HOT-555
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.

NOTICE

Manual Ver 1.1

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

The author assumes no responsibility for any errors or omissions which may appear in this document nor does it make a commitment to update the information contained herein.

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Preface

HOT-555 mainboard is a highly integrated IBM PC/AT compatible system board. The design will accept Intel Pentium, Cyrix 6x86 and AMD5k86 processors and also features high-performance pipeline burst secondary cache memory support with size of 256KB. The memory subsystem is designed to support up to 128 MB of EDO RAM, Standard Fast Page DRAM and SDRAM in standard 72-pin SIMM socket and 168-pin DIMM socket. A type 7 Pentium processor socket provides access to future processor enhancements.

HOT-555 provides a new level of I/O integration. Intel's 82430VX PCIset chipset provides increased integration and improved performance over other chipset designs. The 82430VX PCIset chipset provides an integrated Bus Mastering IDE controller with two high performance IDE interfaces for up to four IDE devices.

The onboard Super 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 three 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-555 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 processor clock : 75~200MHz
- Cyrix 6x86 CPU clock : 100~133MHz
- AMD5k86 CPU clock : 66~100MHz

Chipset

- Intel PCISet 82437VX, 82438VX and 82371SB

Memory

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

Cache Memory

- Integrated L2 write-back cache controller

  - 256KB Direct Mapped Pipeline Burst Cache

Power Management Function

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

Expansions

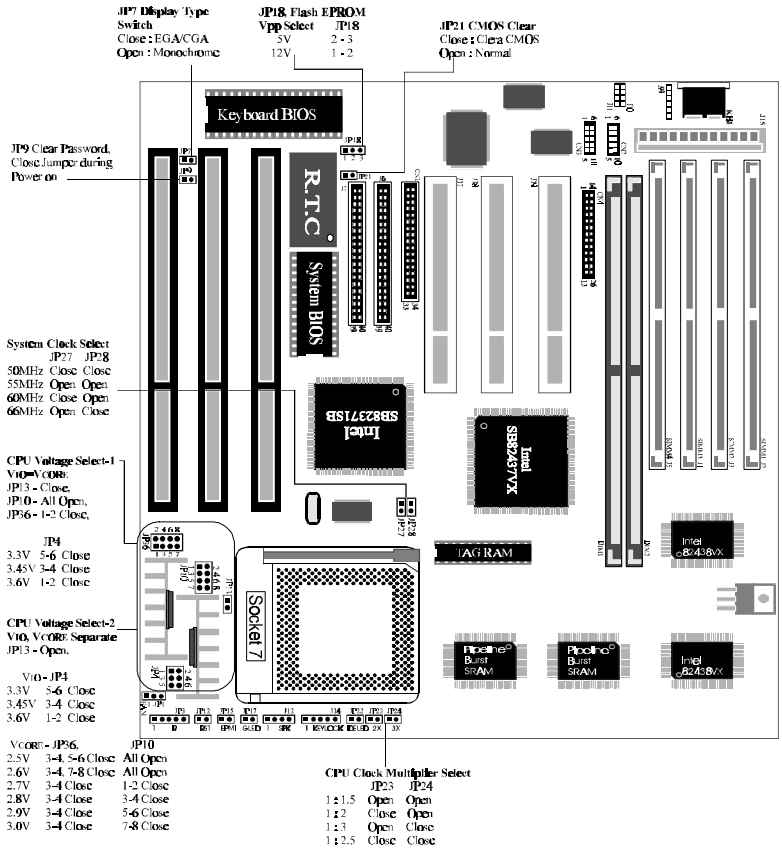
- 32-bit PCI bus slot x 3
- 16-bit ISA bus slot x 3
- 2-channel PCI IDE port
  - Support up to 4 IDE devices
  - PIO Mode 4 transfers up to 16 MB/sec
  - Integrated 8 x 32-bit buffer for PCI IDE burst transfers
- One floppy port
- One parallel port
  - Supports **SPP** (PS/2 compatible bidirectional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

Board Design

- Dimension 220mm x 230mm

Chapter 2 Hardware Installation

Jumpers



CPU Clock Speed Selection

HOT-555 mainboard features a clock generator to provide adjustable system clock frequency. Jumpers JP27 and JP28 determine the system clock frequency from 50MHz to 66MHz.

