

6M810E/6M810ECD
Micro-ATX Form Factor
Main Board
User's Manual
(ver 2.0)

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Chapter 1 Introduction

1-1 Overview

The main board utilizes Intel's i810 chipset integrated with new architects such as integrated graphic, sound, ULTRA DMA-66, USB & AMR is designed to FC-PGA or PPGA Celeron / Coppermine P!!! / VIA Cyrix III Socket-370 CPUs.

Intel's i810 is a cost-effective yet high-performance chipset which has integrated graphics controller (i752) with a 24 Bit 230MHz RAMDAC & software MPEG2 decoder. It supports UMA (unified memory architect) mode up to 64MB with main memory or 4MB 3D texture memory (or called display cache, optional function) that can accelerate its 3D graphics performance. The on board AC-97 CODEC chip provides perfect 3D sound function.

The main board also employs ITE I/O LPC controller with full Plug and Play device and keyboard password setup. It supports 2.88 MB Floppy, Dual 16550 compatible (with 16 bytes FIFO, up to 460K baud rate) serial Port, ECP (Enhanced Capabilities Port), EPP (Enhanced Parallel Port) parallel port, SPP(Standard Parallel Port), Infrared IrDA (HPSIR), and Amplitude Shift Keyed IR. (ASKIR) port and hardware monitor functions too.

The main board contains 2*PCI for highest performance I/O add-on adapter cards. The system board supports three Bus Mastering Slots for high-performance I/O add-on cards. It supports Matrix Independent PCI routing for optimal multiple PCI adapter operations and is PCI2.2 specification compliant. 133MB/s data transfer rate can be compared to 33MB/s. It supports back to back sequential CPU to PCI Memory writes to PCI Burst Write for full PCI throughput. The AMR Slot is designed to fit low cost A(Audio) M(Modem) R(Riser) or MR card.

The main board has 2 dual in-line memory modules (DIMM) which can be installed with PC-100 SDRAM memory(PC-133 with i810E Chipset only). The memory subsystem supports up to 512 MB SDRAM of non-buffered 3.3V using standard 168-pin DIMM sockets.

The main board is strengthened with Power Management Wake up Event such as “Modem ring on” which is the new invention to enable PCs to be turned on via the network or modem function. These are also key benefits in PC operation, asset management, new system setup and power conservation.

In addition to the above hardware features, this main board is Jumperless design which allows user to set CPU frequency through BIOS. With this design, the disadvantages of setting hardware CPU jumpers are improved to a better and easier procedure through BIOS.

In conclusion, the system chipset and design make the main board a high performance, cost-effective, and energy efficient main board which meets a variety of price/performance levels. The main board is an ideal platform for the increasing requirements of today’s and future’s desktop applications.

- CPU Installation

This model is a jumperless main board, there is no selector needed for CPU frequency selection,, Please load optimized Defaults in the CMOS setting,, The main board will automatically detect CPU frequency (66/100/133 MHz)

1-2 Specifications

- **Chipset** : The board can apply either i810DC-100 or i810E chipsets listed below:

Type	810-DC100	810-E
North	GMCH	GMCH-E
South	ICH	ICH
FSB	100MHz	133MHz
Display Cache	Yes, 100MHz	Yes, 100MHz
ATA	ATA66	ATA66
PCI REQ/GNT	6	6

- **CPU** : can take current Socket-370 P!!! 66/100/133MHz (133 MHz with i810E only) , Cyrix III & Celeron CPUs.
- **Memory** : accepts 2 * DIMM in PC-100/PC-133(with i810E only) specification memory
- **VGA** : On chip 3D graphics function with shared 4MB 3D texture memory (or called display cache) (shared 4MB display cache optional)
- **Sound** : Provides sound function with AC-97 3D sound CODEC.
- **Expansion Slot** : 2 x PCI slots, 1 x AMR(used for AMR card or MR card)
- **IDE** : support ULTRA DMA-66 mode
- **PCB Board size** : 17.0cm x 24.5cm, Micro ATX form factor
- **Optional Items** :
 - TV-out (Chrontel CH7007 chip is needed)



Caution : System needs at least PC-100 memory & over 5VSB \geq 1 Ampere current ATX power supply for this main board

● **Other features**

- Modem ring on
- Windows 95/98 power off
- Keyboard wake-up
- Mouse wake-up
- DMI, ACPI supported BIOS

1-3 Limitation

There are some limitations on i810 chipset shown as below:

1. Hardware:

- * Must use PC-100 specification DIMM (PC-133 for i810E only)
- * Must use over 5VSB \geq 1 Ampere current.

2. Software (Driver or BIOS):

- * Windows 95 & 98 don't provide driver (utilities) for i810 chipset. User needs to install driver carefully before using this board

1-4 Notice of Hardware Installation

Before installing the main board hardware, note the following things.

A. Check the package

If any of the below items is missing or damaged, contact the dealer from whom you purchase. Leave this main board in its original package until you are ready to install it. In the package, there are:

- the main board
- manual
- cables
- driver & utility / CD

B. Make sure power is off.

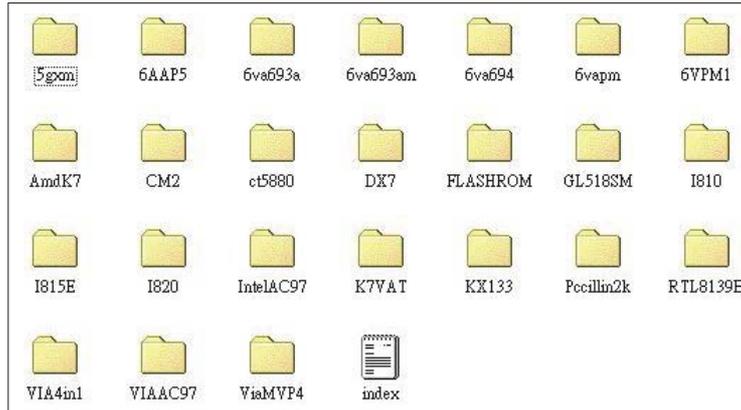
During hardware installation, be sure that there is no power connected in this period.

C. Avoid ESD (Electrical Static Discharge)

While working with this main board, always wear a grounded wristband or ankle strap to avoid ESD (Electrical Static Discharge).

1-5 Notice of CD Driver Installation

This CD contains below drivers. The user must read “Index” (HTML format) before installing required drivers. Index offers all the information on all the drivers.



CD driver is always updated with the latest version, so the actual CD content may be somewhat different from the above picture.

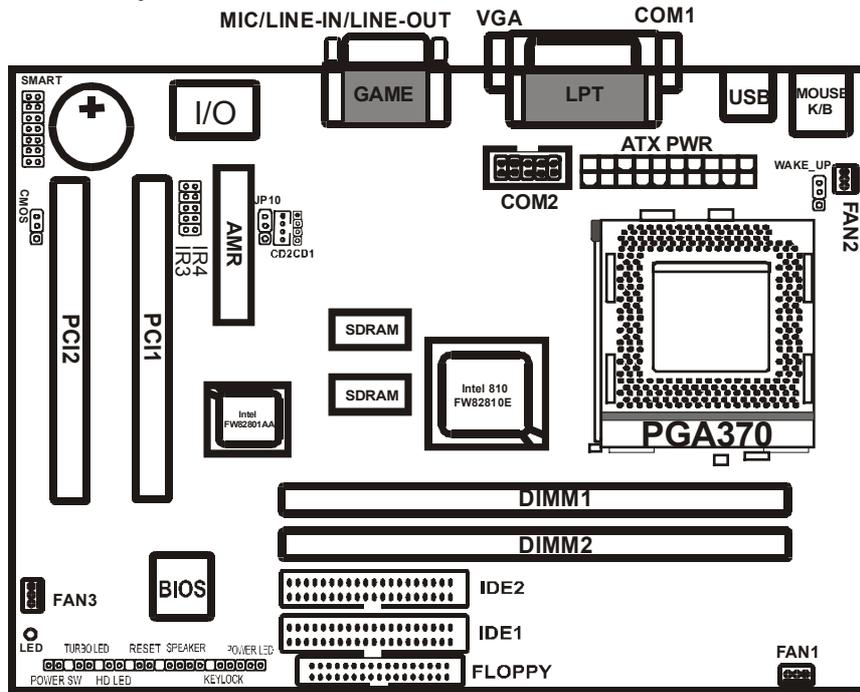
1. **Main boards:** 5gxm, 6AAP5, 6va693a, 6va693am, 6va694, 6vapm, 6VPM1, Amdk7, I810, I815e, I820, K7vat, Kx133, ViaMVP4 (**please choose 6va694 directory for this main board**).
2. **DX7:** Windows DirectX7 driver.
3. **Flashrom:** Bios flashupgrade utility.
4. **Intel INF/VGA/Audio:** Run Intel_INF file under I810 Directory & Bus Master PCI IDE Driver will be automatically detected and installed. Then run VGA file under I810 directory ,the VGA driver will be installed. The last: run Audio driver. Driver of ALC100 & ALC200 is the same. Go to the IntelAC97 directory & run either ALC200 (or ALC100) setup.exe file.



