HOT-565

Pentium™ processor Based PCI MAIN BOARD

User's Manual

FCC Notice:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy. If not installed and used properly, in strict accordance with the manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures :

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/television technician for help and for additional suggestions.

The user may find the following booklet prepared by the Federal Communications Commission helpful "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office. Washington, DC 20402, Stock 004-000-00345-4

FCC Warning

The user is cautioned that changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

Note : In order for an installation of this product to maintain compliance with the limits for a Class B device, shielded cables and power cord must be used.

CE Notice:

Following standards were applied to this product, in order to achieve compliance with the electromagnetic compatibility :

- Immunity in accordance with EN 50082-1: 1992
- Emmitions in accordance with EN 55022: 1987 Class B.

NOTICE

Manual Ver 1.0

All information, documentation, and specifications contained in this manual are subject to change without prior notification by the manufacturer.

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TABLE OF CONTENTS

Preface

HOT-565 mainboard is a highly integrated IBM PC/AT compatible system board. The design will accept Intel Pentium P54C, Pentium MMX, Cyrix/IBM 6x86/L and AMD K5/K6 processors and also features high-performance pipelined burst secondary cache memory support with size of 512KB or 256KB. The memory subsystem is designed to support up to 256 MB of EDO RAM, Standard Fast Page DRAM and SDRAM in standard 72-pin SIMM socket and 168-pin 3.3 V DIMM socket.

HOT-565 provides a new level of I/O integration. Intel's 82430TX PCIset chipset provides increased integration and improved performance over other chipset designs. The 82430TX PCIset chipset provides an integrated Bus Mastering IDE controller with two high performance Ultra 33 DMA IDE interfaces for up to four IDE devices.

The onboard Giga I/O controller provides the standard PC I/O functions: floppy interface, two FIFO serial ports, an IrDA device port and a SPP/EPP/ECP capable parallel port.

Up to four PCI local bus slots provide a high bandwidth data path for data-movement intensive functions such as graphics, and up to three ISA slots complete the I/O function.

The HOT-565 provides the foundation for cost effective, high performance, highly expandable platforms, which deliver the latest in Pentium processor and I/O standard.

Chapter 1 Introduction

Specification

CPU Function

- Pentium P54C/P55C-MMX™ processors : 75~233MHz
- Cyrix/IBM 6x86/L processors : PR120~PR166
- AMD K5/K6 processors : PR75~PR233

Chipset

- Intel PCIset 82439TX and 82371AB

Memory

- Supports two banks of EDO, Fast Page Mode DRAM or 3.3V Sync. DRAM ranging from 8MB to 256MB
- Supports 4MB, 8MB, 16MB, 32MB and 64MB 72-pins SIMMs or 8MB, 16MB, 32MB, 64MB and 128MB 168-pin DIMMs

Cache Memory

- Integrated L2 write-back cache controller

  - 512KB or 256KB Direct Mapped Pipeline Burst Cache

Power Management Function

- Provides four power management modes : Full on, Doze, Standby, and Suspend
- Supports Microsoft APM 1.2
- Provides EPMI (External Power Management Interrupt) pin

Expansions

- 32-bit PCI bus slot x 4
- 16-bit ISA bus slot x 3
- 2-channel PCI IDE port
  - Support up to 4 IDE devices
  - PIO Mode 4, DMA Mode 2 transfers up to 22 MB/sec
  - Supports "Ultra 33" synchronous DMA mode transfer tup to 33 Mbytes/sec
  - Integrated 8 x 32-bit buffer for PCI IDE burst transfers
- One floppy port
- One parallel port
  - Supports **SPP** (PS/2 compatible bidirectional Parallel Port), **EPP** (Enhanced Parallel Port), and **ECP** (Extended Capabilities Port) high performance parallel port.
- Two serial ports
  - Supports 16C550 compatible UARTS.
  - Supports IrDA (Infrared) communication.
- One PS/2 mouse port
- Two USB (Universal Serial Bus) ports

System BIOS

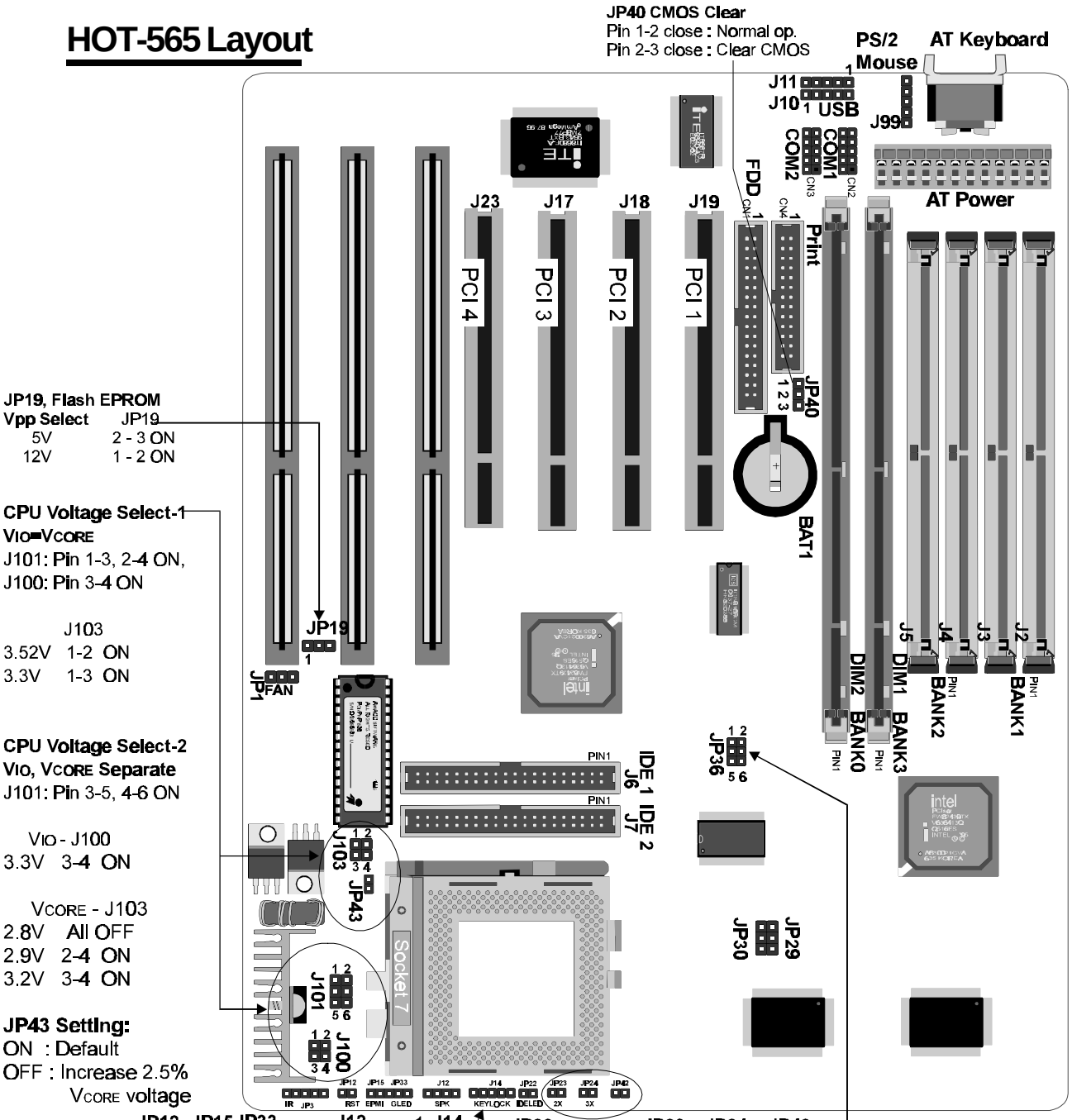
- Award PnP BIOS v4.51PG
  Bundled with Symbios Login(NCR) SDCM V4.0 SCSI BIOS

