GA-8SGXL

P4 Titan DDR Motherboard

USER'S MANUAL

Pentium® 4 Processor Motherboard

Rev. 1001

12ME-8SGXL-1001

English

Table of Content

WARNING!

Computer motherboards and expansion cards contain very delicate Integrated Circuit (IC) chips. To protect them against damage from static electricity, you should follow some precautions whenever you work on your computer.

1. Unplug your computer when working on the inside.
2. Use a grounded wrist strap before handling computer components. If you do not have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case.
3. Hold components by the edges and try not touch the IC chips, leads or connectors, or other components.
4. Place components on a grounded antistatic pad or on the bag that came with the components whenever the components are separated from the system.
5. Ensure that the ATX power supply is switched off before you plug in or remove the ATX power connector on the motherboard.

Installing the motherboard to the chassis...

If the motherboard has mounting holes, but they don't line up with the holes on the base and there are no slots to attach the spacers, do not become alarmed you can still attach the spacers to the mounting holes. Just cut the bottom portion of the spacers (the spacer may be a little hard to cut off, so be careful of your hands). In this way you can still attach the motherboard to the base without worrying about short circuits. Sometimes you may need to use the plastic springs to isolate the screw from the motherboard PCB surface, because the circuit wire may be near by the hole. Be careful, don't let the screw contact any printed circuit write or parts on the PCB that are near the fixing hole, otherwise it may damage the board or cause board malfunctioning.

Chapter 1 Introduction

Features Summary

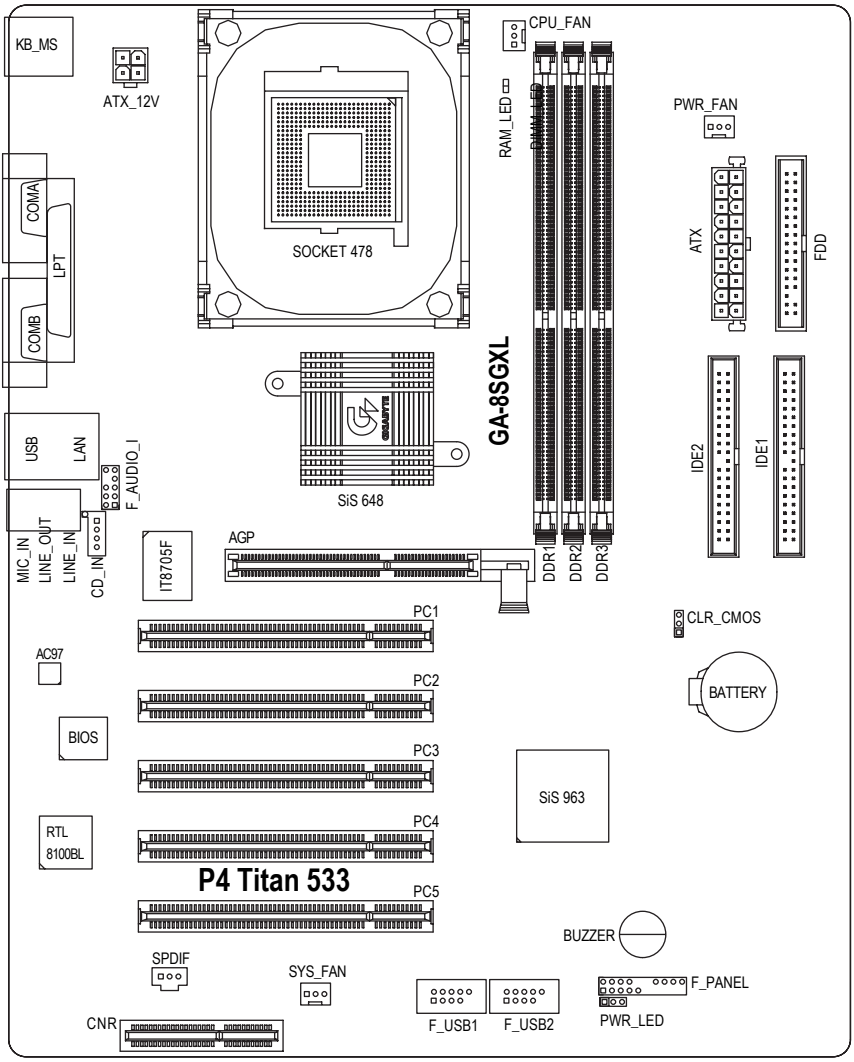
Form Factor	• 30.4cm x 24.3cm ATX size form factor, 4 layers PCB
CPU	• Socket 478 for Intel® Micro FC-PGA2 Pentium® 4 processor • Support Intel® Pentium® 4 (Northwood, 0.13μm) processor • Support Intel® Pentium® 4 Processor with HT Technology (optional) • Intel® Pentium® 4 400/533MHz FSB • 2nd cache depends on CPU
Chipset	• SiS 648 Host/Memory controller • SiS 963 MuTIOL Media I/O
Memory	• 3 184-pin DDR DIMM sockets • Supports DDR333/DDR266/DDR200 DIMM • Supports Up to 2 un-buffer Double-sided DIMM DDR333 or up to 3 un-buffer Double-sided DIMM DDR266/200 • Supports up to 3GB DRAM (Max) • Supports only 2.5V DDR DIMM
I/O Control	• IT8705F
Slots	• 1 AGP slot 4X/8X (1.5V) device support • 5 PCI slot supports 33MHz & PCI 2.2 compliant • 1 CNR (Communication and Networking Riser) slot
On-Board IDE	• 2 IDE bus master (UDMA33/ATA66/ATA100/ATA133) IDE ports for up to 4 ATAPI devices • Supports PIO mode3,4 (UDMA 33/ATA66/ATA100/ATA133) IDE & ATAPICD-ROM
On-Board Peripherals	• 1 Floppy port supports 2 FDD with 360K, 720K, 1.2M, 1.44M and 2.88M bytes • 1 Parallel port supports Normal/EPP/ECP mode • 2 Serial ports (COMA & COMB) • 6 USB 2.0/1.1 ports (2 x Rear, 4 xFront by cable) • 1 Front Audio Connector
Hardware Monitor	• CPU/System Fan Revolution detect

to be continued ...

On-Board Sound	• AC97 CODEC • Line In/ Line Out/ Mic In/ SPDIF/ CD In
On-Board LAN	• Built in RTL8100BL Chipset • 1 RJ45 port
PS/2 Connector	• PS/2 Keyboard interface and PS/2 Mouse interface
BIOS	• Licensed AWARD BIOS, 2M bit Flash ROM • Supports Q-Flash
Additional Features	• PS/2 Keyboard power on • PS/2 Mouse power on • STR(Suspend-To-RAM) • AC Recovery

Please set the CPU host frequency in accordance with your processor's specifications.
We don't recommend you to set the system bus frequency over the CPU's specification because these specific bus frequencies are not the standard specifications for CPU, chipset and most of the peripherals. Whether your system can run under these specific bus frequencies properly will depend on your hardware configurations, including CPU, Chipsets, SDRAM, Cards...tc.