Due to “CIH” virus will damage BIOS completely, user needs to load Pc-cillin anti-virus software when sets up system.

Chapter 2 Installation

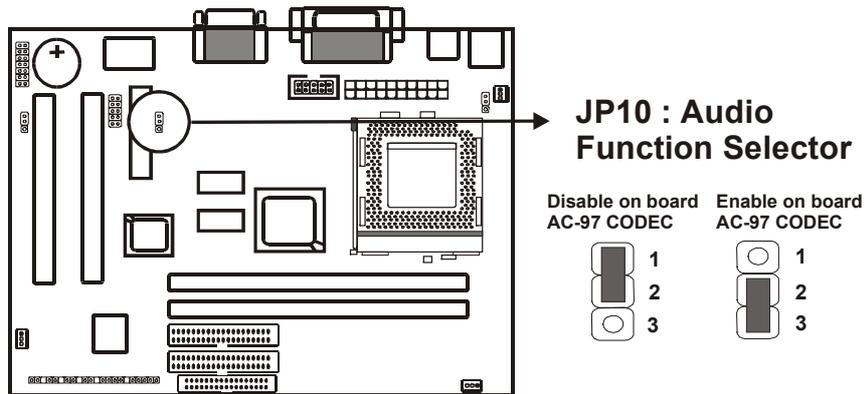
2-1 Layout Reference



2-2 Jumper Setting

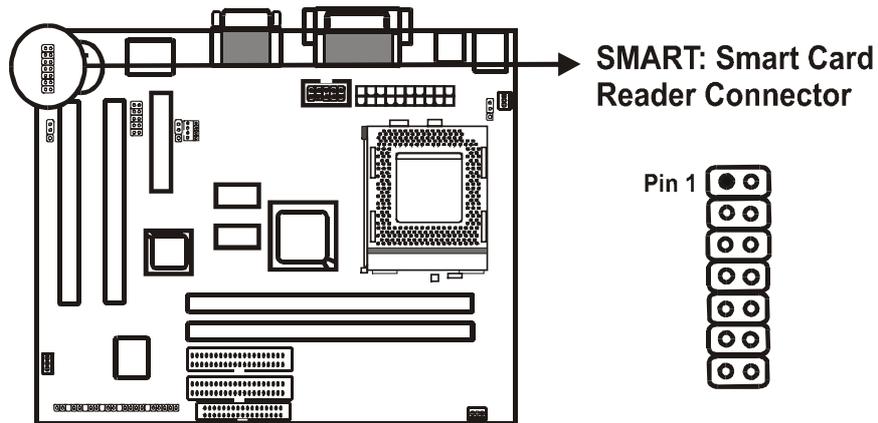
2-2-1 JP10 : Audio Function Selector

JP10 is a 3-pin jumper to enable/disable on board audio function. Set “1-2” to disable on board audio function and use AMR card installed on slot, set “2-3” to enable on board audio function and use MR card installed on slot.



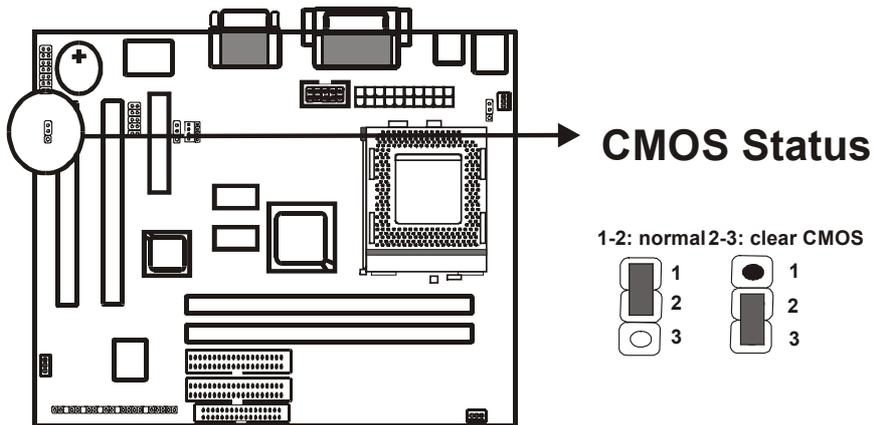
2-2-2 SMART: Smart Card Reader Connector(Optional)

The Smart Card is capable of providing secured storage facilities for sensitive personal information (such as Private keys, Account numbers, Passwords, Medical information, etc...). The Smart Card Reader can be used for a broad range of application in GSM, ID, pay TV, banking, ... and so forth.



2-2-3 CMOS Status

Please clear CMOS if password is forgotten. Below is the details to clear CMOS.



Procedure to clear CMOS:

- Step 1: Shut down the system and disconnect the power supply from AC power.
- Step 2: Pull out the power supply cable from the power connector.
- Step 3: Short the CMOS jumper by putting jumper cap on Pin 2-3 for a few seconds.
- Step 4: Return the cap to pin 1-2 at normal setup.
- Step 5: Link the power cable to the connector & connect AC power to power supply.
- Step 6: Turn on system power.

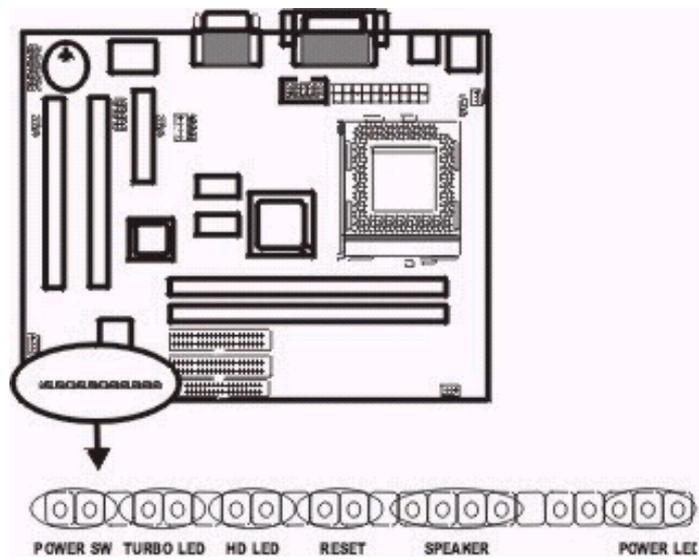
If you'd like to set password, press "Del" Key during system boot up to enter CMOS setup and establish a new password.

2-3 Connectors

There are many connectors on this main board. Refer to the following pages for details.

2-3-1 Front Panel

Front panel has connectors such as “POWER-LED,” “SPEAKER,” “RESET,” “HD-LED,” “TB-LED,” ”POWER-SW.” Please refer to the following further information.



POWER-LED is a 3-pin connector. It is used to connect to the LED on the case front panel. The LED shows the status of the power.

SPEAKER is a 4-pin keyed Berg strip. It is used to connect the case speaker to the main board for sound effect.

RESET is a 2-pin keyed Berg strip, connected to the push button reset switch on the case's front panel. Shorting both pin 1 & pin 2 can reset the system, which is similar to the power off and then on again.

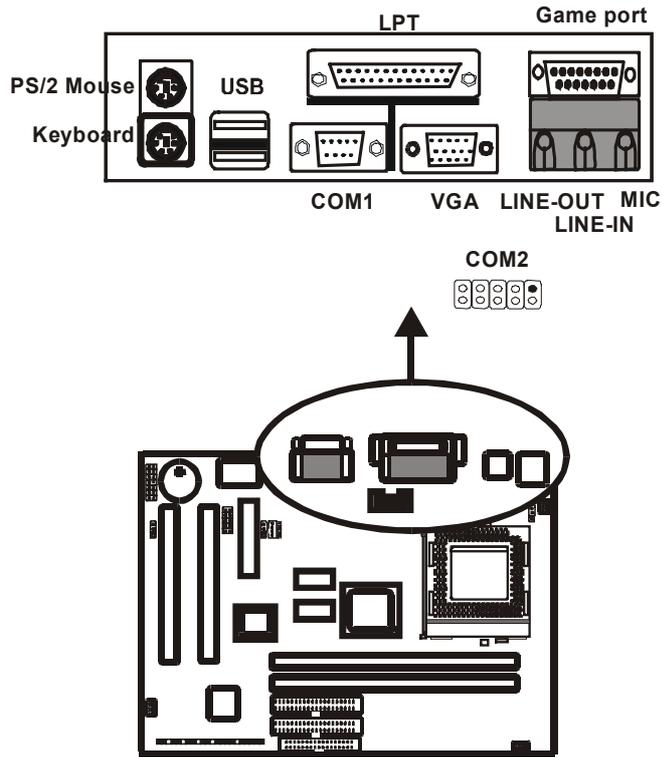
HD-LED (Hard Disk activity LED connector) is a 2-pin keyed Berg strip. It is used to connect to front panel Hard Disk LED.