Board Design

- Dimension 220mm x 280mm

Chapter 2 Hardware Configuration

HOT-565 Layout



JP19, Flash EPROM Vpp Select

	JP19
5V	2 - 3 ON
12V	1 - 2 ON

CPU Voltage Select-1
VIO=VCORE
J101: Pin 1-3, 2-4 ON,
J100: Pin 3-4 ON

J103

3.52V	1-2 ON
3.3V	1-3 ON

CPU Voltage Select-2
VIO, VCORE Separate
J101: Pin 3-5, 4-6 ON

VIO - J100

3.3V	3-4 ON

VCORE - J103

2.8V	All OFF
2.9V	2-4 ON
3.2V	3-4 ON

JP43 Setting:
ON : Default
OFF : Increase 2.5% VCORE voltage

1 IR JP3 JP12 RST JP15 EPMI JP33 1 GLED 1 J12 SPK 1 J14 KEYLOCK JP22 - + IDELED JP23 2X JP24 3X JP42

CPU Clock Multiplier Select - JP23, JP24

	JP23	JP24
1 : 1.5/3.5	OFF	OFF
1 : 2	ON	OFF
1 : 3	OFF	ON
1 : 2.5/1.75	ON	ON

System Clock Select - JP36

	Pin 1-2	Pin 3-4	Pin 5-6
50MHz	ON	ON	ON
55MHz	ON	OFF	ON
60MHz	ON	ON	OFF
66MHz	OFF	ON	ON

Jumpers

Several hardware settings are made through the use of jumper caps to connect jumper pins on the main board. The jumper's pin 1 on main board will be on the top or on the left when holding the main board with the keyboard connector away from yourself. Pinout numeric is written around the jumpers with four or six pin jumpers. The jumpers will be show graphically such as  to connect pins 3&4 and 5&6, and  to connect pins 1&2 and 3&4 for six pin jumpers.
Jumpers will be show graphically such as  to connect pins 2&4 and  to connect pins 3&4 for four pin jumpers.

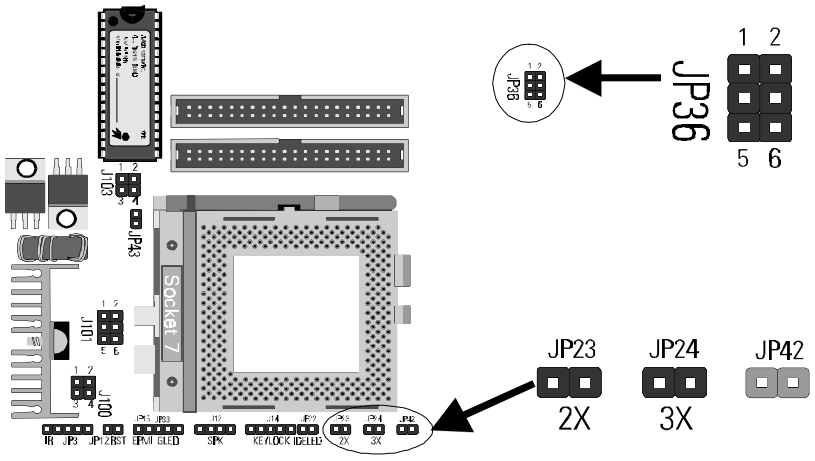
Jumpers with two pins will be shown as  for Short (On) and  for Open (Off).
To connect the pins, simply place a plastic jumper cap over the two pins as diagramed.

CPU Clock Speed Selection - JP23, JP24 and JP42

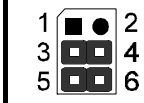
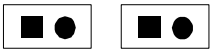
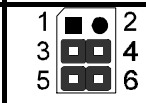
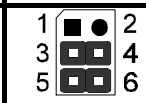
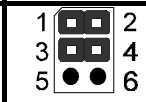
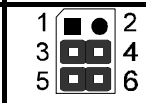
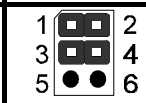
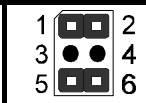
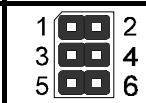
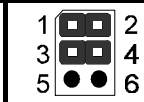
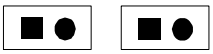
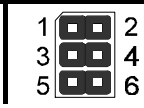
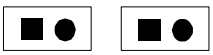
HOT-565 mainboard features a clock generator to provide adjustable system clock frequency. JP36 is a 6-pins jumper which determine the system clock frequency from 50 MHz to 66 MHz.

HOT-565 mainboard also provides Jumpers JP23 and JP24 to figure the CPU core clock multiplier. By inserting jumper caps on JP23 and JP24, the user can change the **Host Bus Clock**/**CPU Core Clock** ratio from 1 : 1.5 to 1 : 3.5.

JP42 is reserved for AMD future processors.