HOT-555 mainboard also provides Jumpers JP23 and JP24 to figure up CPU core clock multiplier. By inserting or removing 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.

CPU CLOCK SPEED	JP27	JP28	SYSTEM CLOCK	JP23	JP24	CPU Bus/Core RATIO
75 MHz Pentium Processor	CLOSE	CLOSE	50 MHz	OPEN	OPEN	1 : 1.5
90 MHz Pentium Processor	CLOSE	OPEN	60 MHz	OPEN	OPEN	1 : 1.5
100 MHz Pentium Processor	OPEN	CLOSE	66 MHz	OPEN	OPEN	1 : 1.5
120 MHz Pentium Processor	CLOSE	OPEN	60 MHz	CLOSE	OPEN	1 : 2
133 MHz Pentium Processor	OPEN	CLOSE	66 MHz	CLOSE	OPEN	1 : 2
150 MHz Pentium Processor	CLOSE	CLOSE	50 MHz	OPEN	CLOSE	1 : 3
180 MHz Pentium Processor	CLOSE	OPEN	60 MHz	OPEN	CLOSE	1 : 3
200 MHz Pentium Processor	OPEN	CLOSE	66 MHz	OPEN	CLOSE	1 : 3
125 MHz Pentium Processor	CLOSE	CLOSE	50 MHz	CLOSE	CLOSE	1 : 2.5
150 MHz Pentium Processor	CLOSE	OPEN	60 MHz	CLOSE	CLOSE	1 : 2.5
166 MHz Pentium Processor	OPEN	CLOSE	66 MHz	CLOSE	CLOSE	1 : 2.5
66 MHz AMD5k86 - P75	OPEN	CLOSE	66 MHz	CLOSE	OPEN	1 : 1
75 MHz AMD5k86 - P75	CLOSE	CLOSE	50 MHz	OPEN	OPEN	1 : 1.5
90 MHz AMD5K86 - P90	CLOSE	OPEN	60 MHz	OPEN	OPEN	1 : 1.5
100 MHz AMD5k86 - P100	OPEN	CLOSE	66 MHz	OPEN	OPEN	1 : 1.5
100 MHz Cyrix 6x86 - P120+	CLOSE	CLOSE	50 MHz	OPEN	OPEN	1 : 2
110 MHz Cyrix 6x86 - P133+	OPEN	OPEN	55 MHz	OPEN	OPEN	1 : 2
120 MHz Cyrix 6x86 - P150+	CLOSE	OPEN	60 MHz	OPEN	OPEN	1 : 2
133 MHz Cyrix 6x86 - P166+	OPEN	CLOSE	66 MHz	OPEN	OPEN	1 : 2

Onboard Regulator Output Selection - JP4, 10, 13, 36

HOT-555 mainboard is designed an onboard voltage regulator to provide single 3.3V voltage ranger (V_{IO}=V_{CORE}) for Intel Pentium P54C, Cyrix 6x86 and AMD5k86 processors, and also provide dual 3.3/2.5V voltage ranger (V_{IO}, V_{CORE} separated) for Intel P55C processors and Cyrix/AMD future processors.

Single Voltage Output (V_{IO}=V_{CORE})

Voltage Output	JP4	JP10, JP13, JP36
3.3 V	5 - 6 CLOSE	JP10 : All OPEN, JP13 : CLOSE, JP36 : 1 - 2 CLOSE
3.45 V	3 - 4 CLOSE	
3.6 V	1 - 2 CLOSE	

Dual Voltage Output (V_{IO}, V_{CORE} separated)

Voltage Output-Vio	JP4	JP13
3.3 V	5 - 6 CLOSE	OPEN
3.45 V	3 - 4 CLOSE	
3.6 V	1 - 2 CLOSE	

Voltage Output-Vcore	JP10	JP36
2.5 V	ALL OPEN	3 - 4, 5 - 6 CLOSE
2.6 V	ALL OPEN	3 - 4, 7 - 8 CLOSE
2.7 V	1 - 2 CLOSE	3 - 4 CLOSE
2.8 V	3 - 4 CLOSE	3 - 4 CLOSE
2.9 V	5 - 6 CLOSE	3 - 4 CLOSE
3.0 V	7 - 8 CLOSE	3 - 4 CLOSE

Note :

1. ***It is highly recommended that a CPU cooling fan is attached to the CPU to ensure system stability.***
2. ***Make sure none of the CPU cooling fan assembly the heat sink on the regulator to avoid damage to system.***

Flash EPROM Jumper - JP18

HOT-555 mainboard supports two types of flash EPROM, 5 volt and 12 volt. By setting up jumper JP18, you can update both types of flash EPROM with new system BIOS files as they come available.
JP18 Pin 2-3 Closed 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.