GA-8SGXL Motherboard Layout



English

Chapter 2 Hardware Installation Process

To set up your computer, you must complete the following steps:

Step 1- Install the Central Processing Unit (CPU)

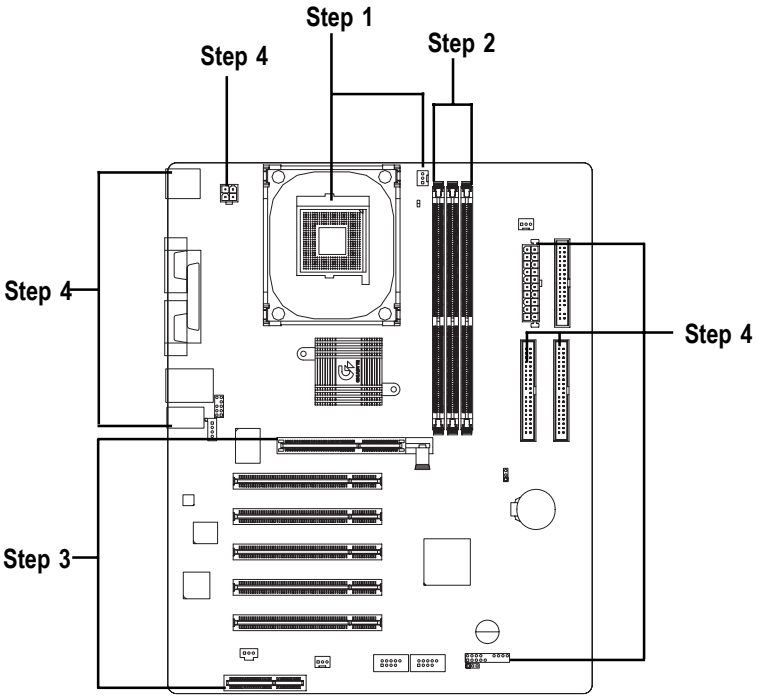
Step 2- Install memory modules

Step 3- Install expansion cards

Step 4- Connect ribbon cables, cabinet wires, and power supply

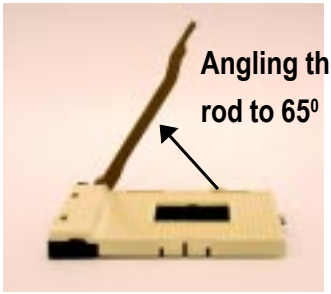
Step 5- Setup BIOS software

Step 6- Install supporting software tools

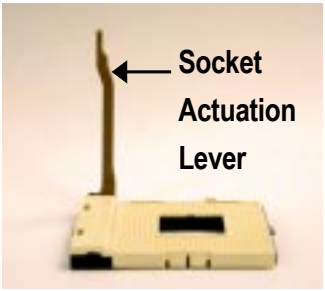


Step 1: Install the Central Processing Unit (CPU)

Step1-1 : CPU Installation



1. Angling the rod to 65-degree maybe feel a kind of tight, and then continue pull the rod to 90-degree when a noise "cough" made.



2. Pull the rod to the 90-degree directly.

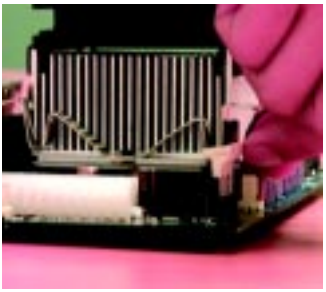
3. CPU Top View

4. Locate Pin 1 in the socket and look for a (golden) cut edge on the CPU upper corner. Then insert the CPU into the socket.

- **Please make sure the CPU type is supported by the motherboard.**
- **If you do not match the CPU socket Pin 1 and CPU cut edge well, it will cause improper installation. Please change the insert orientation.**

Step1-2 : CPU Heat Sink Installation

1. Hook one end of the cooler bracket to the CPU socket first.



2. Hook the other end of the cooler bracket to the CPU socket.

- **Please use Intel approved cooling fan.**
- **We recommend you to apply the thermal tape to provide better heat conduction between your CPU and heatsink.**
  (The CPU cooling fan might stick to the CPU due to the hardening of the thermal paste. During this condition if you try to remove the cooling fan, you might pull the processor out of the CPU socket alone with the cooling fan, and might damage the processor. To avoid this from happening, we suggest you to either use thermal tape instead of thermal paste, or remove the cooling fan with extreme caution.)
- **Make sure the CPU fan power cable is plugged in to the CPU fan connector, this completes the installation.**
- **Please refer to CPU heat sink user's manual for more detail installation procedure.**

Step 2: Install memory modules

The motherboard has 3 dual inline memory module (DIMM) sockets. The BIOS will automatically detects memory type and size. To install the memory module, just push it vertically into the DIMM socket. The DIMM module can only fit in one direction due to the notch. Memory size can vary between sockets.

Support Unbuffered DDR DIMM Sizes type:

64 Mbit (2Mx8x4 banks)	64 Mbit (1Mx16x4 banks)	128 Mbit(4Mx8x4 banks)
128 Mbit(2Mx16x4 banks)	256 Mbit(8Mx8x4 banks)	256 Mbit(4Mx16x4 banks)
512 Mbit(16Mx8x4 banks)	512 Mbit(8Mx16x4 banks)	

DDR

1. The DIMM socket has a notch, so the DIMM memory module can only fit in one direction.
2. Insert the DIMM memory module vertically into the DIMM socket. Then push it down.
3. Close the plastic clip at both edges of the DIMM sockets to lock the DIMM module.
   Reverse the installation steps when you wish to remove the DIMM module.

When RAM_LED is ON, do not install/remove DIMM from socket.

Please note that the DIMM module can only fit in one direction due to the one notches. Wrong orientation will cause improper installation. Please change the insert orientation.

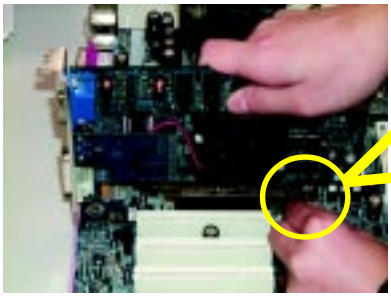
DDR Introduction

Established on the existing SDRAM industry infrastructure, DDR (Double Data Rate) memory is a high performance and cost-effective solution that allows easy adoption for memory vendors, OEMs and system integrators.