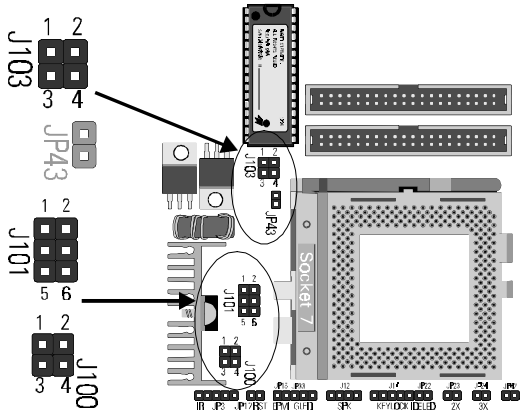
CPU Clock Configuration

Processors	JP36	System Clock / Multiplier	Frequency Multiplier JP23, JP24
Pentium MMX 233 MHz Pentium 100 MHz AMD-K6 PR2-233 AMD-K5 PR100/133		66 MHz x 1.5 / x 3.5	
Pentium/MMX 200 MHz AMD-K6 PR2-200 AMD-K5 PR200		66 MHz x 3	
Pentium/MMX 166 MHz AMD-K6 PR2-166 MHz AMD-K5 PR166 MHz		66 MHz x 2.5	
Pentium/MMX 150 MHz AMD-K5 PR150		60 MHz x 2.5	
Pentium 133 MHz Cyrix 6x86/L P166+ IBM 6x86/L P166+		66 MHz x 2	
Pentium 120 MHz Cyrix 6x86 P150+ IBM 6x86 P150+		60 MHz x 2	
Cyrix 6x86 PR133+ IBM 6x86 PR133+		55 MHz x 2	
Cyrix 6x86 P120+ IBM 6x86 P120+		50 MHz x 2	
Pentium 90 MHz AMD-K5 PR90/120		60 MHz x 1.5	
Pentium 75 MHz AMD-K5 PR75		50 MHz x 1.5	

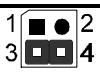
Onboard Regulator Output- J100, J101, J103 and JP43

These jumpers set the voltage supplied to the processor. Intel Pentium processors has only a Single Power Plane and uses the standard 3.3V(STD), AMD K5 and Cyrix/IBM 6x86 has also have a single power plane and use 3.52V. Currently Intel's new Pentium P55C MMX, AMD K6 and Cyrix/IBM 6x86L with dual power planes, Pentium P55C MMX and Cyrix/IBM 6x86L requires 2.8V, AMD K6 PR166 and PR200 requires 2.9V; PR233 requires 3.2V.

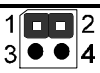
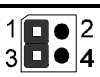
JP43 is designed to fine tune VCORE output from regulator. When the jumper cap is removed from JP43, it will increase VCORE voltage output from regulator by 2.5%. Normally, JP43 is set to close by insert a jumper cap.



Dual Power Planes (VIO, VCORE separated)

Processor	Vcore Output	J103	J101	J100 Vio=3.3V
Pentium MMX, Cyrix/IBM 6x86L	2.8 V			
AMD K6 PR166/PR200	2.9 V			
AMD K6 PR233	3.2 V			

Single Power Plane (VIO=VCORE)

Processor	Voltage Output	J103	J101	J100
AMD K5, Cyrix/IBM 6x86	3.52 V			
Pentium, Cyrix/IBM 6x86	3.3 V			

Flash EPROM Jumper - JP19

HOT-565 mainboard supports two types of flash EPROM: 5 volt and 12 volt. By setting up jumper JP19, you can update both types of flash EPROM with new system BIOS files as they come available.
JP19 Pin 2-3 Close for 5V, Pin 1-2 Close for 12V.

BIOS UPGRADES

Flash memory makes distributing BIOS upgrades easy. A new version of the BIOS can be installed from a diskette.

Please note the following when making the BIOS updates.

** Flash utility can't work under protected/virtual mode. Memory manager like **QEMM.386**, **EMM386** should not be loaded. (or Simply bypass all **config.sys** and **autoexec.bat** on system boot up.

** Flash utility supports both 5V and 12V Flash EPROM.

Clear CMOS - JP40

HOT-565 mainboard supports jumper **JP40** for discharging mainboard's CMOS memory.

This jumper can clear the CMOS data stored in the Ultra I/O chip. To clear the CMOS data please follow listed steps:

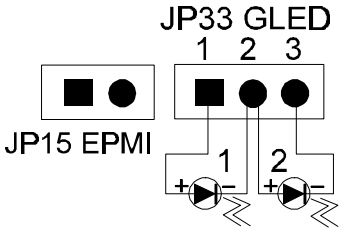
1) Turn off the PC,
2) Remove the jumper cap from JP40 pin 1-2,
3) Insert the jumper cap to JP40 pin 2-3 for a brief while,
4) Remove the jumper cap from JP40 pin 2-3,
5) Reinsert the jumper cap to JP40 pin 1-2,
6) Turn on the PC.

Connectors & Sockets

Connectors & Sockets

ITEM	FUNCTION	ITEM	FUNCTION
J2, 3, 4, 5	On-board SIMM sockets	J14	Power LED and Keylock Connector
DIM1, 2	On-board 3.3V DIMM sockets	J12	PC Speaker Connector
J23, 17, 18, 19	On-board PCI Slots	JP12	Hardware Reset Switch Connector
J20, 21, 22	On-board ISA Slots	JP33	Green LED **Note 1
J6	On-board PCI Primary IDE Connector	JP15	EPMI Connector *Note 1
J7	On-board PCI Secondary IDE Connector	JP22	On-board Enhanced IDE R/W LED Connector
CN1	On-board Floppy Controller Connector	J10, 11	Universal Serial Bus (USB) Connectors *Note 2
CN4	On-board Parallel Port Connector	JP3	Infra-red Communication Port Connector *Note 3
CN2	On-board Serial port-1 Connector	JP1	Cooling Fan Connector *Note 4
CN3	On-board Serial Port-2 Connector		
J99	On-board PS/2 Mouse Port Connector *Note 5		

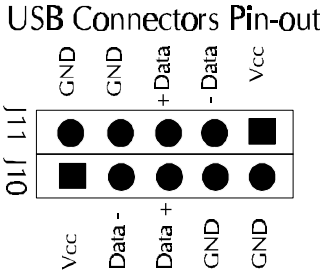
Note 1: JP33, JP15 - Green LED and EPMI connector



The main board provides an EPMI connector-JP15, this allows the user to manually place the system into suspend mode. This 2-pin connector connects to the case-mounted suspend switch. If you do not have a switch for the connector, you may use the "Turbo Switch" since it does not have a function.
If you want to use this connector, "Power Management" in the Power Management Setup of the BIOS section should not be on the setting of Disabled.

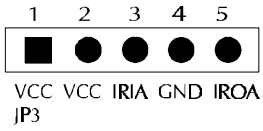
JP33 is a 3-pin Green LED connector, the user can connect LED on pin 1-2(setting 1) or pin 2-3(setting 2). Setting 1 will turn on LED on normal operation and turn off LED on suspend mode. On the contrary, setting 2 will turn off LED on normal operation and turn on LED on suspend mode.

Note 2: J10, J11 - USB connectors



The main board provides two sets USB (Universal Serial Bus) connectors - J10 and J11 for USB devices use.

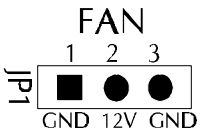
Note 3: JP3 - Infrared module connector



The main board provides a 5-pin infrared connector - JP3 as an optional infrared module for wireless transmitting and receiving.