TURBO-LED is a 2-pin Berg strip on case front panel indicates the current speed status of system.

POWER-SW. is a 2-pin connector which controls power "on" and "off".

2-3-2 Back Panel Connectors

Back Panel Connectors are GAME Port, MIC, LINE-IN, LINE-OUT, COM1/COM2, LPT, USB, PS/2 keyboard, and PS/2 mouse on case back panel. Refer to below details.



COM1 & COM2

The onboard serial port 1 and port 2 are the 9-pin D-subminiature male connector COM1 and COM2. COM1 and COM2 can be disabled in BIOS setup. Please refer to Chapter 3 “Integrated Peripherals” for more information.

KBD/PS2 MOUSE

The onboard PS/2 keyboard and mouse connectors are 6-pin Mini-Din connectors.

LPT

The onboard parallel port is a 25-pin female connector. It supports standard printer port, Enhanced Parallel Port (EPP), Extended Capabilities Port (ECP), Standard Parallel Port (SPP).

USB: USB (Universal Serial Bus) Connector

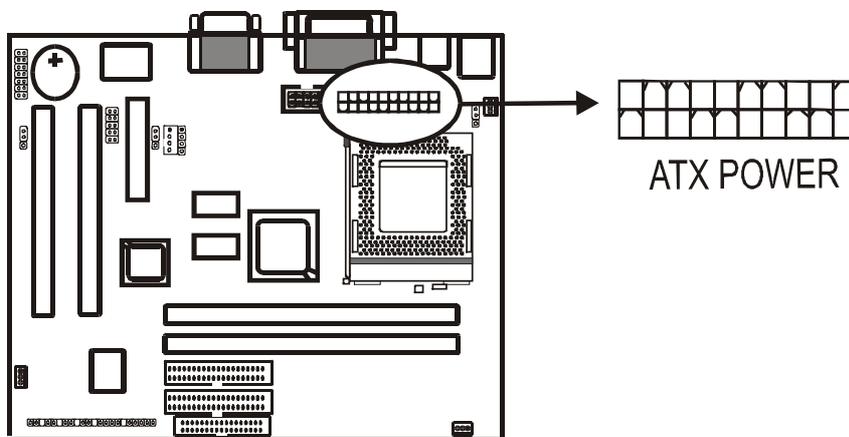
Universal Serial Bus connector, marked as “USB,” is used to connect USB devices. There are 2 USB connectors on this main board.

Midi/Game Port & External Audio Connectors

Midi/Game port has 15 pins connecting to the game joystick. External Audio connectors are “LINE-OUT, LINE-IN, MIC-IN” for audio functions.

2-3-3 ATX Power Supply Connector

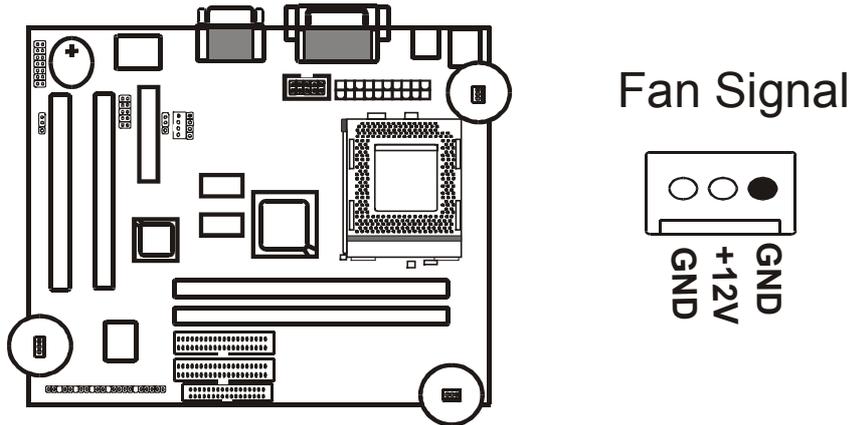
ATX power connector has 20 pins, which is designed for ATX case especially. The ATX power supply supports the function of the “**Soft Power On Momentary switch**” which connects on the front panel switch to the 2-pin **SOFT-PWR** on the system board. While the power switch on the back of ATX power is turned on, the full power will not go into the system board until the front panel switch is momentarily pressed. Push the switch again to turn off the power to the system board.



To support i810 chipset, we suggest that Pin 17 signal 5VSB on ATX Power supply should be able to offer at least 750 mA driving ability.

2-3-4 Fan Connectors

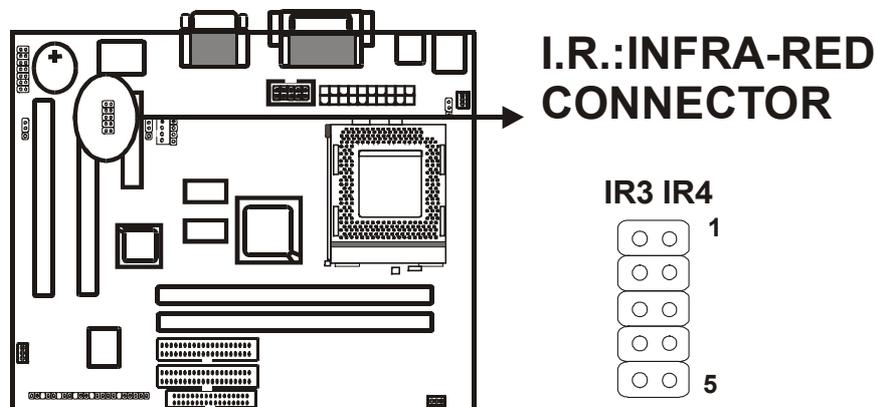
There are 3 fan connectors on this system board, and it is marked as “FAN”. Each fan connector has three pins.



2-3-5 I.R. : IrDA Connector

IR connector supports wireless infrared module. With this module and application software like Laplink, or Win95 Direct Cable Connection, user can transfer data to or from laptops, notebooks, PDA and printers. This connector supports **HPSIR**, **ASKIR**, and **Fast IR**.

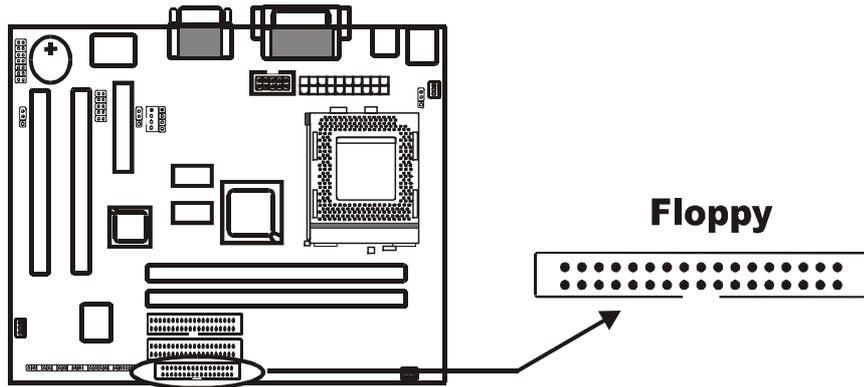
Attach Infrared module to IR connector. Be sure to put in the right orientation during attachment.



	IR3(normal IR)	IR4(consumer IR)
1	VCC	VCC
2	NC	NC
3	IRRX	CIRRX
4	GND	GND
5	IRTX	CIRTX

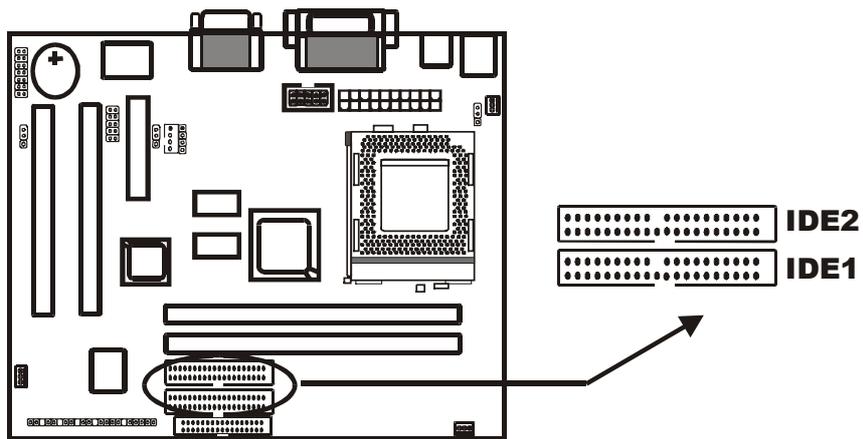
2-3-6 Floppy Disk Connector

Floppy Disk connector has 34 pins and is used to attach the floppy drive cable.