The flash upgrade utility, **Awdflash.exe**, has two notice for BIOS upgrades:

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 EEPROM.

Clear CMOS - JP21

HOT-555 mainboard supports jumper**JP21** for discharge mainboard's CMOS memory. The CMOS memory retains the system configuration information in the component of R.T.C.

You should short this jumper for a moment when you wish to clear CMOS memory, and then make sure open this jumper for normal operation to retain your new CMOS data.

Note: Clear CMOS & R.T.C function available only when "DS12887A" or "DS12B887" are in use.

There are different ways to discharge CMOS memory between "DS12887A" and "DS12B887".

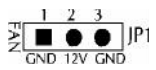
DS12887A - Turn off power, close jumper JP21 for 2 to 3 seconds then release and CMOS will be discharged.

DS12B887 - Close jumper JP21, turn on power durning 2 to 3 seconds then release JP21 and turn off power, CMOS will be discharged.

Clear Password - JP9

Allows system password to be cleared by shorting jumper JP9 and turning the system on, '**Password is cleared by jumper, (JCP) !**" message will shown up on power-on screen. The system should then be turned off and the jumper JP9 should be returned to OPEN to restore normal operation. The procedure should only be done if the user password has been forgotten. (This function may not available when Cyrix 6x86 CPU is in use)

Connectors & Sockets

Connectors & Sockets	
ITEM	FUNCTION
J2, J3, J4, J5	On-board SIMM sockets
DIM1, DIM2	On-board DIMM sockets
J17, J18, J19	On-board PCI Slots
J20, J21, J22	On-board ISA Slots
J6	On-board PCI Primary IDE Connector
J7	On-board PCI Secondary IDE Connector
CN1	On-board Floppy Controller Connector
CN4	On-board Parallel Port Connector
CN2	On-board Serial port-1 Connector
CN3	On-board Serial Port-2 Connector
J99	On-board PS/2 Mouse Port Connector
J14	Power LED and Keylock Connector
J12	PC Speaker Connector
JP12	Hardware Reset Switch Connector
JP17	Green LED
JP15	EPMI Connector
JP22	On-board Enhanced IDE R/W LED Connector
J10, J11	Universal Serial Bus (USB) Connectors
JP3	IrDA Communication Port Connector
JP1	Cooling Fan Connector 
JP7	Display type (Color/Mono) Switcher Open for Monochrome Close for EGA/CGA VGA display card don't care

Chapter 3 Memory Configuration

The HOT-555 mainboard provides four 72-pin SIMM sockets and two 168-pin DIMM sockets that make it possible to install up to 128MB of RAM. The SIMM socket support 4MB, 8MB, 16MB, and 32MB single- or double-side fast page or EDO DRAM modules. Memory timing requires 70 ns fast page devices or, for optimum performance, 60 ns EDO DRAM or 70 ns Synchronous DRAM may be used. Both parity and non-parity memory are supported.

The four SIMM sockets are arranged in two banks of two sockets each and the two DIMM sockets are 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 DIMM socket share the same address lines with SIMM socket, there have some restriction of memory configuration, please refer to Table 3-1, Table 3-2, and Table 3-3.