Note 4: JP1 - 12V cooling fan power connector

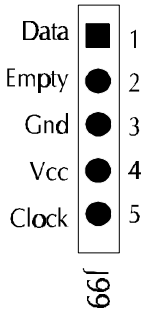
The main board provides a on-board 12V cooling fan power connector for cooling fan. Please make sure the red wire connect to +12V and black wire connect to ground (GND).



Caution : ***Do not short 12V and GND pin of JP1 by a jumper cap*** or it will cause serve damage to the main board.

Note 5: JP99- PS/2 Mouse 5 pins connector

The main board provides an 5 pins PS/2 mouse connector for optional PS/2 mouse cable. Diagram on the right side is the pinout of connector.



Chapter 3 Memory Configuration

The HOT-565 mainboard provides four 72-pin SIMM sockets and two 168-pin DIMM sockets that make it possible to install up to 256MB of RAM. The SIMM socket support 4MB, 8MB, 16MB, 32MB and 64MB 5V single- or double-side fast page or EDO DRAM modules, and DIMM socket support 8MB, 16MB, 32MB, 64MB, and 128MB 3.3V single- or double-side SDRAM, fast page, or EDO modules.

Caution : The user should not populate both 5V SIMM modules & 3.3V DIMM modules at the same time.

The four SIMM sockets are arranged in two banks of two sockets each, the two DIMM socket are also arranged in two banks of one socket each. Each bank provides a 64/72-bit wide data path.

Both SIMMs in a bank must be of the same memory size and type, although the different types of memory may differ between banks. It is possible to have 70 ns fast page DRAM in one bank and 60 ns EDO DRAM in the other.

The memory configuration tables on next two pages list the SIMMs and DIMMs memory configuration.

Table 3-1. Memory Configuration Table

SIMM 1	SIMM 2	SIMM 3	SIMM 4	DIMM 1	DIM 2	TOTAL
4 MB	4 MB	——	——	——	——	8 MB
4 MB	4 MB	4 MB	4 MB	——	——	16 MB
8 MB	8 MB	——	——	——	——	16 MB
4 MB	4 MB	8 MB	8 MB	——	——	24 MB
8 MB	8 MB	8 MB	8 MB	——	——	32 MB
16 MB	16 MB	——	——	——	——	32 MB
4 MB	4 MB	16 MB	16 MB	——	——	40 MB
8 MB	8 MB	16 MB	16 MB	——	——	48 MB
16 MB	16 MB	16 MB	16 MB	——	——	64 MB
32 MB	32 MB	——	——	——	——	64 MB
4 MB	4 MB	32 MB	32 MB	——	——	72 MB
8 MB	8 MB	32 MB	32 MB	——	——	80 MB
16 MB	16 MB	32 MB	32 MB	——	——	96 MB
32 MB	32 MB	32 MB	32 MB	——	——	128 MB
64 MB	64 MB	——	——	——	——	128 MB
4 MB	4 MB	64 MB	64 MB	——	——	136 MB
8 MB	8 MB	64 MB	64 MB	——	——	144 MB
16 MB	16 MB	64 MB	64 MB	——	——	160 MB
32 MB	32 MB	64 MB	64 MB	——	——	192 MB
64 MB	64 MB	64 MB	64 MB	——	——	256 MB
——	——	——	——	8 MB	——	8 MB
——	——	——	——	8 MB	8 MB	16 MB
——	——	——	——	16 MB	——	16 MB
——	——	——	——	8 MB	16 MB	24 MB
——	——	——	——	16 MB	16 MB	32 MB
——	——	——	——	32 MB	——	32 MB
——	——	——	——	8 MB	32 MB	40 MB
——	——	——	——	16 MB	32 MB	48 MB
——	——	——	——	32 MB	32 MB	64 MB
——	——	——	——	64 MB	——	64 MB
——	——	——	——	8 MB	64 MB	72 MB
——	——	——	——	16 MB	64 MB	80 MB
——	——	——	——	32 MB	64 MB	96 MB
——	——	——	——	64 MB	64 MB	128 MB
——	——	——	——	128 MB	——	128 MB
——	——	——	——	8 MB	128 MB	136 MB
——	——	——	——	16 MB	128 MB	144 MB
——	——	——	——	32 MB	128 MB	160 MB
——	——	——	——	64 MB	128 MB	192 MB
——	——	——	——	128 MB	128 MB	256 MB

Chapter 4 Award BIOS Setup

HOT-565 BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed RAM so that it retains the Setup information when the power is turned off.

Entering Setup

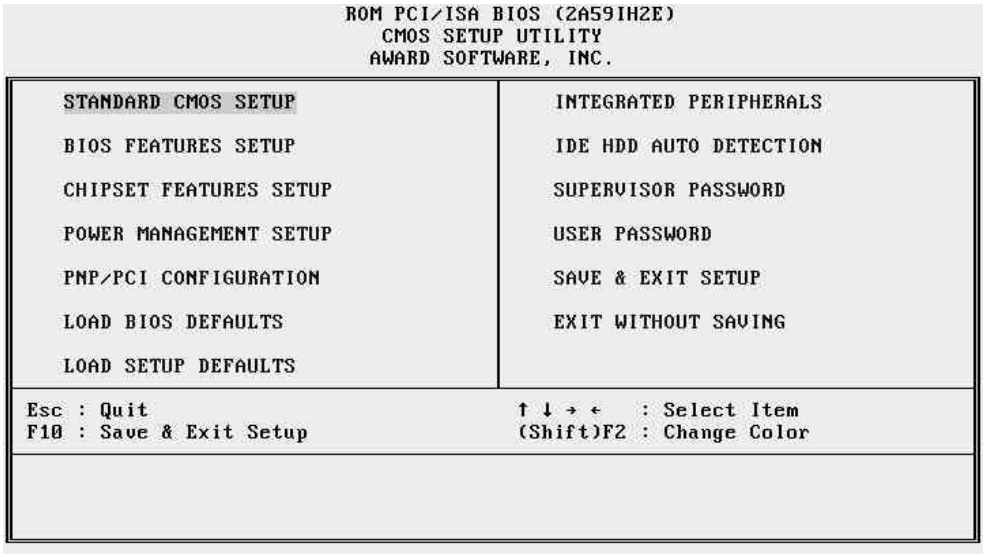
Power on the computer and press <Del> immediately will allow you to enter Setup. The other way to enter Setup is to power on the computer, when the below message appear briefly at the bottom of the screen during the POST (Power On Self Test), press <Del> key or simultaneously press <Ctrl>,<Alt>, and <Esc> keys.

TO ENTER SETUP BEFORE BOOT PRESS CTRL-ALT-ESC OR DEL KEY

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF the ON or pressing the "RESET" button on the system case. You may also restart by simultaneously press <Ctrl>,<Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to,

PRESS F1 TO CONTINUE, CTRL-ALT-ESC OR DEL TO ENTER SETUP

The Main Menu



Standard CMOS setup

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

BIOS features setup

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

Chipset features setup

This setup page includes all items of chipset features.