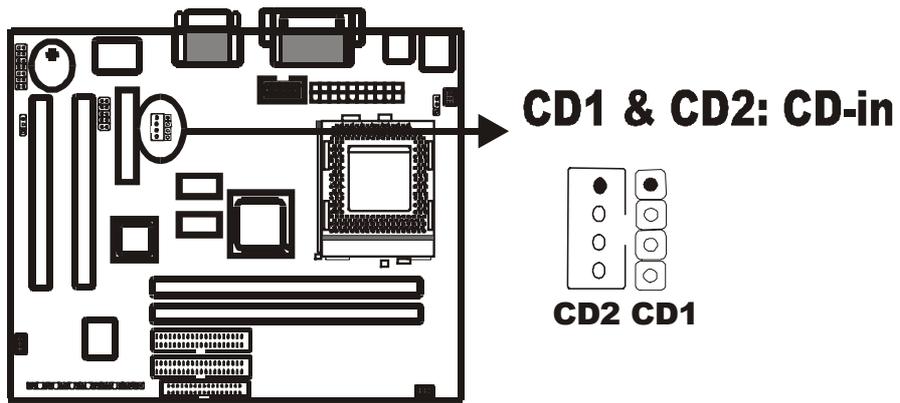
2-3-7 IDE1 & IDE2

IDE1 and IDE2 are 39 – pin IDE connectors (Ultra 66). **IDE1** is primary channel, and **IDE2** is secondary channel. Each channel supports 2 IDE devices, and 4 devices in total for this main board.



2-3-8 CD1& CD2: CD-in

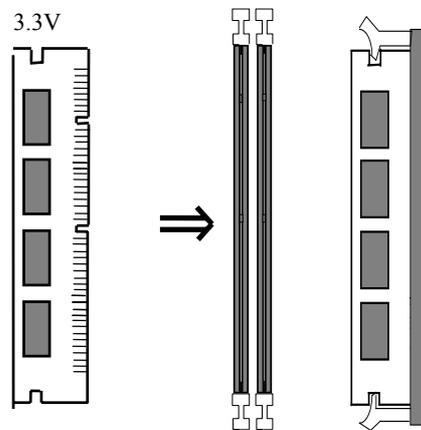
CD1 & CD2 is a CD ROM external audio input signal to line-out (speaker) of the main board.



2-4 DIMM Installation

Please make sure DIMM is 3.3V DIMM. Either DIMM1 or DIMM2 supports 8 MB, 16 MB, 32 MB, 64 MB, and 128MB. Maximum memory for **SDRAM is up to 512 MB**. The user may insert DIMM modules in either DIMM1, or DIMM2.

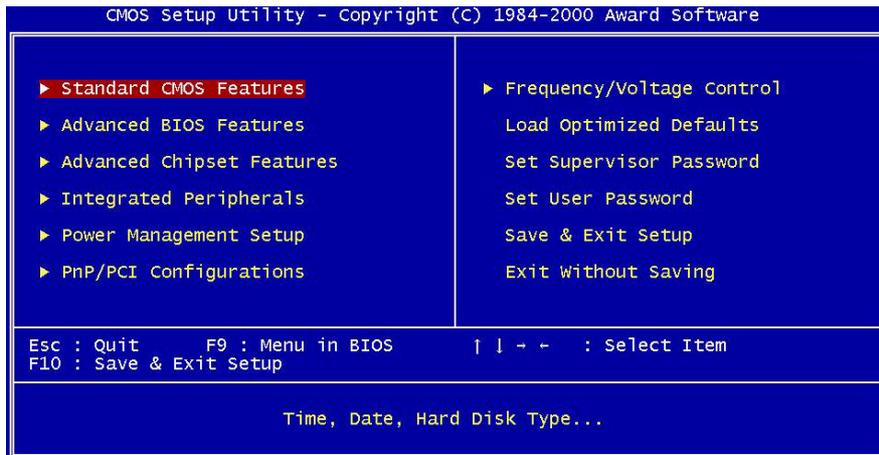
Insert the module as shown. Due to different number of pins on either side of the breaks, the module will only fit in the orientation as shown. SDRAM DIMM modules have different pin contacts on each side and therefore have a higher pin density.



SDRAM memory supports PC-100 DIMM or above.

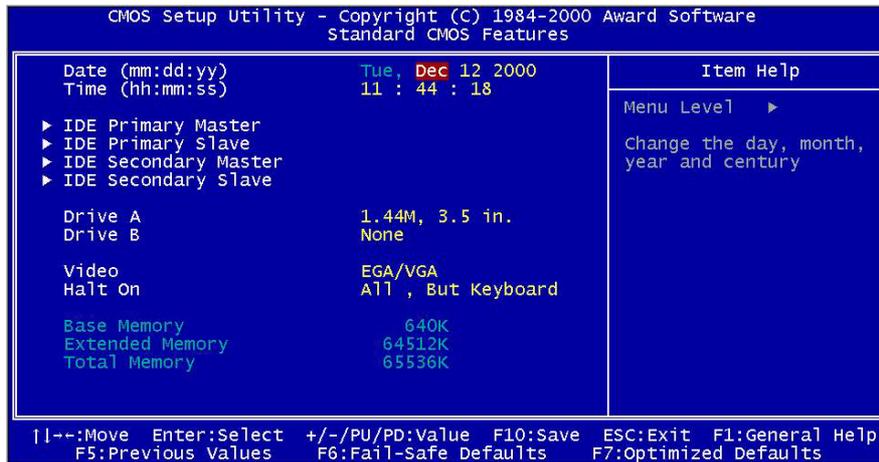
Chapter 3 BIOS Setup

3-1 Award® BIOS CMOS Setup



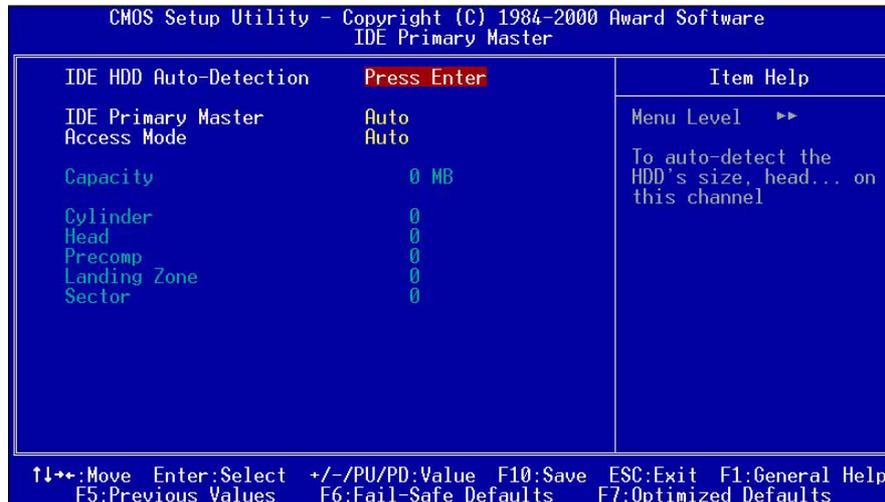
The menu displays all the major selection items and allows user to select any of the shown item. The selection is made by moving cursor (press any direction key) to the item and press <Enter> key. An on-line help message is displayed at the bottom of the screen as cursor is moves to various items which provides user better understanding of each function. When a selection is made, the menu of the selected item will appear. So the user can modify associated configuration parameters.

3-1-1 Standard CMOS Features



The "Standard CMOS Features" allows user to configure system setting such as **current date and time**, **type of hard disk drive** installed in the system, **floppy drive type**, and the type of **display monitor**. Memory size is auto detected by the BIOS and displayed for your reference. When a field is highlighted (direction keys to move cursor and <Enter> key to select). The entries in the field will be changed by pressing <PageDown> or <PageUp> key or user can enter new data directly from the keyboard.

Hard Disk Configurations



- 1. IDE HDD Auto-Detection** : press this item to Auto Detect the HDD type.
- 2. IDE Primary Master** : select "AUTO" to detect the mode type automatically. Select "NORMAL" users have to redefine the following 4-8 items according to HDD. "NONE" means this item disabled.
- 3. Access Mode** : select "AUTO" to detect the mode type automatically. If your hard disk supports the **LBA** mode, select "**LBA**" or "**LARGE**" or "**CHS**". However, if your hard disk cylinder is more than 1024 and does not support the LBA function, you have to set at "**LARGE**." Select "**NORMAL**" if your hard disk supporting cylinder is below 1024.

-
4. *Cylinder* : the cylinder number of the hard disk.
 5. *Head* : the read/write head number of hard disk. The range is from "1" to "16".
 6. *Precomp* : the cylinder number at which the disk drive changes the write timing.
 7. *Landing Zone*: the cylinder number that the disk drive heads (read/write) are seated when the disk drive is parked.
 8. *Sector* : the sector number of each track defined on the hard disk. The range is from "1" to "64".