DDR memory is a sensible evolutionary solution for the PC industry that builds on the existing SDRAM infrastructure, yet makes awesome advances in solving the system performance bottleneck by doubling the memory bandwidth. DDR SDRAM will offer a superior solution and migration path from existing SDRAM designs due to its availability, pricing and overall market support. PC2100 DDR memory (DDR266) doubles the data rate through reading and writing at both the rising and falling edge of the clock, achieving data bandwidth 2X greater than PC133 when running with the same DRAM clock frequency. With peak bandwidth of 2.1GB per second, DDR memory enables system OEMs to build high performance and low latency DRAM subsystems that are suitable for servers, workstations, high-end PC's and value desktop SMA systems. With a core voltage of only 2.5 Volts compared to conventional SDRAM's 3.3 volts, DDR memory is a compelling solution for small form factor desktops and notebook applications.

Step 3: Install expansion cards

1. Read the related expansion card's instruction document before install the expansion card into the computer.
2. Remove your computer's chassis cover, necessary screws and slot bracket from the computer.
3. Press the expansion card firmly into expansion slot in motherboard.
4. Be sure the metal contacts on the card are indeed seated in the slot.
5. Replace the screw to secure the slot bracket of the expansion card.
6. Replace your computer's chassis cover.
7. Power on the computer, if necessary, setup BIOS utility of expansion card from BIOS.
8. Install related driver from the operating system.



AGP Card

Please carefully pull out the small white-drawable bar at the end of the AGP slot when you try to install / Uninstall the AGP card. Please align the AGP card to the onboard AGP slot and press firmly down on the slot. Make sure your AGP card is locked by the small white-drawable bar.

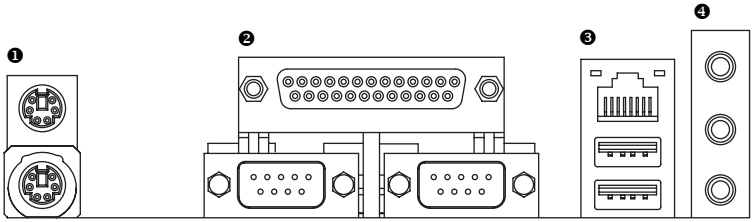
Issues To Beware Of When Installing CNR

Please use standard CNR card like the one in order to avoid mechanical problem.

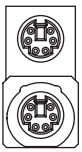
Standard CNR Card

Step 4: Connect ribbon cables, cabinet wires, and power supply

Step 4-1: I/O Back Panel Introduction



❶ PS/2 Keyboard and PS/2 Mouse Connector



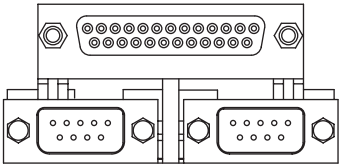
PS/2 Mouse Connector
(6 pin Female)

PS/2 Keyboard Connector
(6 pin Female)

➢ This connector supports standard PS/2 keyboard and PS/2 mouse.

❷ Parallel Port and Serial Ports (COMA/COMB)

Parallel Port
(25 pin Female)

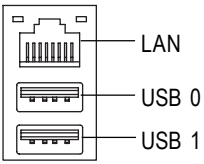


COMA COMB

Serial Ports (9 pin Male)

➢ This connector supports 2 standard COM ports and 1 Parallel port. Device like printer can be connected to Parallel port ; mouse and modem etc. can be connected to Serial ports.

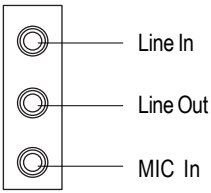
❸ LAN / USB Connector



➢ Before you connect your device(s) into USB connector(s), please make sure your device(s) such as USB keyboard,mouse, scanner, zip,speaker...etc. Have a standard USB interface. Also make sure your OS supports USB controller.

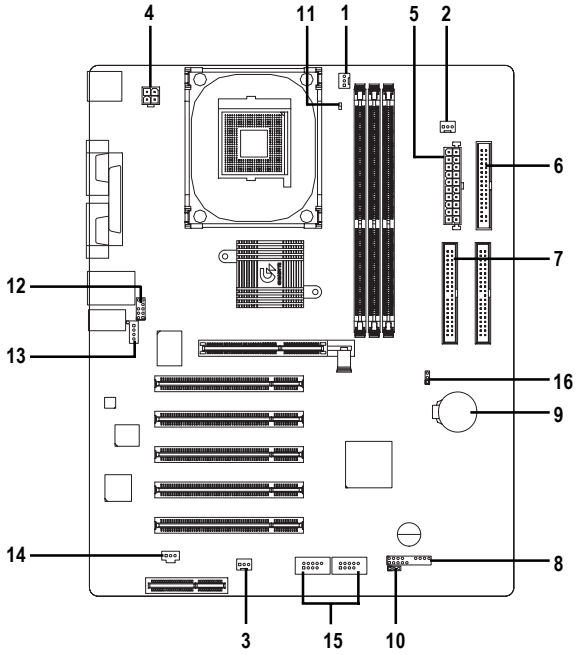
If your OS does not support USB controller, please contact OS vendor for possible patch or driver upgrade. For more information please contact your OS or device(s) vendors.

❹ Audio Connectors



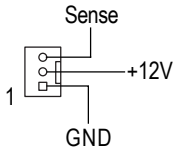
➢ After install onboard audio driver, you may connect speaker to Line Out jack, microphone to MIC In jack. Device like CD-ROM, walkman etc. can be connected to Line-In jack.

Step 4-2 : Connectors Introduction



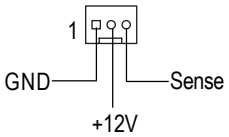
1) CPU_FAN	10) PWR_LED
2) PWR_FAN	11) RAM_LED
3) SYS_FAN	12) F_AUDIO
4) ATX_12V	13) CD_IN
5) ATX	14) SPDIF
6) FDD	15) F_USB
7) IDE1 / IDE2	16) CLR_CMOS
8) F_PANEL	
9) BATTERY	

1) CPU_FAN (CPU FAN Connector)



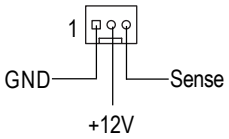
- Please note, a proper installation of the CPU cooler is essential to prevent the CPU from running under abnormal condition or damaged by overheating. The CPU fan connector supports Max. current up to 600 mA.

2) PWR_FAN (Power FAN Connector)



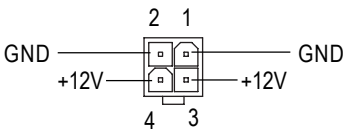
- This connector allows you to link with the cooling fan on the system case to lower the power temperature.