Power Management Setup

This setup page includes all items of Power Management features.

PnP/PCI Configuration setup

This item specifies the value (in units of PCI bus blocks) of the latency timer for the PCI bus master and the IRQ level for PCI device. Power-on with BIOS defaults

Load BIOS Defaults

BIOS defaults loads the values required by the System for the maximum performance. However, you can change the parameter through each Setup Menu.

Load Setup Defaults

Setup defaults loads the values required by the system for the O.K. performance. However, you can change the parameter through each Setup Menu.

Integrated Peripherals

This setup page includes all items of peripheral features.

IDE HDD auto detection

Automatically configure IDE hard disk drive parameters.

Supervisor Password

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

User Password

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

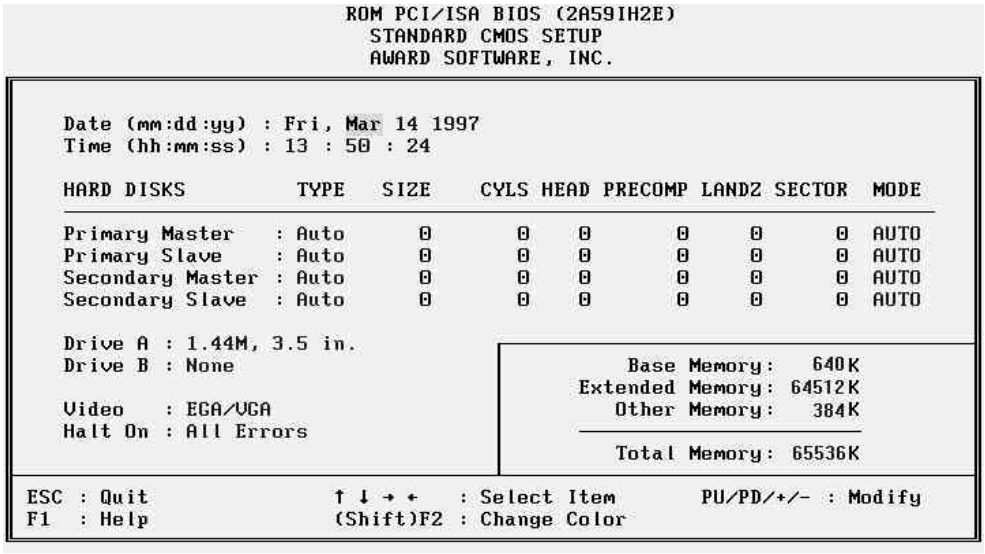
Save & Exit setup

Save CMOS value change to CMOS and exit setup

Exit without saving

Abandon all CMOS value changes and exit setup.

Standard CMOS Setup



Date

The date format is <day>, <month> <date> <year>. Press <F3> to show the calendar.

Time

The time format is <hour> <minute> <second>. The time is calculated base on the 24-hour military-time clock. For example. 5 p.m. is 17:00:00.

Hard Disks Type

This item identify the types of hard disk drives that has been installed in the computer. There are 46 predefined types and a user definable type.

Press PgUp or PgDn to select a numbered hard disk type or type the number and press <Enter>. 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 item. If your hard disk drive type is not matched or listed, you can use Type User to define your own drive type manually.

If you select Type User, related information is asked to be entered to the following items. Enter the information directly from the keyboard and press <Enter>. Those information should be provided in the documentation from your hard disk vendor or the system manufacturer.

The user may also set those items to AUTO to auto configure hard disk

drives parameter when system power-on.

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

Drive A type/Drive B type

This item specifies the types of floppy disk drive A or drive B that has been installed in the system.

Video

This item selects the type of adapter used for the primary system monitor that must matches your video display card and monitor. Although secondary monitors are supported, you do not have to select the type in Setup.

Error halt

This item determines if the system will stop, when an error is detected during power up.

Memory

This item is display-only. It is automatically detected by POST (Power On Self Test) of the BIOS.

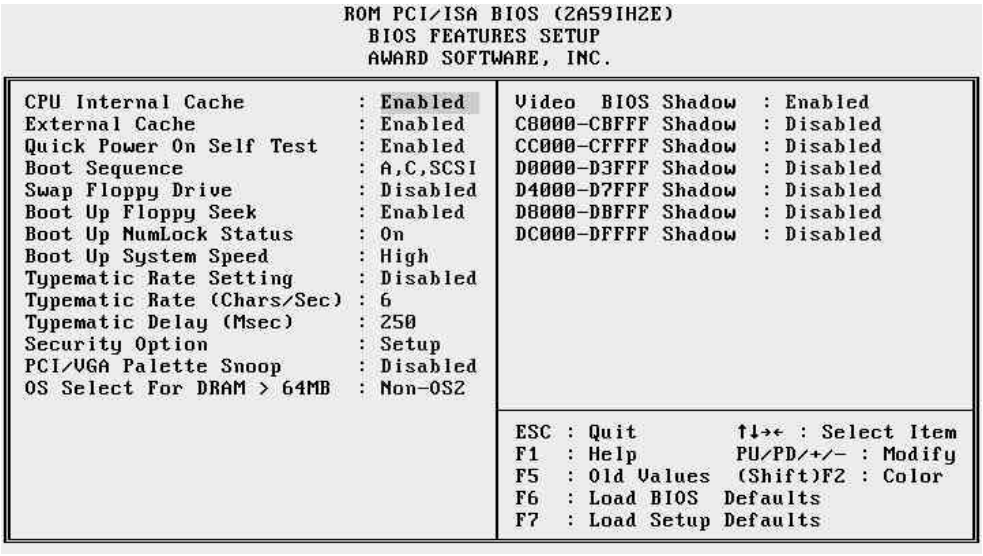
Base Memory

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 512K for systems with 512K memory installed on the mainboard, or 640K for systems with 640K or more memory installed on the mainboard.

Extended Memory

The BIOS determines how much extended memory is present during the POST. This is the amount of memory located above 1MB in the CPU's memory address map.

BIOS Features Setup



CPU Internal/External Cache

This item enables CPU internal cache and external cache to speed up memory access.

Quick Power On Self Test

This item speeds up Power On Self Test (POST) after you power on the computer. If it is set to Enabled, BIOS will shorten or skip some check items during POST.

Boot Sequence

This item determines which drive computer searches first for the disk operating system. Default setting is A, C, SCSI.
BIOS also support system boot from CD-ROM drive or SCSI hard disk drive.

Swap Floppy Drive

When this item enables, the BIOS will swap floppy drive assignments so that Drive A: will function as Drive B: and Drive B: as Drive A:.