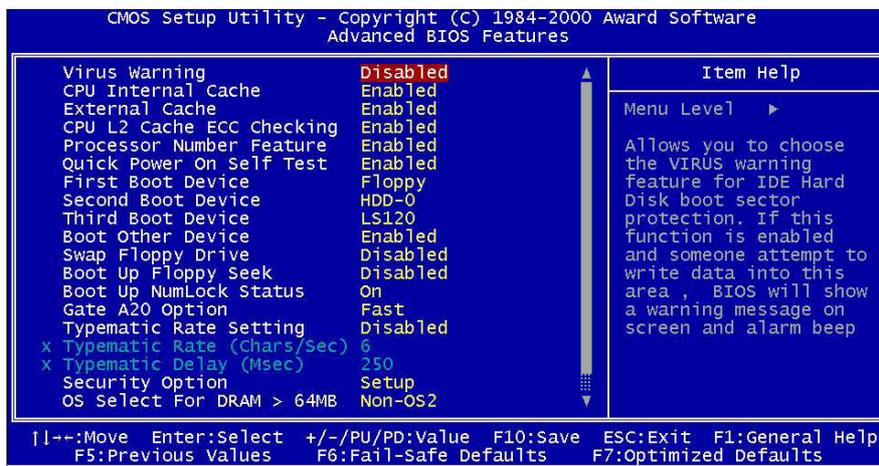
Note1: if hard disk primary master/slave and secondary master/slave were set to "**auto**", the hard disk size and model will be auto detected on display during POST.



Note2: "**halt on**" is to determine when to halt the system by the BIOS if error occurred during POST.

3-1-2 Advanced BIOS Features

Menu below shows all of the manufacturer's default values of this main board. Move the cursor by pressing <PageDown>/- or <PageUp>/+ key to modify the parameters, press [F1] key to display help message of the selected item. This setup program also provide 2 convenient ways to load the default parameter data from BIOS [F6] and [F7] area if shown data is corrupted. This provides the system a capability to recover from any possible error.



VIRUS WARNING

:Enabled

:Disabled (default)

CPU INTERNAL CACHE

:Enabled : enable L1 cache(default)

:Disabled: disable L1 cache

EXTERNAL CACHE

:Enabled: enable L2 cache (default)

:Disabled: disable L2 cache

CPU L2 CACHE ECC CHECKING

:Enabled enable L2 cache ECC checking (default):

:Disabled: disable L2 cache ECC checking

PROCESSOR NUMBER FEATURE

:Enabled(default)

: Disabled

QUICK POWER ON SELF TEST

This category speeds up power on self test.

:Enabled : BIOS will shorten or skip some check items. (default)

:Disabled: normal speed

FIRST BOOT DEVICE

This category determines which drive the system searches first. System will search in turn for floppy disk drive; then hard disk drive, and finally Floppy drive. Default value is "FLOPPY". Options are as below:

FLOPPY; LS120; HDD-0; SCSI; CDROM; HDD-1; HDD-2; HDD-3; ZIP100; LAN; Disabled

SECOND BOOT DEVICE

This category determines which drive the system searches first. System will search in turn for floppy disk drive; then hard disk drive, and finally Floppy drive. Default value is “**HDD-0**”. Options are as below:

FLOPPY; LS120; HDD-0; SCSI; CDROM; HDD-1; HDD-2; HDD-3; ZIP100; LAN; Disabled

THIRD BOOT DEVICE

This category determines which drive the system searches first. System will search in turn for floppy disk drive; then hard disk drive, and finally Floppy drive. Default value is “**LS120**”. Options are as below:

FLOPPY; LS120; HDD-0; SCSI; CDROM; HDD-1; HDD-2; HDD-3; ZIP100; LAN; Disable

BOOT OTHER DEVICE

:Enabled(default)

:Disabled

SWAP FLOPPY DRIVE

:Enabled: floppy A&B will be swapped.

:Disabled(default): floppy A&B will not be swapped.

BOOT UP FLOPPY SEEK

BIOS will determine if the floppy disk drive is 40 or 80 tracks. 360k type is 40 tracks while 720K/1.2M and 1.44M are all 80 tracks. Default value is enabled.

:Enabled

:Disabled (default)

BOOT UP NUMLOCK STATUS

:On (default)

:Off

GATE A20 OPTION

:Normal

:Fast (default)

TYPOMATIC RATE SETTING

This determines the typematic rate.

:Enabled: enable typematic rate and typematic delay programming.

:Disabled (default) : disable typematic rate and typematic delay programming.

The system BIOS will use default value of this 2 items and the default is controlled by keyboard.

TYPOMATIC RATE(CHARS/SEC)

6 : 6 Characters Per Second (default)

8 : 8 Characters Per Second

10 :10 Characters Per Second

12 : 12 Characters Per Second

15 : 15 Characters Per Second

20 : 20 Characters Per Second

24 : 24 Characters Per Second

30 : 30 Characters Per Second

TYPOMATIC DELAY (MSEC)

This is the interval between the first and second character displayed.

250 : 250 msec (default)

500 : 500 msec

750 : 750 msec

1000 :1000 msec

SECURITY OPTION

Item	Function	Note
Setup (default)	Security protection in CMOS setup menu	After setting password in BIOS CMOS “Supervisor Password” or User Password, it protects BIOS CMOS setup.
System	Security protection in system boot-up & BIOS setup	This function secures the system under system boot-up and BIOS setup after setting password.

OS SELECT FOR DRAM> 64MB

This option is especially set for OS2 operating system. Set “**OS2**” for RAM memory over 64MB and set “**Non-OS2**” for other operating systems like Windows® 95/98 or NT.

:**Non-OS2** (default)

:**OS2**

HDD S.M.A.R.T CAPABILITY

:**Enabled**

:**Disabled** (default)

REPORT NO FDD FOR WIN 95

:**No** (default)

:**Yes**

3-1-3 Advanced Chipset Features



SDRAM CAS LATENCY TIME

: 2
: 3 (default)

SDRAM CYCLE TIME TRAS/TRC

: 5/7
: 6/8 (default)

SDRAM RAS- TO- CAS DELAY

This controls the DRAM page miss and row miss leadoff timing.

: 2
: 3 (default)

SDRAM RAS PRECHARGE TIME

SDRAM precharge time by RAS.

: 2
: 3 (default)

SYSTEM BIOS CACHEABLE

define whether system BIOS area cacheable or not.

: Enabled (default)
: Disabled

VIDEO BIOS CACHEABLE: to define whether video BIOS area cacheable or not.

: Enabled (default)
: Disabled

MEMORY HOLE AT 15M-16M: this field enables a memory hole in main memory space. CPU cycles matching an enabled hold are passed on to PCI note that a selection can not be changed while the L2 cache is enabled.

: Enabled
: Disabled (default)

CPU LATENCY TIMER:

:Enabled
:Disabled (default)

DELAY TRANSACTION

:Enabled (default)
:Disabled

ON-CHIP VIDEO WINDOW SIZE

:64M(default)
:Disabled

LOCAL MEMORY FREQUENCY

:100MHz(default)
:133MHz

ONBOARD DISPLAY CACHE SETTING

CAS# Latency
:3(default)
:2

PAGING MODE CONTROL

:Close
:Open (default)

RAS-TO-CAS OVERRIDE

:by CAS # LT(default)
:Override(2)

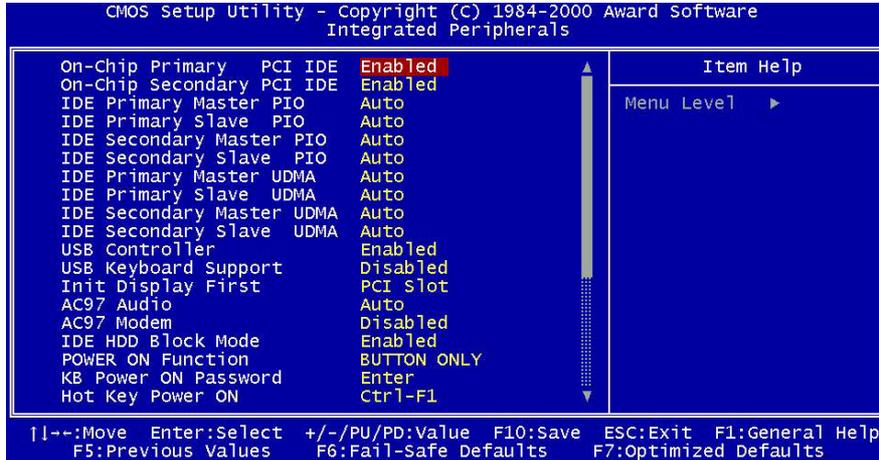
RAS# TIMING

:Slow
:Fast (default)

RAS# PRECHARGE TIMING

:Slow
:Fast (default)

3-1-4 Integrated Peripherals



ONCHIP PRIMARY PCI IDE

:Enabled(default)

:Disabled

ONCHIP SECONDARY PCI IDE

:Enabled(default)

:Disabled

IDE PRIMARY MASTER PIO

This feature detects your primary master hard disk device.

:Auto (default)

:Mode 0,1,2,3,4

IDE PRIMARY SLAVE PIO

This feature detects your primary slave hard disk device.

:Auto (default)

:Mode 0,1,2,3,4

IDE SECONDARY MASTER PIO

This feature detects your secondary master hard disk device.

