high-performance computer mainboard based on Intel® 815EP chipset. 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 815EP chipset contains 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
Jumpers & Connectors	1-5
Back Panel	1-6

Chapter 1

Mainboard Specifications

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® 815EP chipset
 - 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
 - USB controller 1.1

Main Memory

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

Slots

- One CNR (Communication Network Riser).
- One AGP (Accelerated Graphics Port) 2x/4x slot
- 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 two IDE devices.

On-Board Peripherals

- On-Board Peripherals include:
 - 1 floppy port supports 2 FDD with 360K, 720K, 1.2M, 1.44M and 2.88Mbytes.
 - 2 serial ports (COMA/COMB)

- 1 parallel port supports SPP/EPP/ECP mode
- 2 USB ports

Audio

- ICH2 chip integrated
- Support 2 channel audio

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.

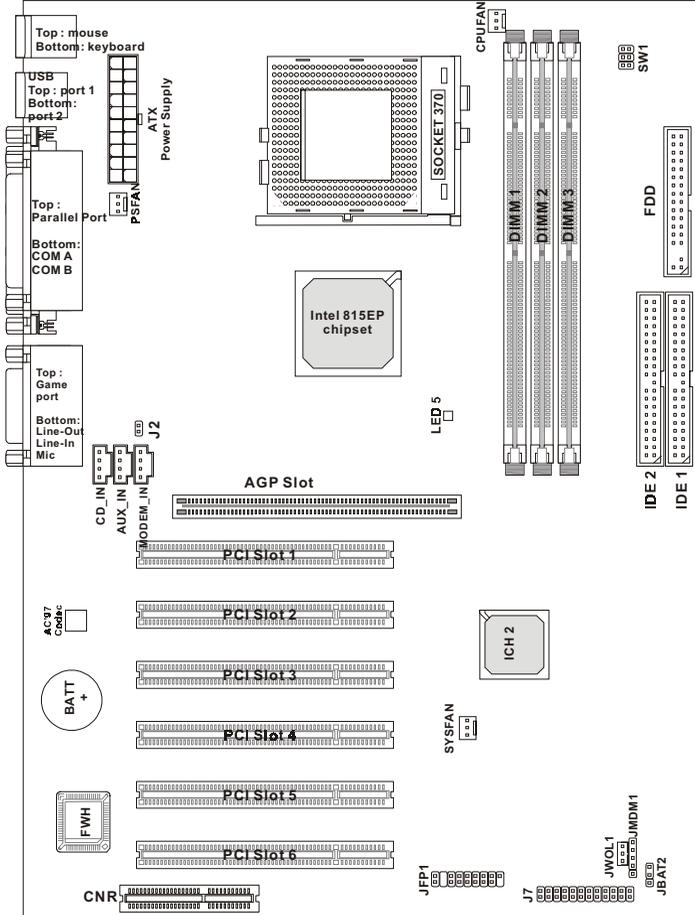
Dimension

- ATX Form Factor

Mounting

- 6 mounting holes.

Mainboard Layout



MS-6337LE5ATX Mainboard

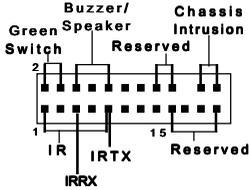
Jumpers & Connectors

SW1



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

J7

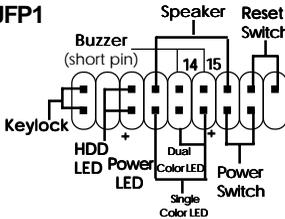


J7 is a Front Panel Connector.

Speaker Output

Short 6-8 pin to activate AC97_SPKR
Short 8-10 pin to activate onboard Buzzer.

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.

LED5



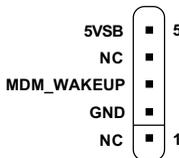
LED 5 indicates the DIMM power. When LED 5 is powered on, do not attempt to insert or remove the DIMM module.

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.

JMDM1



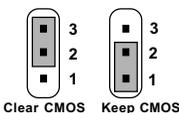
This connector allows you to connect to a modem card with Wake On Ring function. The connector will power up the system when a signal is received through the modem card.

J2



J2 is used to check the AGP chipset temperature on AGP card. This function is reserved upon request.

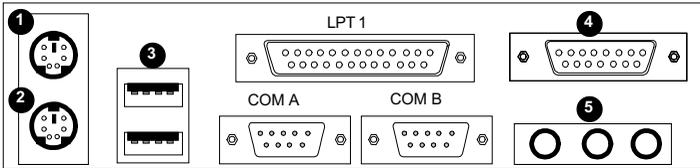
JBAT2



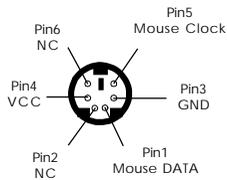
A battery must be used to retain the mainboard configuration in CMOS RAM. Short 1-2 pins of JBAT2 to store the CMOS data.