Boot Up Floppy Seek

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks.

Boot Up NumLock Status

When this option enables, BIOS turns on ***Num Lock*** when system is powered on.

Boot Up System Speed

This option sets the speed of the CPU at system boot time. The settings are ***High*** or ***Low***.

Typematic Rate Setting/Typematic Rate/Typematic Delay

This determines if the typematic rate and typematic delay are to be used. When the typematic rate setting is enabled, **typematic rate** allows you select the rate at which the keys are accelerated and **typematic delay** allows you to select the delay between when the key was first depressed and when the acceleration begins.

Security Option

This item allows you to limit access to the System and Setup, or just to Setup.
When ***System*** is selected, the System will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
When ***Setup*** is selected, the System will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

PCI VGA Palette Snoop

This item must be set to enabled if there is a MPEG ISA card installed in the system, and disabled if there is no MPEG ISA card installed in the system.

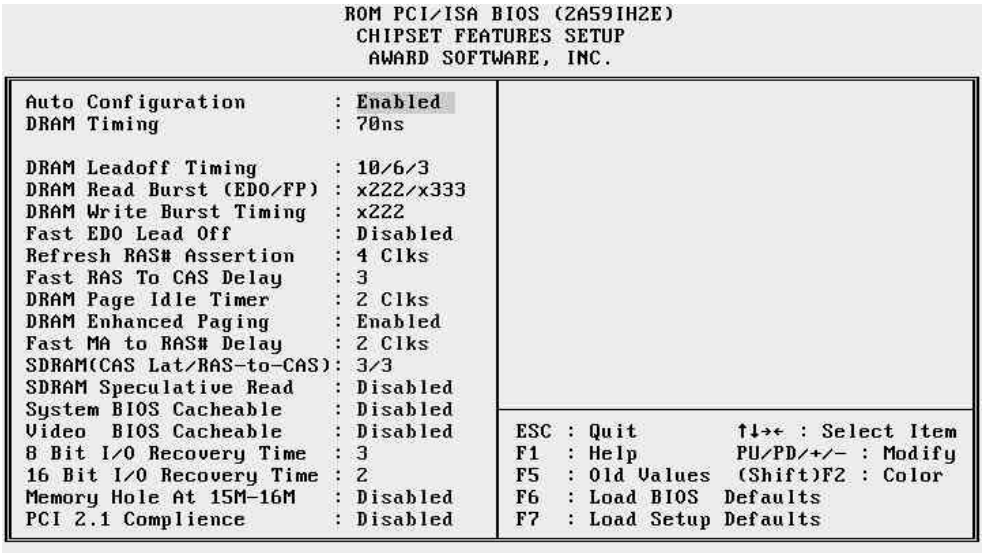
OS Select For DRAM > 64MB

This item allows you to access the memory that over 64 MB in OS/2.

Video BIOS Shadow/XXXXX-XXXXX Shadow

These items determine whether Video BIOS or optional ROM will be copied to RAM.

Chipset Features Setup



Auto Configuration

This item auto configures the following items: DRAM Leadoff Timing, DRAM Read Burst, DRAM Write Burst Timing, Fast EDO Lead off and Refresh RAS# Assertion.

DRAM Timing

This item set the DRAM Read/Write timings that the system uses. When item, "Auto Configuration", is disabled, this item will not show up.

DRAM Leadoff Timing

This item sets the number of CPU clocks allowed before DRAM Read and Write are performed.

DRAM Read Burst (EDO/FP)

This item set the EDO/FP DRAM Read Burst Timing. The timing used depends on the type of DRAM (EDO burst mode or standard fast page mode) on a per-bank basis. The options are***x222/x333***, ***x333/x444***, and ***x444/x444***.

DRAM Write Burst Timing

This item set the DRAM Write Burst Timing. The timing used depends on the type of DRAM (standard page mode or EDO burst mode) on a per-bank basis. The options are ***x4444***, ***x3333***, and ***x2222***.

Fast EDO Lead off

This item is used to defined which fast path is selected for CPU to DRAM read cycles for the leadoff, the options are "***Enable***" or "***Disable***".

Refresh RAS# Assertion

This item is used to set the number of clocks RAS# is asserted for Refresh cycles.

Fast RAS To CAS Delay

When DRAM is refreshed, both rows and columns are address separately. This setup item allows you to determine the timing of the transition from Row Address Strobe (RAS) to Column Address Strobe (CAS). The options are ***3*** and ***2*** CLKs.

Fast MA to RAS# Delay CLK

This item is used to set Fast MA (Memory Address) to RAS# Delay which control DRAM Row Miss timings.

DRAM Page Idle Timer

This item determine the amount of time in HCLKs the 430TX DRAM controller will wait to close a DRAM page after the CPU becomes idle.

DRAM Enhanced Paging

If this item set to *Enabled*, the 430TX DRAM controller will keep the page open until a page or row miss occurs. If set to *Disabled*, the DRAM page is kept open when CPU host bus is non-idle, or PCI interface owns the bus.

SDRAM (CAS Lat/RAS-to-CAS)

This item is used to set CAS# Latency and RAS# to CAS# clock for SDRAM. If SDRAMs absent, this item will not show up.

SDRAM Speculative Read

This item is used to set the SDRAM speculative read logic is enabled or disabled. (Leave on default settings of Disabled)

System BIOS Cacheable

This item allows the user to set the system BIOS F000~FFFF areas that are cacheable or non-cacheable.

Video BIOS Cacheable

This item allows the user to set the video BIOS C000~C7FF areas that are cacheable or non-cacheable.

8 Bit I/O Recovery Time

The recovery time is the length of time, measured in CPU clocks, that the system will delay after the completion of an input/output request. This delay takes place because the CPU is operating more than the input/output bus that the CPU must be delayed to allow for the completion of the I/O.

This item allows you to determine the recovery time allowed for 8 bit I/O. Choices are from NA, 1 to 8 CPU clocks.

16-Bit I/O Recovery Time

This item allows you to determine the recovery time allowed for 16 bit I/O. Choices are from NA, 1 to 4 CPU clocks.