:Auto (default)

:Mode 0,1,2,3,4

IDE SECONDARY SLAVE PIO

This feature detects your secondary slave hard disk device.

:Auto (default)

:Mode 0,1,2,3,4

IDE PRIMARY MASTER UDMA

:Auto(default)

:Disabled

IDE PRIMARY SLAVE UDMA

:Auto(default)

:Disabled

IDE SECONDARY MASTER UDMA

:Auto(default)

:Disabled

IDE SECONDARY SLAVE UDMA

:Auto(default)

:Disabled

USB CONTROLLER

:Enabled(default)

:Disabled

USB KEYBOARD SUPPORT

:Enabled

:Disabled(default)

INIT DISPLAY FIRST

:PCI Slot (default)

:Onboard

AC97 AUDIO

:Auto(default)

:Disabled

AC97 MODEM

:Auto
:Disabled(default)

IDE HDD BLOCK MODE

:Enabled(default)
:Disabled

POWER ON FUNCTION

:Any Key
:Button Only(default)
:Keyboard 98
:Password
:Hot Key
:Mouse Move
:Mouse Click

KB POWER ON PASSWORD

:enter (default)

HOT KEY POWER ON

:Ctrl-F1 (default) ~ **Ctrl-F12**

ONBOARD FDC CONTROLLER

Select Enabled if your system has a floppy disk controller(FDC) installed on the system board and if you wish to use it.

:Enabled (default)
:Disabled

ONBOARD SERIAL PORT 1

Select an address and corresponding interrupt for the first serial port.

:Auto (default)
:2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, 3F8/IRQ4, Disabled

ONBOARD SERIAL PORT 2

Select an address and corresponding interrupt for the second serial port.

:Auto (default)
:2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, 3F8/IRQ4, Disabled

UART MODE SELECT

:Normal (default)
:IrDA

:ASKIR
:SCR

UR2 DUPLEX MODE

Select the value required by the IR device connected to the IR port. Full-duplex mode permits simultaneous two-direction transmission. Half-duplex mode permits transmission in one direction only at a time.

:Full
:Half (default)

ONBOARD PARALLEL PORT

:378/IRQ7 (default)
:278/IRQ5
:3BC/IRQ7
:Disabled

PARALLEL PORT MODE

:SPP (default)
:EPP
:ECP
:ECP + EPP

ECP MODE USE DMA

Select a DMA channel for the parallel port for using during ECP mode.

:3 (default)
:1

PWRON AFTER PWR-FAIL

:Off (default)
:On, Former-Sts

GAME PORT ADDRESS

:201 (default)
:209, Disabled

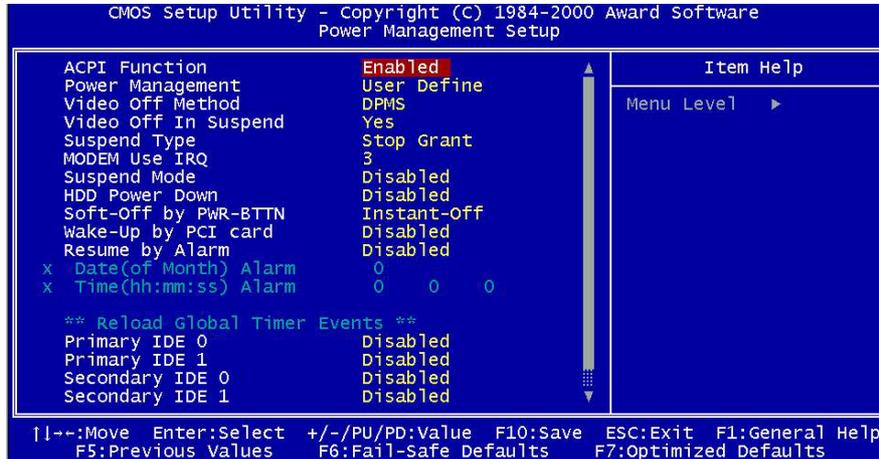
MIDI PORT ADDRESS

:300, 330
:Disabled (default)

MIDI PORT IRQ

:5
:10 (default)

3-1-5 Power Management Setup



ACPI FUNCTION

:Enabled(default)

:Disabled

POWER MANAGEMENT

:User Define(default)--users can configure their own power management

:Min Saving

:Max Saving

VIDEO OFF METHOD

:DPMS(default)

:Blank Screen

:V/H Sync+Blank

VIDEO OFF IN SUSPEND

:Yes (default)

:No

SUSPEND TYPE

:Stop Grant (default)

:PwrOn Suspend

MODEM USE IRQ

:3 (default)

:4, 5, 7, 9, 10, 11, NA

SUSPEND MODE

:Disabled(default), 1min --- 2 min, 4 min, 8 min, 12 min, 20 min, 30 min, 40 min, 1 Hour

HDD POWER DOWN

:Disabled(default), 1 min --- 15 min

SOFT-OFF BY PWR-BTTN

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has “hung”.

:Instant-Off (default)

:Delay 4 Sec.

WAKE-UP BY PCI CARD

:Enabled

:Disabled (default)

RESUME BY ALARM

When Enabled, you can set the date and time on RTC (real-time clock) alarm awaken a system which has been powered down.

:Enabled

:Disabled (default)

DATE(OF MONTH) ALARM/TIME(HH:MM:SS)

You can set the date (of month) and timer (hh:mm:ss), any event occurring will awaken a system which has been powered down.

RELOAD GLOBAL TIMER EVENTS

Primary IDE0
:Enabled
:Disabled (default)

Primary IDE1
:Enabled
:Disabled (default)

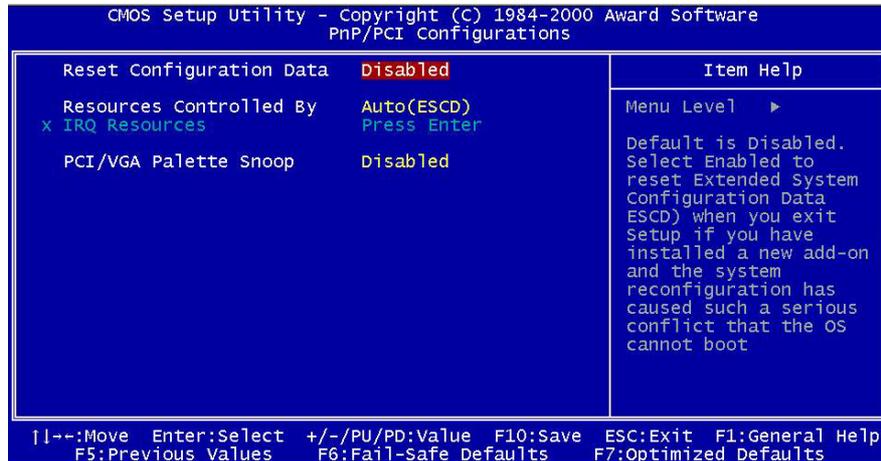
Secondary IDE0
:Enabled
:Disabled (default)

Secondary IDE1
:Enabled
:Disabled (default)

FDD, COM, LPT Port
:Enabled
:Disabled (default)

PCI PIRQ (A-D)#
:Enabled
:Disabled (default)

3-1-6 PNP / PCI Configuration Setup



RESET CONFIGURATION DATA

:Disabled(default)

:Enabled--- to reset “**Extended System Configuration Data(ESCD)**” when you exit setup if you have installed a new add-on card and the system reconfiguration has caused such a serious conflict that the operating system can not boot up.

RESOURCES CONTROLLED BY

:Manual

The table will show the below items: **IRQ-3 ~ IRQ15 assigned to PCI DEVICES**. The user can adjust the shown items as required.

:Auto (ESCD)

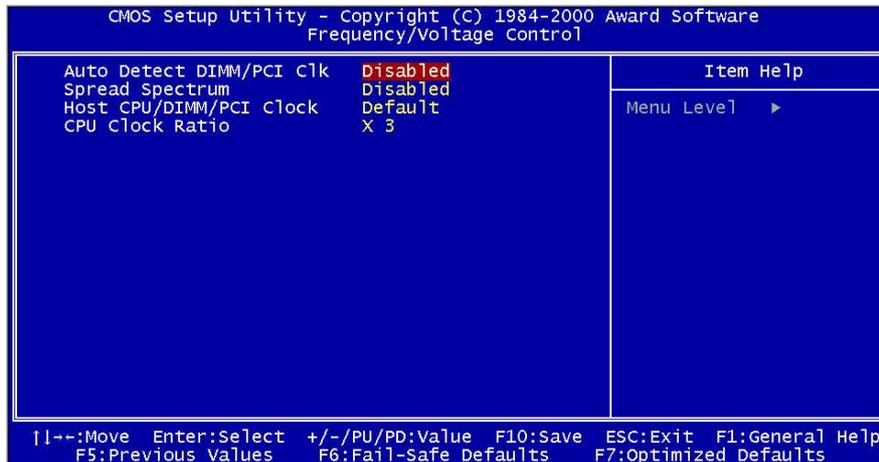
The table will not show the above items, and the system will automatically assign the above setup.