Table 3-1. Restriction of Memory Configuration

SIMM 1, 2 (J2, J3)	SIMM 3, 4 (J4, J5)	DIMM 1 (DIM1)	DIMM 2 (DIM 2)	Description
Single-bank	Single-bank	Single-bank	Single-bank	Single-bank SIMM include 4 MB and 16 MB. Double-bank SIMM include 8 MB and 32 MB. Single-bank DIMM include 8 MB and 32 MB Double-bank DIMM include 16 MB.
Single-bank	Double-bank	Single-bank	Not Available	
Double-bank	Single-bank	Not Available	Single-bank	
Empty	Empty	Double-bank	Double-bank	
Double-bank	Double-bank	Not Available	Not Available	
Single-bank	Empty	Single-bank	Double-bank	
Empty	Single-bank	Double-bank	Single-bank	

Table 3-2. Memory Configuration Table

SIMM 1, 2	SIMM 3, 4	DIMM 1	DIMM 2	TOTAL
4 MB	Empty	Empty	Empty	8 MB
8 MB	Empty	Empty	Empty	16 MB
16 MB	Empty	Empty	Empty	32 MB
32 MB	Empty	Empty	Empty	64 MB
Empty	4 MB	Empty	Empty	8 MB
Empty	8 MB	Empty	Empty	16 MB
Empty	16 MB	Empty	Empty	32 MB
Empty	32 MB	Empty	Empty	64 MB
Empty	Empty	8 MB	Empty	8 MB
Empty	Empty	16 MB	Empty	16 MB
Empty	Empty	32 MB	Empty	32 MB
Empty	Empty	Empty	8 MB	8 MB
Empty	Empty	Empty	16 MB	16 MB
Empty	Empty	Empty	32 MB	32 MB
Empty	Empty	8 MB	8 MB	16 MB
Empty	Empty	16 MB	16 MB	32 MB
Empty	Empty	32 MB	32 MB	64 MB
4 MB	4 MB	Empty	Empty	16 MB
4 MB	4 MB	8 MB	Empty	24 MB
4 MB	4 MB	8 MB	8 MB	32 MB
4 MB	4 MB	32 MB	Empty	48 MB
4 MB	4 MB	32 MB	32 MB	80 MB
4 MB	8 MB	Empty	Not Available	24 MB
4 MB	8 MB	8 MB	Not Available	32 MB
4 MB	8 MB	32 MB	Not Available	56 MB
4 MB	16 MB	Empty	Empty	40 MB
4 MB	16 MB	8 MB	Empty	48 MB
4 MB	16 MB	8 MB	8 MB	56 MB
4MB	16 MB	32 MB	Empty	72 MB
4 MB	16 MB	32 MB	32 MB	104 MB
4 MB	32 MB	Empty	Not Available	72 MB
4 MB	32 MB	8 MB	Not Available	80 MB
4 MB	32 MB	32 MB	Not Available	104 MB

Table 3-3. Memory Configuration Table Continued

SIMM 1, 2	SIMM 3, 4	DIMM 1	DIMM 2	TOTAL
8 MB	8 MB	Not Available	Not Available	32 MB
8 MB	16 MB	Not Available	Empty	48 MB
8 MB	16 MB	Not Available	8 MB	56 MB
8 MB	16 MB	Not Available	32 MB	80 MB
8 MB	32 MB	Not Available	Not Available	80 MB
8 MB	Empty	Not Available	8 MB	24 MB
8 MB	Empty	Not Available	16 MB	32 MB
8 MB	Empty	Not Available	32 MB	48 MB
16 MB	16 MB	Empty	Empty	64 MB
16 MB	16 MB	8 MB	Empty	72 MB
16 MB	16 MB	8 MB	8 MB	80 MB
16 MB	16 MB	32 MB	Empty	96 MB
16 MB	16 MB	8 MB	32 MB	104 MB
16 MB	16 MB	32 MB	32 MB	128 MB
16 MB	Empty	Empty	8 MB	40 MB
16 MB	Empty	Empty	16 MB	48 MB
16 MB	Empty	Empty	32 MB	64 MB
16 MB	Empty	8 MB	8 MB	48 MB
16 MB	Empty	8 MB	16 MB	56 MB
16 MB	Empty	8 MB	32 MB	72 MB
16 MB	Empty	32 MB	8 MB	72 MB
16 MB	Empty	32 MB	16 MB	80 MB
16 MB	Empty	32 MB	32 MB	96 MB
32 MB	32 MB	Not Available	Not Available	128 MB
32 MB	Empty	Not Available	8 MB	72 MB
32 MB	Empty	Not Available	16 MB	80 MB
32 MB	Empty	Not Available	32 MB	96 MB