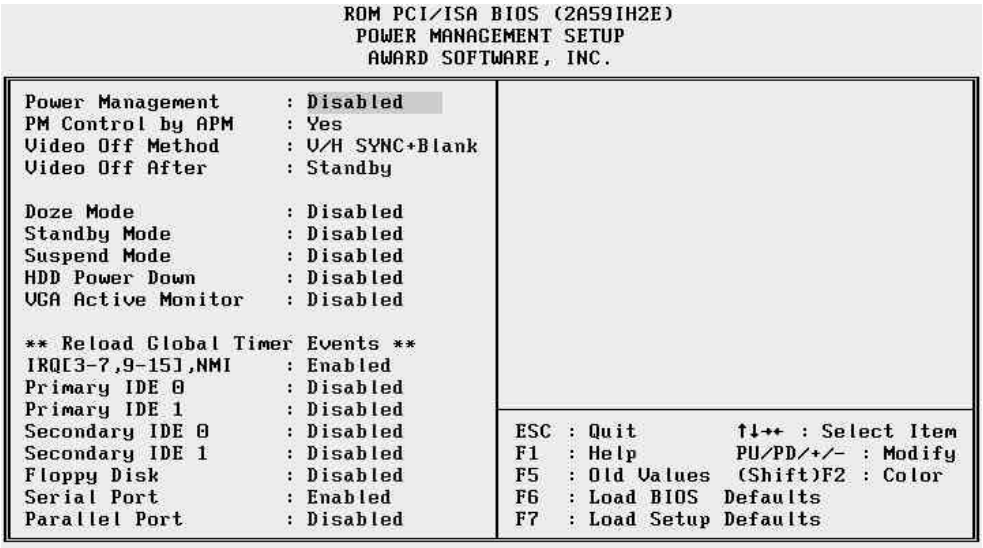
Memory Hole At 15M-16M

In order to improve performance, some space in memory can be reserved for ISA cards. This memory must be mapped into the memory space below 16 MB.

PCI 2.1 Compliance

Since the 2.1 revision of the PCI specification requires much tighter controls on target and master latency. PCI cycles to or from ISA typically take longer. When enabled, the chipset provides a programmable delayed completion mechanism to meet the required target latencies.

Power Management Setup



Power Management

This item determines the options of the power management function*Max Saving* puts the system into power saving mode after a brief period of system inactivity; *Min Saving* is the same as *Max Saving* except the time of the system inactivity period is longer; *Disabled* disables the power saving feature; *User Defined* allows you to set power saving options according to your preference.

PM Control by APM

If this item set to *No*, system BIOS will be ignored and APM calls the power to manage the system.
If this item setup to *Yes*, system BIOS will wait for APM's prompt before it enter any PM mode e.g. *DOZE*, *STANDBY* or *SUSPEND*.

Video Off Method

This item define the video off features - *V/H SYNC+Blank*, *DPMS*, and *Blank Only*. The first option, which is the default setting, blanks the screen and turns off vertical and horizontal scanning; *DPMS* allows the BIOS to control the video display card if it supports the *DPMS* feature; *Blank Screen* only blanks the screen.

Doze Mode, Standby Mode, Suspend Mode

These items set the period of time after which each of these mode activate, the periods are from 1 min to 1 hour.

HDD Power Down

This item defines the continuous HDD idle time before the HDD enters power saving mode (motor off). The options are from 1 min to 15 min and *Disabled*.

VGA Active Monitor

If this item is set to Enabled, the VGA activity event will be monitored to reload global timer.

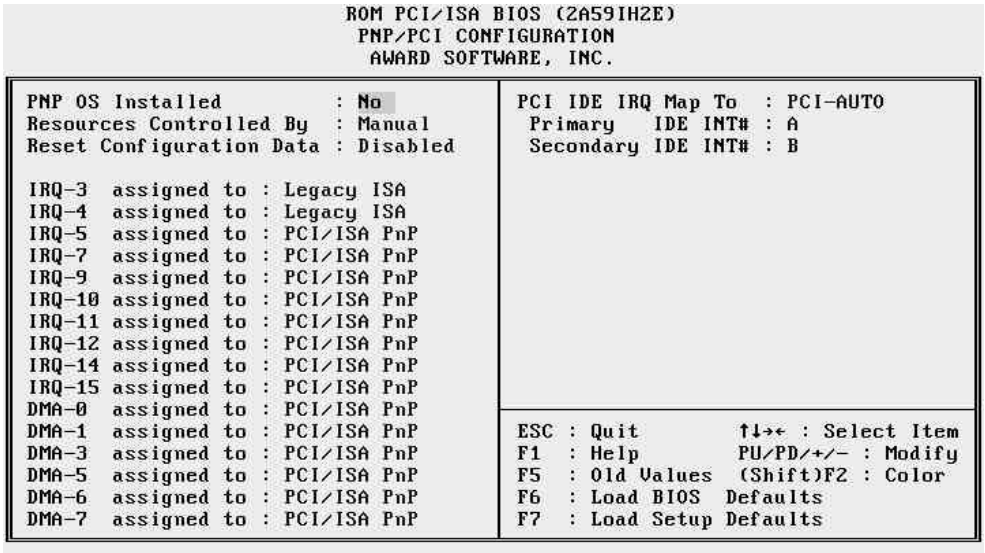
** Reload Global Timer Events **

If these items is set to Disabled, the system activity event will not be monitored to reload global timer.

If these items is set to Enabled, the system activity event will be monitored to reload global timer.

These items including IRQ[3-7, 9-15], NMI, Primary IDE0/1, Secondary IDE 0/1, Floppy Disk, Serial Port and Parallel Port.

PCI Configuration Setup



PNP OS Installed

When this item is set to Yes, it will allow the PnP OS(Windows 95) control the system resources except PCI devices and PnP boot devices.
Default setting is ***No***.

Resources Controlled By

The Award Plug and Play BIOS has the capability to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system as Windows 95.

Reset Configuration Data

This item allows you to determine whether to reset the configuration data or not.

IRQ 3/4/5/7/9/10/11/12/14/15, assigned to

These items allow you to determine the IRQ assigned to the ISA bus and is not available for PCI slot.

Choices are ***Legacy ISA*** and ***PCI/ISA PnP***.

DMA 0/1/3/5/6/7 assigned to

These items allow you to determine the DMA assigned to the ISA bus and is not available for PCI slot.

Choices are ***Legacy ISA*** and ***PCI/ISA PnP***.

PCI IRQ Activated by

This item sets the method by which the PCI bus recognize that an IRQ service is being requested by a device. You should never change the default configuration unless advised otherwise by your System's manufacturer. Choices are ***Level***(default) and ***Edge***.