PCI/VGA PALETTE SNOOP

:Disabled (default)

:Enabled

3-1-7 Frequency/Voltage Control



AUTO DETECT DIMM/PCI CLK

: Enabled
: Disabled (default)

SPREAD SPECTRUM

: Enabled
: Disabled (default)

CPU HOST/PCI CLOCK

: Default
: 66/100/133MHz; 68/102/34MHz; 75/112/37MHz; 100/100/33MHz;
103/103/34 MHz; 124/124/41 MHz ; 133/133/44 MHz ;
140/140/46MHz; 150/150/50MHz; 133/100/33MHz; 140/105/35MHz;
150/112/37 MHz ;

CPU RATIO

: x 3 (Default)
: x 3.5 ; x 4 ; x 4.5 ; x 5 ; x 5.5 ; x 6 ; x 6.5 ; x 7 ; x 7.5 ; x 8



This selection is reserved for manufacturers to pass CE test only not available for users.

3-1-8 Supervisor/User Password

The "Supervisor/User Password setting" utility sets the security protection. There are two kinds of password functions in the setup menu : one is "Supervisor Password," and the other is "User Password." Their difference is:

Supervisor Password: this function allows you the right to change the options of setup menu.

User Password: this function only allows you to enter the setup menu but not to change the options of the setup menu except "USER PASSWORD," "SAVE & EXIT SETUP," and "EXIT WITHOUT SAVING."

1. How to set "Supervisor Password" & "User Password"

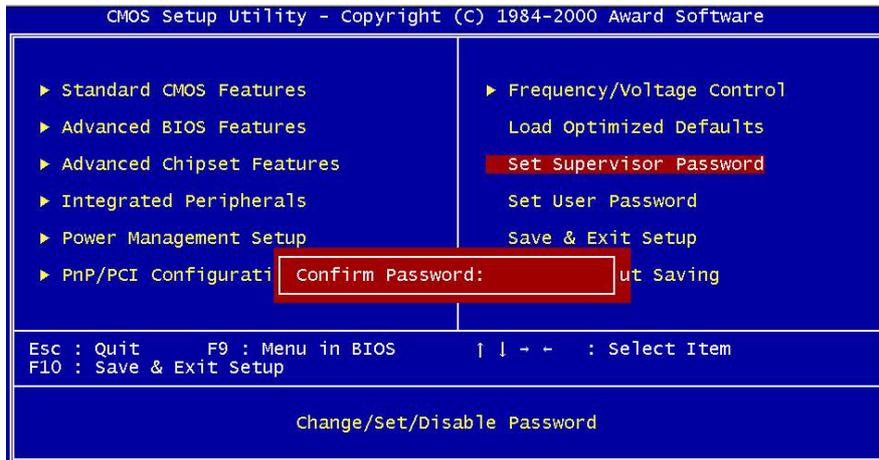
The setup of "Supervisor Password" and "User Password" has the same steps.

Step 1: **Enter Password** --Press <Enter> after appointing the password.



Step 2: Confirm Password

Type the password again and press <Enter>



If you forget password, please clear CMOS.
(refer to jumper RTC1)

Step 3: Set “Security Option” in “BIOS Features Setup”

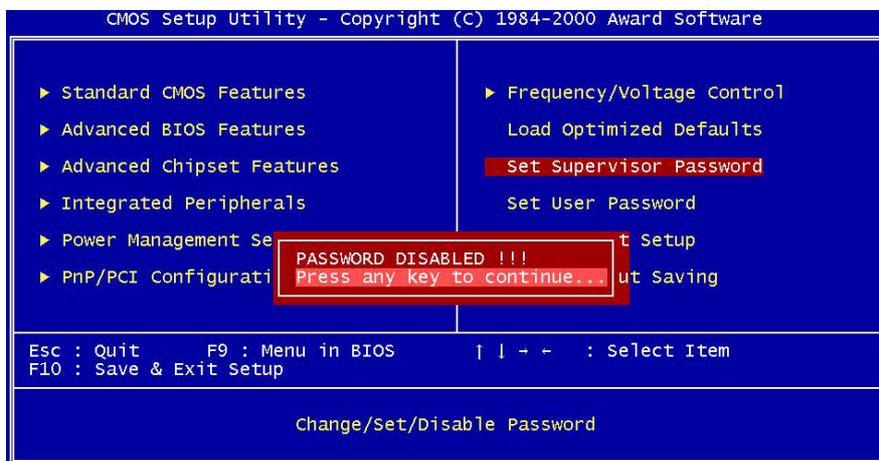
After setting password, enter “Security Option” in “BIOS Features Setup.” There are 2 options “Setup” & “System.” “Setup” will only secure CMOS setup through password. “System” is to secure PC sytem and password is required during system boot-up in addition to CMOS setup.

2. How to Disable “Supervisor Password” & “User Password”

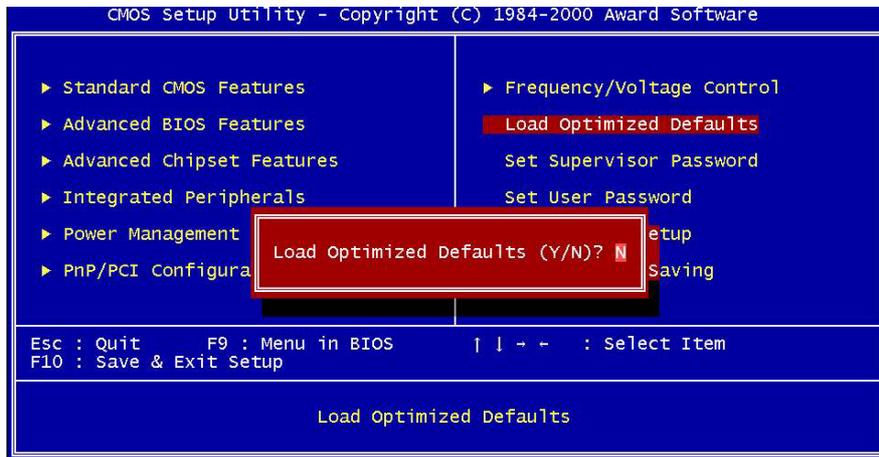
Step 1: Go to CMOS Setup Menu (need to key in password first)

Step 2: Enter “Supervisor Password” or “User Password”

When it shows “Enter Password”, press the <Enter> key instead of entering a new password when "ENTER PASSWORD" appears. It will inform “PASSWORD DISABLED PRESS ANY KEY TO CONTINUE.” Then, press any key as instructed to disable the password.

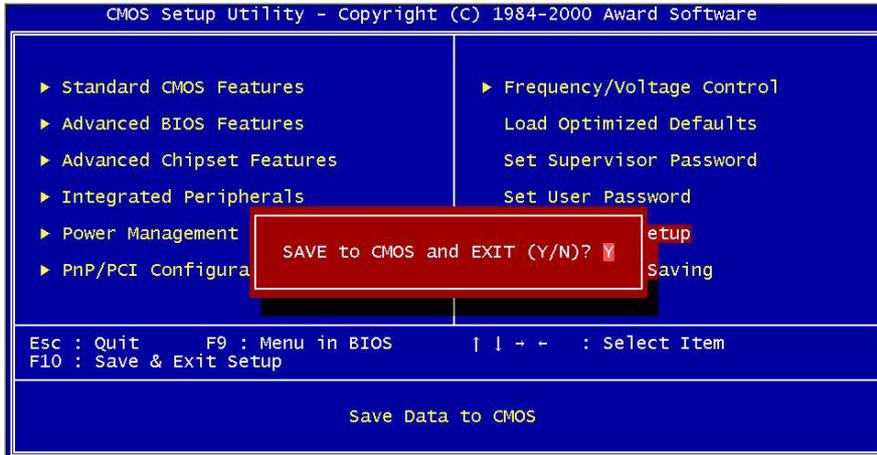


3-1-9 Load Optimized Defaults



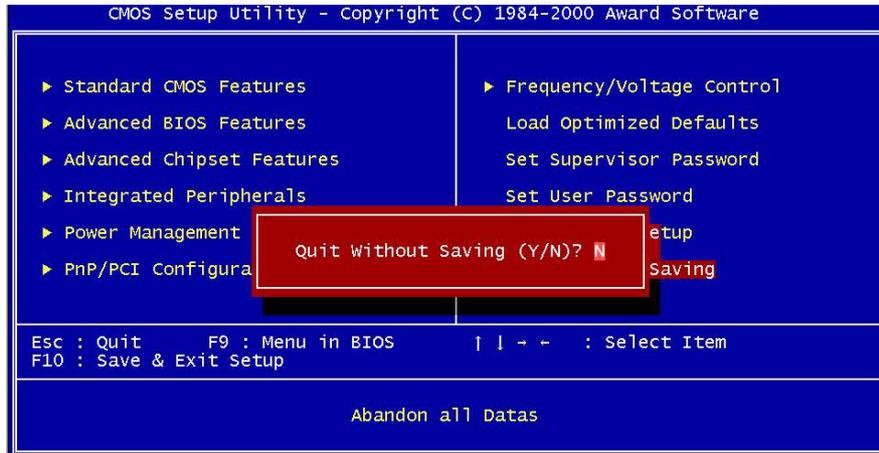
"Load Optimized Defaults" loads optimized settings which are stored in the BIOS ROM. The auto-configured settings only affect "BIOS Features Setup" and "Chipset Features Setup" screens. There is no effect on the standard CMOS setup. To use this feature, highlight it on the main screen and press the <Enter> key. A line will appear on screen asking if you want to load the setup default values. Press the <Y> key and then press the <Enter> key. The setup defaults will then load. If not, enter <N>.