3) SYS_FAN (System FAN Connector)



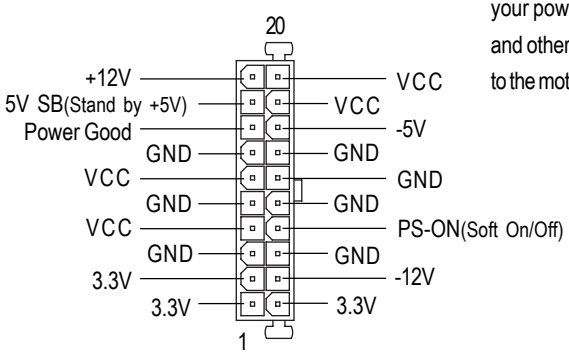
- This connector allows you to link with the cooling fan on the system case to lower the system temperature.

4) ATX_12V (+12V Power Connector)



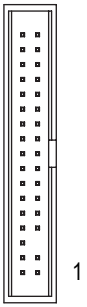
- This connector (ATX +12V) supplies the CPU operation voltage (Vcore).
  If this "ATX+ 12V connector" is not connected, system cannot boot.

5) ATX POWER (ATX Power Connector)



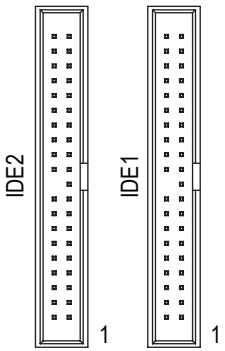
- AC power cord should only be connected to your power supply unit after ATX power cable and other related devices are firmly connected to the motherboard.

6) FDD (Floppy Connector)



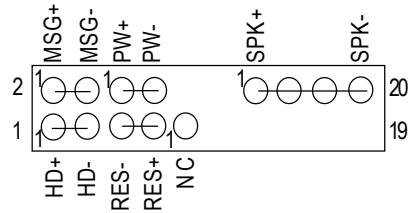
- Please connect the floppy drive ribbon cables to FDD. It supports 360K,1.2M, 720K, 1.44M and 2.88M bytes floppy disk types.
  The red stripe of the ribbon cable must be the same side with the Pin1.

7) IDE1/ IDE2 [IDE1 / IDE2 Connector (Primary/Secondary)]



- Important Notice:
  Please connect first hard disk to IDE1 and connect CD-ROM to IDE2.
  The red stripe of the ribbon cable must be the same side with the Pin1.

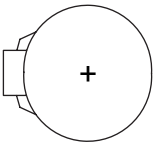
8) F_PANEL (2x10 pins connector)



HD (IDE Hard Disk Active LED)	Pin 1: LED anode(+) Pin 2: LED cathode(-)
SPK (Speaker Connector)	Pin 1: VCC(+) Pin 2- Pin 3: NC Pin 4: Data(-)
RES (Reset Switch)	Open: Normal Operation Close: Reset Hardware System
PW (Soft Power Connector)	Open: Normal Operation Close: Power On/Off
MSG(Message LED/Power/ Sleep LED)	Pin 1: LED anode(+) Pin 2: LED cathode(-)
NC	NC

➢ Please connect the power LED, PC speaker, reset switch and power switch etc. of your chassis front panel to the F_PANEL connector according to the pin assignment above.

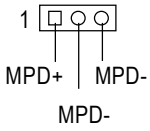
9) BATTERY (Battery)



CAUTION

- ❖ Danger of explosion if battery is incorrectly replaced.
- ❖ Replace only with the same or equivalent type recommended by the manufacturer.
- ❖ Dispose of used batteries according to the manufacturer's instructions.

10) PWR_LED

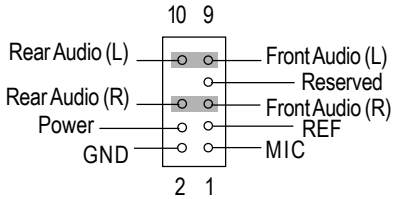


- PWR_LED is connect with the system power indicator to indicate whether the system is on/off. It will blink when the system enters suspend mode.
  If you use dual color LED, power LED will turn to another color.

11) RAM_LED

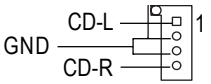
- Do not remove memory modules while RAM LED is on. It might cause short or other unexpected damages due to the 2.5V stand by voltage. Remove memory modules only when STR function is disabled by jumper and AC Power cord is disconnected.

12) F_AUDIO (Front Audio Connector)



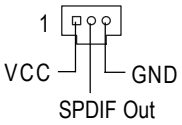
- If you want to use Front Audio connector, you must remove 5-6, 9-10 Jumper.
  In order to utilize the front audio header, your chassis must have front audio connector. Also please make sure the pin assigment on the cable is the same as the pin assigment on the MB header. To find out if the chassis you are buying support front audio connector, please contact your dealer.

13) CD_IN (CD Audio Line In)



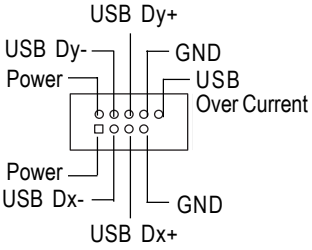
- Connect CD-ROM or DVD-ROM audio out to the connector.

14) SPDIF (SPDIF)



- The SPDIF output is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby Digital Decoder. Use this feature only when your stereo system has digital input function. 6 Channel output : A "S/PDIF output" connector is available on the motherboard. Please contact your nearest dealer for optional SPDIF cable.

15) F_USB1 / F_USB2 (Front USB Connector)
(F_USB1 & F_USB2 connectors in yellow are for USB 2.0)



- Be careful with the polarity of the front USB connector. Check the pin assignment while you connect the front USB cable. Please contact your nearest dealer for optional front USB 2.0 cable.

16) CLR_CMOS (Clear CMOS)#

1-2 close: Clear CMOS

open: Normal (Default)

- You may clear the CMOS data to its default values by this jumper.

  To clear CMOS, temporarily short 1-2 pin.

 # Default doesn't include the "Shunter" to prevent from improper use this jumper.

Chapter 3 BIOS Setup

BIOS Setup is an overview of the BIOS Setup Program. The program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

ENTERING SETUP

Powering ON the computer and pressing <Del> immediately will allow you to enter Setup. If you require more advanced BIOS settings, please go to "Advanced BIOS" setting menu. To enter Advanced BIOS setting menu, press "Ctrl+F1" key on the BIOS screen.