PCI IDE IRQ Map to

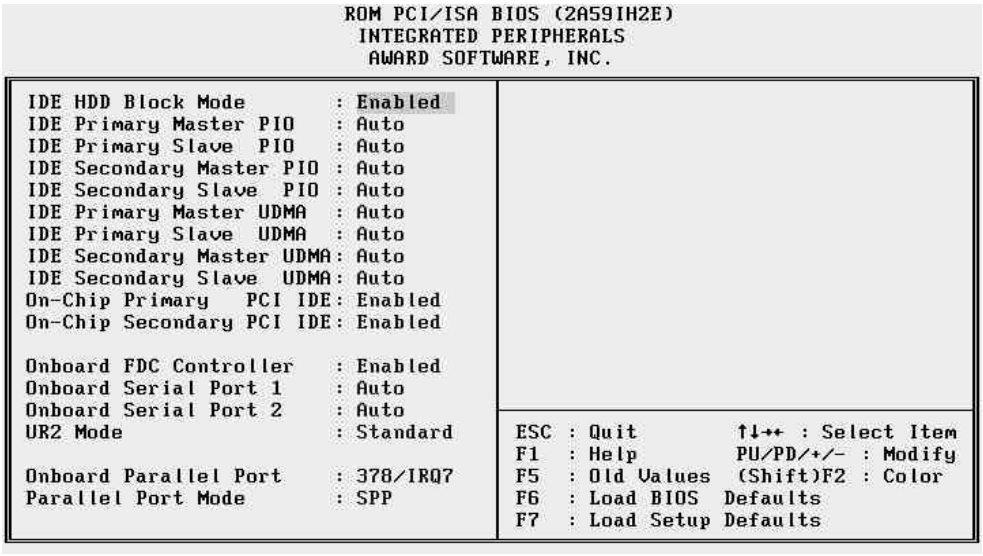
This items allows you to configure your system to the type of IDE disk controller in use. By default, Setup assumes that your controller is an ISA device rather than a PCI controller.

If you have equipped your system with a PCI controller, changing this allows you to specify which slot has the controller and which PCI interrupt (A, B, C or D) is associated with the connected hard drives.

Remember that this setting refers to the hard disk drive itself, rather than individual partitions. Since each IDE controller supports two separate hard disk drives, you can select the INT# for each. Again, you will note that the primary has a lower interrupt than the secondary as described in "*Slot x Using INT#*" above.

Selecting "*PCI Auto*" allows the system to automatically determine how your IDE disk system is configured.

Integrated Peripherals



IDE HDD Block Mode

This item is used to set IDE HDD Block Mode. If your IDE Hard Disk supports block mode, then you can enable this function to speed up the HDD access time. If not, please disable this function to avoid HDD access error.

IDE Primary/Secondary Master/Slave PIO

In these items, there are five modes defined in manual mode and one automatic mode. There are*0, 1, 2, 3, 4,* and *AUTO* is the default settings for on board Primary/Secondary Master/Slave PIO timing.

IDE Primary/Secondary Master/Slave UDMA

On this mainboard, Intel 430TX PCIset improves IDE transfer rate using Bus Master UltraDMA/33 IDE which can handle data transfer up to 33MB/ sec. The options are*Disabled* and *Enabled,* and *Enabled* is the default settings for on board Primary/Secondary Master/Slave*UltraDMA33*.

On-Chip Primary/Secondary PCI IDE

This item is used to defined on chip Primary/Secondary PCI IDE controller is *Enable* or *Disable* setting.

Onboard FDC Control

This item specifies onboard floppy disk drive controller. This setting allows you to connect your floppy disk drives to the onboard floppy connector. Choose the "*Disabled*" settings if you have a separate control card.

Onboard UART1/2

This item is used to define onboard serial port 1/Port2 to *3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, Auto* or *Disabled*.

UR2 Mode

The main board support IrDA(HPSIR) and Amplitudes Shift Keyed IR(ASKIR) infrared through COM 2 port. This item specifies onboard Infra Red mode to *IrDA 1.0, ASKIR, MIR 0.57M, MIR 1.15M, FIR* or *Standard (Disabled)*.
Note : FIR is not available currently.

IR Duplex Mode

This item specifies onboard infrared transfer mode to *full-duplex* or *half-duplex*.This item will not show up when IrDA, ASKIR, or MIR UR2 modes are selected.

Onboard Parallel Port

This item specifies onboard parallel port address to *378H, 278H, 3BCH* or *Disabled.*

Parallel Port Mode

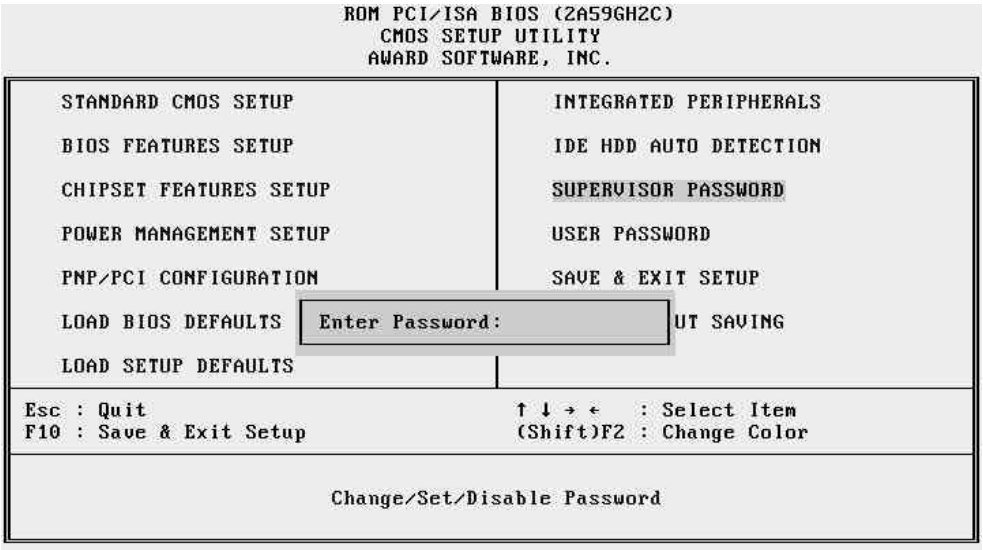
This item specifies onboard parallel port mode. The options are *SPP* (Standard Parallel Port),*EPP*(Enhanced Parallel Port),*ECP* (Extended Capabilities Port), and*EPP+ECP.*

ECP Mode Use DMA

This item specifies*DMA* (Direct Memory Access) channel when ECP device is in use. The options are*DMA 1* and *DMA 3***.** This item will not show up when SPP and EPP printer mode is selected.

Password Setting

This section describes the two access modes that can be set using the options found on the Supervisor Password and User Password.



Supervisor Password and User Password

The options on the Password screen menu make it possible to restrict access to the Setup program by enabling you to set passwords for two different access modes: Supervisor mode and User mode.

In general, Supervisor mode has full access to the Setup options, whereas User mode has restricted access to the options. By setting separate Supervisor and User password, a system supervisor can limit who can change critical Setup values.

Enter Password

Type the password, up to eight characters, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. 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 will confirm the password being disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

Password Disable

If you select System at Security Option of BIOS Features Setup Menu, you will be prompted for the password every time the system is rebooted or any time you try to enter Setup. If you select Setup at Security Option of BIOS Features Setup Menu, you will be prompted only when you try to enter Setup.

Warning : Retain a record of your password in a safe place. If you forget the password, the only way to access the system is to clear CMOS memory, please refer to "Clear CMOS" or "Clear Password" section.