3-1-10 Save & Exit Setup



The "Save & Exit Setup" option will bring you back to boot up procedure with all the changes you have made which are recorded in the CMOS RAM.

3-1-11Quit Without Saving



The **"Quit Without Saving"** option will bring you back to normal boot up procedure without saving any data into CMOS RAM. All of the old data in the CMOS will not be changed.

Chapter 4 Appendix

4-1 Memory Map

Address range	Size	Description
00000-7FFFF	512K	Conventional memory
80000-9FBFF	127K	Extended conventional memory
9FC00-9FFFF	1K	Extended BIOS data area if PS/2 mouse is installed
A0000-C7FFF	160K	Available for hi DOS memory
C8000-DFFFF	96K	Available for hi DOS memory and adapter ROMs
E0000-EEFFF	60K	Available for UMB
EF000-EFFFF	4K	Video service routine for monochrome & CGA adapter
F0000-F7FFF	32K	BIOS CMOS setup utility
F8000-FCFFF	20K	BIOS runtime service routine (2)
FD000-FDFFF	4K	Plug and play escd data area
FE000-FFFFF	8K	BIOS runtime service routine (1)

4-2 I/O Map

000-01F	DMA controller (master)
020-021	Interrupt controller (master)
022-023	Chipset control registers. I/O ports
040-05F	Timer control registers
060-06F	Keyboard interface controller (8042)
070-07F	RTC ports & CMOS I/O ports
080-09F	DMA register
0A0-0BF	Interrupt controller (slave)
0C0-0DF	DMA controller (slave)
0F0-0FF	Math coprocessor
1F0-1FB	Hard disk controller
278-27F	Parallel port 2
2B0-2DF	Graphics adapter controller
2F8-2FF	Serial port 2
360-36F	Network ports
378-37F	Parallel port 1
3B0-3BF	Monochrome & parallel port adapter
3C0-3CF	EGA adapter
3D0-3DF	CGA adapter
3F0-3F7	Floppy disk controller
3F8-3FF	Serial port-1

4-3 Time & DMA Channels Map

Time map:

- Timer channel 0 system timer interrupt
- Timer channel 1 DRAM refresh request
- Timer channel 2 speaker tone generator

Dma channels:

- DMA channel 0 available
- DMA channel 1 onboard ECP (option)
- DMA channel 2 floppy disk (ITE chip)
- DMA channel 3 onboard ECP (default)
- DMA channel 4 cascade for DMA controller 1
- DMA channel 5 available
- DMA channel 6 available
- DMA channel 7 available

4-4 Interrupt Map

A. NMI: non-maskable interrupt

B. IRQ(H/W):

- 0 system timer interrupt from timer 0
- 1. keyboard output buffer full
- 2. cascade for IRQ 8-15
- 3. serial port2
- 4. serial port1
- 5. parallel port 2
- 6. floppy disk (ITE chip)
- 7. parallel port 1
- 8. RTC clock
- 9. available
- 10. available
- 11. available
- 12. PS/2 mouse
- 13. math coprocessor
- 14. onboard hard disk (IDE1) channel
- 15. onboard hard disk (IDE2) channel

4-5 RTC & CMOS RAM Map

00	Seconds
01	Seconds Alarm
02	Minutes
03	Minutes Alarm
04	Hours
05	Hours Alarm
06	Day of Week
07	Day of Month
08	Month
09	Year
0A	Status Register A
0B	Status Register B
0C	Status Register C
0D	Status Register D
0E	Diagnostic Status Byte
0F	Shutdown Byte
10	Floppy Disk Type Drive Type Byte
12	Hard Disk Type Byte
13	Reserved
14	Equipment Type
15	Base Memory Low Byte
16	Base Memory High Byte
17	Extension Memory Low Byte
18	Extension Memory High Byte
19-2D	
2E-2F	
30	Reserved for Extension Memory Low Byte
31	Reserved for Extension Memory High Byte
33	Information Flag
34-3F	Reserved
40-7F	Reserved for Chipset Setting Data

4-6 ISA I/O Address Map

I/O Address (HEX)	I/O device
000 - 01F	DMA Controller 1, 8237A-5
020 - 03F	Interrupt Controller 1, 8259A
040 - 05F	System Timer, 8254-2
060 - 06F	8042 Keyboard Controller
070 - 07F	real-time Clock/CMOS and NMI Mask
080 - 09F	DMA Page Register, 74LS612
0A0 - 0BF	Interrupt Controller 2, 8259A
0C0 - 0DF	DMA Controller 2, 8237A-5
0F0 - 0FF	i486 Math Coprocessor
1F0 - 1F8	Fixed Disk Drive Adapter
200 - 207	Game I/O
20C - 20D	Reserved
21F	Reserved
278 - 27F	Parallel Printer Port 2
2B0 - 2DF	Alternate Enhanced Graphic Adapter
2E1	GPIB Adapter 0
2E2 - 2E3	Data Acquisition Adapter 0
2F8 - 2FF	Serial Port 2 (RS-232-C)
300 - 31F	Prototype Card
360 - 363	PC Network (Low Address)
364 - 367	Reserved
368 - 36B	PC Network (High Address)
36C - 36F	Reserved
378 - 37F	Parallel Printer Port 1

I/O Address (HEX)	I/O device
380 - 38F	SDLC, Bisynchronous 2
390 - 393	Cluster
3A0 - 3AF	Bisynchronous 1
3B0 - 3BF	Monochrome Display and Printer Adapter
3C0 - 3CF	Enhanced Graphics Adapter
3D0 - 3DF	Color/Graphics Monitor Adapter
3F0 - 3F7	Diskette Drive Controller
3F8 - 3FF	Serial Port 1 (RS-232-C)
6E2 - 6E3	Data Acquisition Adapter 1
790 - 793	Cluster Adapter 1
AE2 - AE3	Data Acquisition Adapter 2
B90 - B93	Cluster Adapter 2
EE2 - EE3	Data Acquisition Adapter 3
1390 - 1393	Cluster Adapter 3
22E1	GPIB Adapter 1
2390 - 2393	Cluster Adapter 4
42E1	GPIB Adapter 2
62E1	GPIB Adapter 3
82E1	GPIB Adapter 4
A2E1	GPIB Adapter 5
C2E1	GPIB Adapter 6
E2E1	GPIB Adapter 7

Chapter 5 Q & A

5-1 Error Messages During Power on Self Test

During **power on self test (post)**, BIOS will automatically detect the system devices. Below are the questions that users most often meet. The user may press “**Esc**” key to skip the full memory test.

1. Beep sound

On power on, the system make beep sound to offer different messages. If the system is configured correctly, it prompts a short beep to show device configuration is done correctly. When VGA card and DIMM modules are not plugged well, the system makes longer and constant beep sounds.

2. BIOS ROM checksum error

It indicates the checksum of the BIOS code is not right and system will always halt on power on screen. Contact the dealer to exchange a new BIOS.

3. CMOS battery fails

It indicates the CMOS battery does not work. Contact the dealer to exchange a new battery.

4. CMOS checksum error

It indicates the CMOS checksum is incorrect. Load the default values in BIOS to solve this problem. This error may result from a weak BIOS, so replace a new BIOS if necessary.

5. *Hard disk initialize*

Please wait a moment...

Some hard drives require more time to initialize.

6. *Hard disk install failure*

The system can not find or initialize the hard drive controller or the drive. Check if the controller is set correctly. If no hard disk is installed, "**Hard drive selection**" must be set to "**none.**"

7. *Keyboard error or no keyboard present*

This means the system can not initialize the keyboard. Check if the keyboard is plugged well and be sure no keys are pressed during POST.

8. *Keyboard is lock out - Unlock the key*

When this message comes out, check if there is anything mis-placed on the keyboard. Be sure nothing touches the keys.

9. *Memory test fails*

There will be more information to specify the type and location of the memory error.

10. *Primary master hard disk fail*

The BIOS find an error in the primary master hard disk drive.

11. *Primary slave hard disk fail*

The BIOS finds an error in the primary slave hard disk drive.

12. *Secondary master hard disk fail*

The BIOS finds an error in the secondary slave master hard disk drive.

13. *Secondary slave hard disk fail*

The BIOS finds an error in the secondary slave IDE hard disk drive.