CONTROL KEYS

<↑>	Move to previous item
<↓>	Move to next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<Enter>	Select item
<Esc>	Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu - Exit current page and return to Main Menu
<+/PgUp>	Increase the numeric value or make changes
<-/PgDn>	Decrease the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F2>	Item Help
<F3>	Reserved
<F4>	Reserved
<F5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F6>	Load the file-safe default CMOS value from BIOS default table
<F7>	Load the Optimized Defaults
<F8>	Q-Flash
<F9>	System Information
<F10>	Save all the CMOS changes, only for Main Menu

GETTING HELP

Main Menu

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Status Page Setup Menu / Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc>.

The Main Menu (For example: BIOS Ver. : F1c)

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 eight 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) 1984-2002 Award Software

▸ Standard CMOS Features	Load Fail-Safe Defaults
▸ Advanced BIOS 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
▸ Frequency/Voltage Control*	
ESC:Quit	↑↓→←:Select Item
F8: Q-Flash	F10:Save & Exit Setup
Time, Date, Hard Disk Type...	

Figure 1: Main Menu

- **Standard CMOS Features**

  This setup page includes all the items in standard compatible BIOS.

- **Advanced BIOS Features**

  This setup page includes all the items of Award special enhanced features.

- **Integrated Peripherals**

  This setup page includes all onboard peripherals.

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

- **Power Management Setup**

  This setup page includes all the items of Green function features.

- **PnP/PCI Configurations**

  This setup page includes all the configurations of PCI & PnP ISA resources.

- **PC Health Status**

  This setup page is the System auto detect Temperature, voltage, fan, speed.

- **Frequency/Voltage Control***

  This setup page is to control CPU's clock and frequency ratio.

- **Load Fail-Safe Defaults**

  Fail-Safe Defaults indicates the value of the system parameters which the system would be in safe configuration.

- **Load Optimized Defaults**

  Optimized Defaults indicates the value of the system parameters which the system would be in best performance configuration.

- **Set Supervisor password**

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

- **Set User password**

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

- **Save & Exit Setup**

  Save CMOS value settings to CMOS and exit setup.

- **Exit Without Saving**

  Abandon all CMOS value changes and exit setup.

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

Standard CMOS Features

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Standard CMOS Features

Date (mm:dd:yy)	Fri, Oct 4 2002	Item Help
Time (hh:mm:ss)	10:32:23	Menu Level ▶
		Change the day, month,
▶IDE Primary Master	[None]	year
▶IDE Primary Slave	[None]	
▶IDE Secondary Master	[None]	<Week>
▶IDE Secondary Slave	[None]	Sun. to Sat.
Drive A	[1.44M, 3.5"]	<Month>
Drive B	[None]	Jan. to Dec.
Floppy 3 Mode Support	[Disabled]	
		<Day>
Halt On	[No Errors]	1 to 31 (or maximum
		allowed in the month)
Base Memory	640K	
Extended Memory	130048K	<Year>
Total Memory	131072K	1999 to 2098

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

Figure 2: Standard CMOS Features

☞ Date

The date format is <week>, <month>, <day>, <year>.

- ⏩Week The week, from Sun to Sat, determined by the BIOS and is display only
- ⏩Month The month, Jan. Through Dec.
- ⏩Day The day, from 1 to 31 (or the maximum allowed in the month)
- ⏩Year The year, from 1999 through 2098

☞ Time

The times format in <hour> <minute> <second>. The time is calculated base on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

☞ IDE Primary Master, Slave / IDE Secondary Master, Slave

The category identifies the types of hard disk from drive C to F that has been installed in the computer. There are two types: auto type, and manual type. Manual type is user-definable; Auto type which will automatically detect HDD 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 you select User Type, related information will be asked to enter to the following items. Enter the information directly from the keyboard and press <Enter>. Such information should be provided in the documentation form your hard disk vendor or the system manufacturer.

- CYLS. Number of cylinders
- HEADS Number of heads
- PRECOMP Write precomp
- LANDZONE Landing zone
- SECTORS Number of sectors

If a hard disk has not been installed select NONE and press <Enter>.

☞ Drive A / Drive B

The category identifies the types of floppy disk drive A or drive B that has been installed in the computer.

- None No floppy drive installed
- 360K, 5.25" 5.25 inch PC-type standard drive; 360K byte capacity.
- 1.2M, 5.25" 5.25 inch AT-type high-density drive; 1.2M byte capacity (3.5 inch when 3 Mode is Enabled).
- 720K, 3.5" 3.5 inch double-sided drive; 720K byte capacity
- 1.44M, 3.5" 3.5 inch double-sided drive; 1.44M byte capacity.
- 2.88M, 3.5" 3.5 inch double-sided drive; 2.88M byte capacity.

☞ Floppy 3 Mode Support (for Japan Area)

⏩ Disabled	Normal Floppy Drive. (Default value)
⏩ Drive A	Drive A is 3 mode Floppy Drive.
⏩ Drive B	Drive B is 3 mode Floppy Drive.
⏩ Both	Drive A & B are 3 mode Floppy Drives.

☞Halt on

The category determines whether the computer will stop if an error is detected during power up.

⏩ All Errors	Whenever the BIOS detects a non-fatal error the system will be stopped.
⏩ NO Errors	The system boot will not stop for any error that may be detected and you will be prompted. (Default value)
⏩ All, But Keyboard	The system boot will not stop for a keyboard error; it will stop for all other errors.
⏩ All, But Diskette	The system boot will not stop for a disk error; it will stop for all other errors.
⏩ All, But Disk/Key	The system boot will not stop for a keyboard or disk error; it will stop for all other errors.

☞ Memory

The category is display-only which is determined by POST (Power On Self Test) of the BIOS.

- - Base Memory

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system.

The value of the base memory is typically 512 K for systems with 512 K memory installed on the motherboard, or 640 K for systems with 640 K or more memory installed on the motherboard.

- - Extended Memory

The BIOS determines how much extended memory is present during the POST.

This is the amount of memory located above 1 MB in the CPU's memory address map.

Advanced BIOS Features

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Advanced BIOS Features

First Boot Device	[CDROM]	Item Help
Second Boot Device	[Floppy]	Menu Level ▶
Third Boot Device	[HDD-0]	Select Boot Device
Boot Up Floppy Seek	[Disabled]	priority
Password Check	[Setup]	
CPU Hyper-Threading*	[Enabled]	[Floppy]
Full Screen LOGO Show	[Enabled]	Boot from floppy
Init Display First	[AGP]	
		[LS120]
		Boot from LS120
		[HDD-0]
		Boot from First HDD
		[HDD-1]
		Boot from second HDD

↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help

F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 3: Advanced BIOS Features

First / Second / Third Boot Device

Floppy	Select your boot device priority by Floppy.
LS120	Select your boot device priority by LS120.
HDD-0~3	Select your boot device priority by HDD-0~3.
SCSI	Select your boot device priority by SCSI.
CDROM	Select your boot device priority by CDROM.
ZIP	Select your boot device priority by ZIP.
USB-FDD	Select your boot device priority by USB-FDD.
USB-ZIP	Select your boot device priority by USB-ZIP.
USB-CDROM	Select your boot device priority by USB-CDROM.
USB-HDD	Select your boot device priority by USB-HDD.
LAN	Select your boot device priority by LAN.
Disabled	Select your boot device priority by Disabled.