Chapter 1

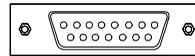
Back Panel



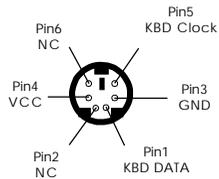
1 Mouse Connector



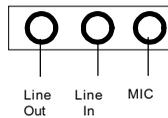
4 Joystick/MIDI



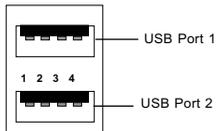
2 Keyboard Connector



5 Audio Ports



3 USB Ports



PIN	SIGNAL
1	VCC
2	-Data
3	+Data
4	GND

AWARD® BIOS Setup 2

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:

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Advanced BIOS Features	2-5
Advanced Chipset Features	2-6
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Entering Setup

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

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

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

Getting Help

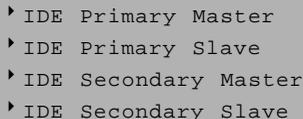
After entering the Setup menu, the first menu you will see is the Main Menu.

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.

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...	

Chapter 2

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		

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	
Typematic Rate Setting	Disabled	
Typematic Rate (Chars/Sec)	6	
Typematic Delay (Msec)	250	
Security Option	Setup	
OS Select for DRAM > 64MB	Non-OS2	
HDD S.M.A.R.T. Capability	Disabled	
Report No FDD For 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		

Chapter 2

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.

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		

Chapter 2

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		

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			

Chapter 2

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		

Frequency/Voltage Control

This section is for setting CPU Frequency/Voltage Control.

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

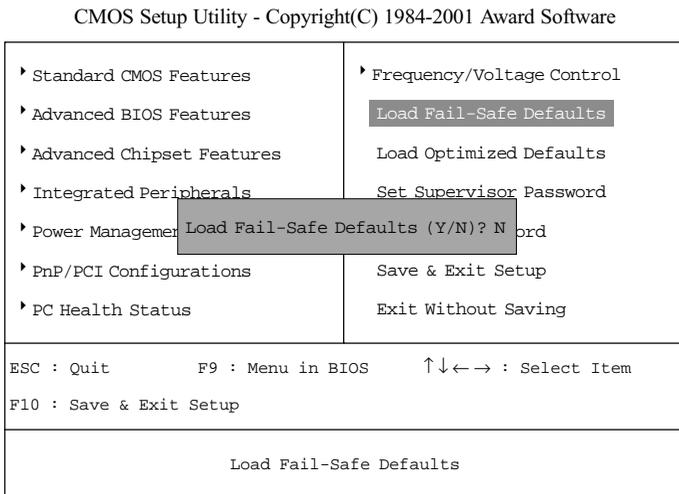
Auto Detect DIMM/PCI Clk	Enabled	Item Help
Spread Spectrum	Enabled	
Clock By Slight Adjust	66	Menu Level >
CPU Internal Freq Will Be	198 Mhz	
CPU Clock Ratio	Auto	
Vcore Adjust	1.30V	
(May be dangerous if Vcore Adjust ovr 10%)		
Vio Voltage Adjust	3.4V	
↑↓ →← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Chapter 2

Load Fail-Safe/Optimized Defaults

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

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



Load Fail-Safe Defaults

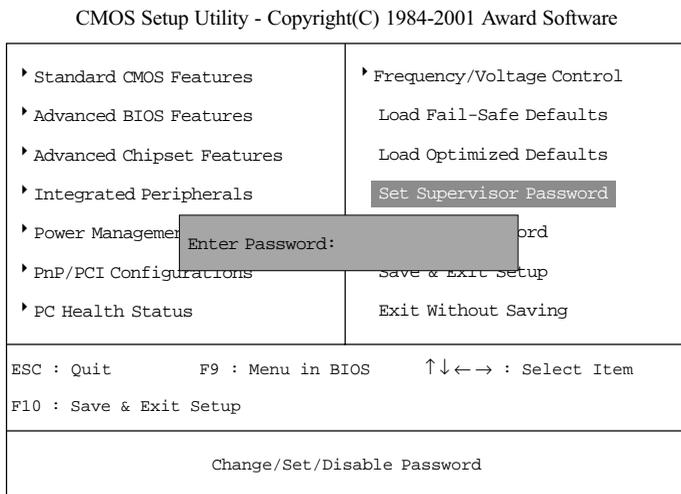
Pressing *Y* to load the BIOS default values for the most stable, minimal system performance.

Load Optimized Defaults

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

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

Chapter 2

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