* This item will not be shown if you are using a CPU that doesn't support the "Hyper Threading Technology".

Boot Up Floppy Seek

During POST, BIOS will determine the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks 720K, 1.2M and 1.44M are all 80 tracks.

- Enabled — BIOS searches for floppy disk drive to determine it is 40 or 80 tracks. Note that BIOS can not tell from 720K, 1.2M or 1.44M drive type as they are all 80tracks.
- Disabled — BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360K. (Default value)

Password Check

- Setup — Ask password when enter setup. (Default value)
- System — Ask password when system boot.

CPU Hyper-Threading*

- Disabled — Disable CPU Hyper Threading.
- Enabled — Enables CPU Hyper Threading Feature. Please note that this feature is only working for operating system with multi processors mode supported. (Default value)

Full Screen LOGO Show

This feature allows you to show the company logo on the bootup screen.

- Disabled — Shows the POST messages at boot.
- Enabled — Shows the still image(LOGO) on the full screen at boot. (Default value)

Init Display First

- PCI — Set Init Display First to PCI.
- AGP — Set Init Display First to AGP. (Default value)

* This item will not be shown if you are using a CPU that doesn't support the "Hyper Threading Technology".

Integrated Peripherals

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Integrated Peripherals

IDE1 Conductor Cable	[Auto]	Item Help
IDE2 Conductor Cable	[Auto]	Menu Level ▶
On-Chip Primary PCI IDE	[Enabled]	[Auto]
On-Chip Secondary PCI IDE	[Enabled]	Auto-detect IDE
AC97 Audio	[Enabled]	cable type
USB Controller	[Enabled]	
USB Legacy Support	[Disabled]	[ATA66/100/133]
Onboard LAN device	[Enabled]	Set Conductor cable
Onboard Serial Port 1	[3F8/IRQ4]	to ATA66/100/133(80-pins)
Onboard Serial Port 2	[2F8/IRQ3]	
Onboard Parallel Port	[378/IRQ7]	[ATA33]
Parallel Port Mode	[EPP]	Set Conductor cable
x ECP Mode Use DMA	3	to ATA33(40-pins)

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

Figure 4: Integrated Peripherals

☞ IDE1 Conductor Cable

- ⏩ Auto — Will be automatically detected by BIOS. (Default Value)
- ⏩ ATA66/100/133 — Set IDE1 Conductor Cable to ATA66/100/133 (Please make sure your IDE device and cable is compatible with ATA66/100/133).
- ⏩ ATA33 — Set IDE1 Conductor Cable to ATA33 (Please make sure your IDE device and cable is compatible with ATA33).

IDE2 Conductor Cable

Auto	Will be automatically detected by BIOS. (Default Value)
ATA66/100/133	Set IDE2 Conductor Cable to ATA66/100/133 (Please make sure your IDE device and cable is compatible with ATA66/100/133).
ATA33	Set IDE2 Conductor Cable to ATA33 (Please make sure your IDE device and cable is compatible with ATA33).

On-Chip Primary PCI IDE

Disabled	Disable onboard 1st channel IDE port.
Enabled	Enable onboard 1st channel IDE port. (Default value)

On-Chip Secondary PCI IDE

Disabled	Disable onboard 2nd channel IDE port.
Enabled	Enable onboard 2nd channel IDE port. (Default value)

AC97 Audio

Enabled	Enable onboard AC'97 audio function. (Default value)
Disabled	Disable this function.

USB Controller

Enabled	Enable USB Controller. (Default value)
Disabled	Disable USB Controller.

USB Legacy Support

Enabled	Enable USB keyboard or mouse support.
Disabled	Disable USB keyboard or mouse support. (Default value)

Onboard LAN device

Enabled	Enabled Onboard Lan Chip function. (Default value)
Disabled	Disable this function.

Onboard Serial Port 1

- Disabled — Disable onboard Serial port 1.
- 3F8/IRQ4 — Enable onboard Serial port 1 and address is 3F8. (Default value)
- 2F8/IRQ3 — Enable onboard Serial port 1 and address is 2F8.
- 3E8/IRQ4 — Enable onboard Serial port 1 and address is 3E8.
- 2E8/IRQ3 — Enable onboard Serial port 1 and address is 2E8.
- Auto — BIOS will automatically setup the port 1 address.

Onboard Serial Port 2

- Disabled — Disable onboard Serial port 2.
- 3F8/IRQ4 — Enable onboard Serial port 2 and address is 3F8.
- 2F8/IRQ3 — Enable onboard Serial port 2 and address is 2F8. (Default value)
- 3E8/IRQ4 — Enable onboard Serial port 2 and address is 3E8.
- 2E8/IRQ3 — Enable onboard Serial port 2 and address is 2E8.
- Auto — BIOS will automatically setup the port 2 address.

Onboard Parallel port

- Disabled — Disable onboard LPT port.
- 378/IRQ7 — Enable onboard LPT port and address is 378/IRQ7. (Default Value)
- 278/IRQ5 — Enable onboard LPT port and address is 278/IRQ5.
- 3BC/IRQ7 — Enable onboard LPT port and address is 3BC/IRQ7.

Parallel Port Mode

- SPP — Using Parallel port as Standard Parallel Port.
- EPP — Using Parallel port as Enhanced Parallel Port. (Default Value)
- ECP — Using Parallel port as Extended Capabilities Port.
- ECP+EPP — Using Parallel port as ECP & EPP mode.

ECP Mode Use DMA

This function will available when "Parallel Port Mode" set at ECP or ECP+EPP.

- 1 — Set ECP Mode Use DMA to 1.
- 3 — Set ECP Mode Use DMA to 3. (Default Value)

Power Management Setup

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Power Management Setup

ACPI Suspend Type	[S3(STR)]	Item Help
Soft-Off by PWR_BTTN	[Off]	Menu Level ▶
System After AC Back	[Laststate]	[S1]
IRQ [3-7, 9-15], NMI	[Enabled]	Set suspend type to
ModemRingOn	[Enabled]	Power On Suspend under
PME Event Wake Up	[Enabled]	ACPI OS
Power On by Keyboard	[Disabled]	
Power On by Mouse	[Disabled]	[S3]
Resume by Alarm	[Disabled]	Set suspend type to
x Month Alarm	NA	Suspend to RAM under
x Day (of Month)	0	ACPI OS
x Time (hh:mm:ss)	0 : 0 : 0	
Power LED in S1 state	Blinking	

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

Figure 5: Power Management Setup

☞ ACPI Suspend Type

- ⏩ S1(POS) Set ACPI suspend type to S1.
- ⏩ S3(STR) Set ACPI suspend type to S3. (Default Value)

☞ Soft-off by PWR_BTTN

- ⏩ Off The user press the power button once, he can turn off the system. (Default Value)
- ⏩ Suspend The user press the power button once, then he can enter suspend mode.

☞ System After AC Back

- ⏩ Off When AC-power back to the system, the system will be in "Off" state.
- ⏩ On When AC-power back to the system, the system will be in "On" state.
- ⏩ LastState When AC-power back to the system, the system will return to the Last state before AC-power off. (Default Value)

IRQ [3-7, 9-15], NMI

- Disabled — Disable this function.
- Enabled — Enable this function. (Default value)

ModemRingOn

- Disabled — Disable Modem Ring on/wake on Lan function.
- Enabled — Enable Modem Ring on/wake on Lan. (Default Value)

PME Event Wake Up

- Disabled — Disable this function.
- Enabled — Enable PME Event Wake up. (Default Value)

Power On by Keyboard

- Any Key — Set Keyboard power on by any key.
- Password — Input password (from 1 to 8 characters) and press Enter to set the Keyboard Power On Password.
- Disabled — Disable this function. (Default Value)

Power On by Mouse

- Disabled — Disable this function. (Default Value)
- Enabled — Enable Power On by Mouse function.

Resume by Alarm

You can set "Resume by Alarm" item to enabled and key in Data/time to power on system.

- Disabled — Disable this function. (Default Value)
- Enabled — Enable alarm function to POWER ON system.

If RTC Alarm Lead To Power On is Enabled.

Month Alarm :	NA, 1~12
Day (of Month) :	1~31
Time (hh: mm: ss) :	(0~23) : (0~59) : (0~59)

Power LED in S1 state

- Blinking — In standby mode(S1), power LED will blink. (Default Value)
- Dual/OFF — In standby mode(S1):
  a. If use single color LED, power LED will turn off.
  b. If use dual color LED, power LED will turn to another color.

PnP/PCI Configurations

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PnP/PCI Configurations

PCI 4 IRQ Assignment	[Auto]	Item Help
PCI 1/5 IRQ Assignment	[Auto]	Menu Level ▶
PCI 2 IRQ Assignment	[Auto]	
PCI 3 IRQ 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

Figure 6: PnP/PCI Configurations

☞ PCI 4 IRQ Assignment

⏩Auto	Auto assign IRQ to PCI 4. (Default value)
⏩3,4,5,7,9,10,11,12,14,15	Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 4.

☞ PCI 1/5 IRQ Assignment

⏩Auto	Auto assign IRQ to PCI 1/5. (Default value)
⏩3,4,5,7,9,10,11,12,14,15	Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 1/5.

☞ PCI 2 IRQ Assignment

⏩Auto	Auto assign IRQ to PCI 2. (Default value)
⏩3,4,5,7,9,10,11,12,14,15	Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 2.

☞ PCI 3 IRQ Assignment

⏩Auto	Auto assign IRQ to PCI 3. (Default value)
⏩3,4,5,7,9,10,11,12,14,15	Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 3.

PC Health Status

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PC Health Status

Current CPU FAN Speed	4386 RPM	Item Help
Current SYSTEM FAN Speed	0 RPM	Menu Level ▶

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

Figure 7: PC Health Status

☞ Current CPU FAN Speed (RPM)

⏩ Detect CPU Fan speed status automatically.

☞ Current SYSTEM FAN Speed (RPM)

⏩ Detect SYSTEM Fan speed status automatically.

Frenquency/Voltage Control*

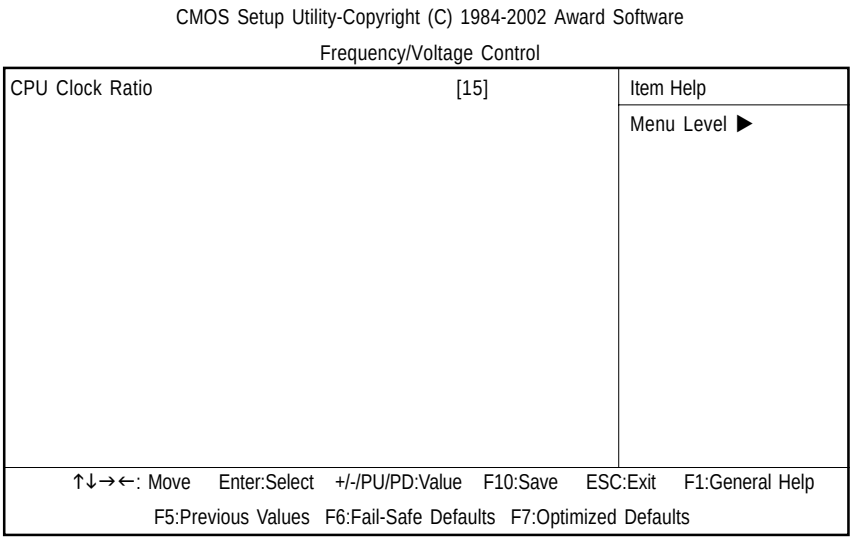

Figure 7: PC Health Status

☞ CPU Clock Ratio

▸▸15X~21X It's depends on CPU Clock Ratio.

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

Load Fail-Safe Defaults

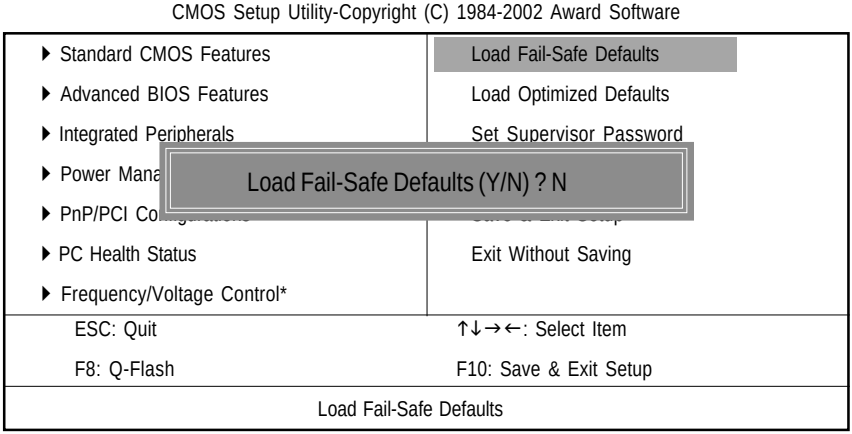

Figure 9: Load Fail-Safe Defaults

Load Fail-Safe Defaults

Fail-Safe defaults contain the most appropriate values of the system parameters that allow minimum system performance.

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

Load Optimized Defaults

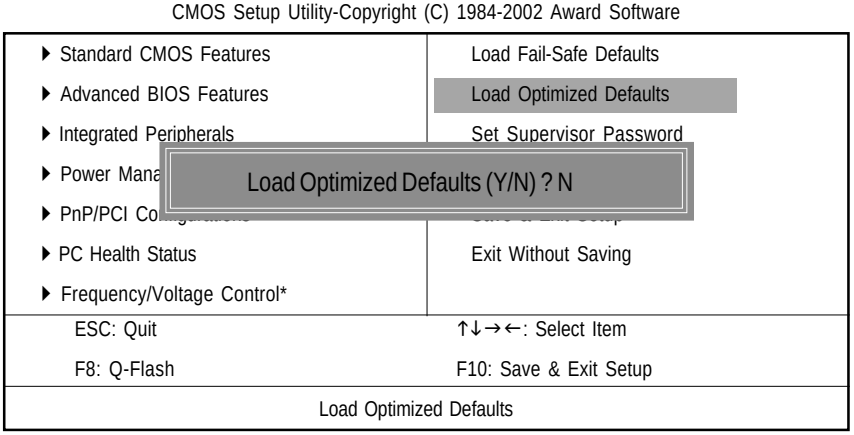

Figure 10: Load Optimized Defaults

Load Optimized Defaults

Selecting this field loads the factory defaults for BIOS and Chipset Features which the system automatically detects.

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

Set Supervisor/User Password

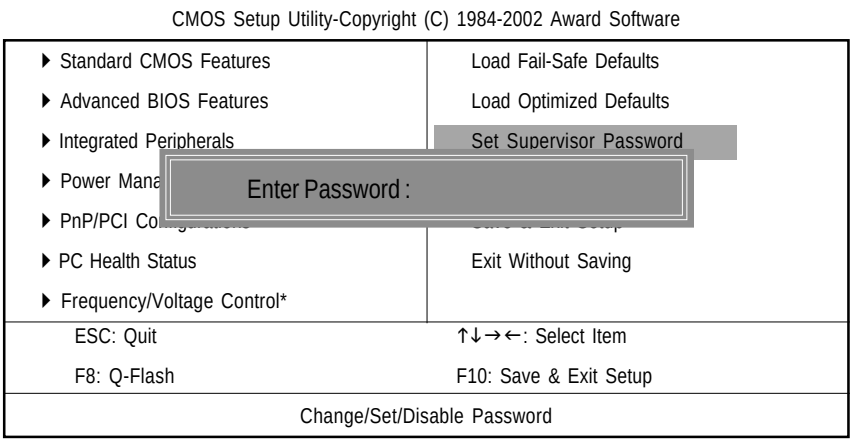

Figure 11: Password Setting

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

Type the password, up to eight characters, and press <Enter>. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disable password, just press <Enter> when you are prompted to enter password. A message "PASSWORD DISABLED" will appear to confirm the password being disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

The BIOS Setup program allows you to specify two separate passwords:

SUPERVISOR PASSWORD and a USER PASSWORD. When disabled, anyone may access all BIOS Setup program function. When enabled, the Supervisor password is required for entering the BIOS Setup program and having full configuration fields, the User password is required to access only basic items.

If you select "System" at "Password Check" in Advance BIOS Features Menu, you will be prompted for the password every time the system is rebooted or any time you try to enter Setup Menu.

If you select "Setup" at "Password Check" in Advance BIOS Features Menu, you will be prompted only when you try to enter Setup.

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

Save & Exit Setup

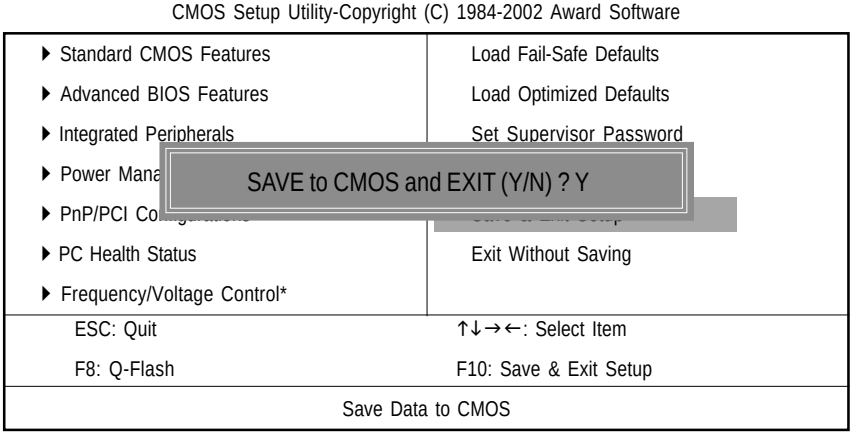

Figure 12: Save & Exit Setup

Type "Y" will quit the Setup Utility and save the user setup value to RTC CMOS.

Type "N" will return to Setup Utility.

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

Exit Without Saving

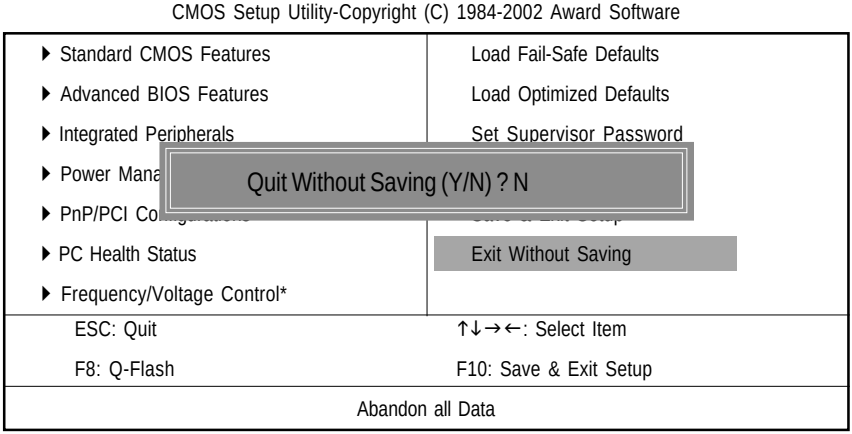

Figure 13: Exit Without Saving

Type "Y" will quit the Setup Utility without saving to RTC CMOS.

Type "N" will return to Setup Utility.

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