Chapter 4 Award BIOS Setup

HOT-555's 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

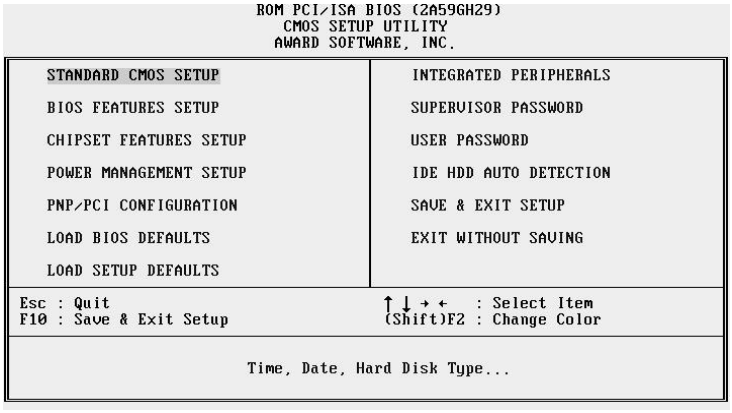
Power on the computer and press <Del> immediately will allow you to enter Setup. The other way to enter Setup is to power on the computer, when the below message appear briefly at the bottom of the screen during the POST (Power On Self Test), press <Del> key or simultaneously press <Ctrl>,<Alt>, and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

BIOS features setup

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

Chipset features setup

This setup page includes all the items of chipset features.

Power Management Setup

This setup page includes all the items of Power Management features.

PCI Configuration setup

This category specifies the value (in units of PCI bus blocks) of the latency timer for this 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 may change the parameter through the Option Setup Menu.

Load Setup Defaults

Setup defaults loads the values required by the system for the minimum performance. However, you may change the parameter through the Setup Menu.

Integrated Peripherals

This setup page includes all the 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.

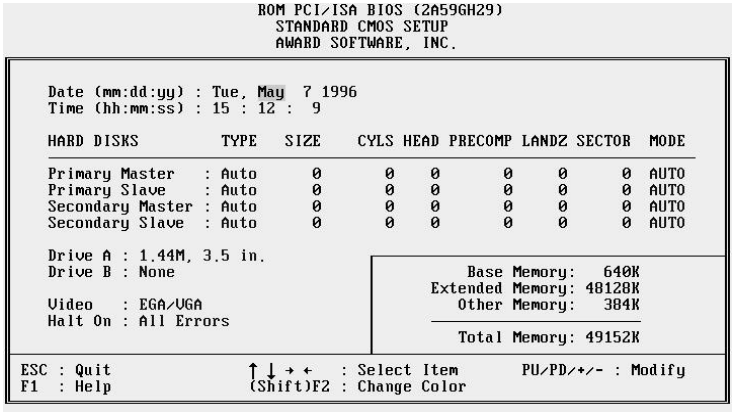
Save & Exit setup

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>, <date> <month> <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.

Drive C type/Drive D type

The category identify the types of hard disk drive C or drive D that has been installed in the computer. There are 46 predefined types and a user definable type. Type 1 to Type 46 are predefined. Type User is user-definable.

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 category. 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

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

Video

The category 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

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

Memory

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

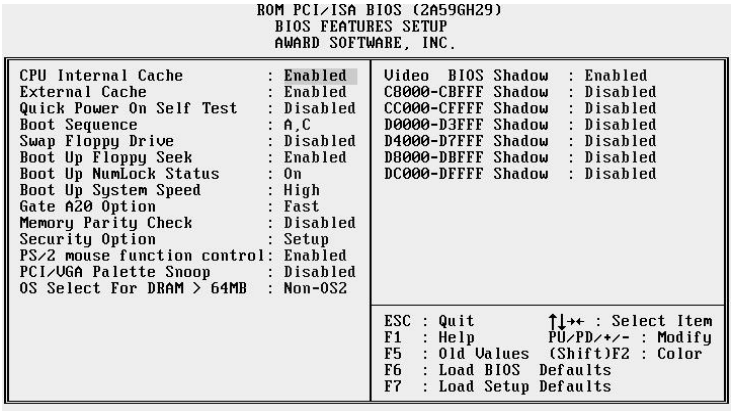
Base Memory

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 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 Cache

This category enables CPU internal cache to speed up memory access.

External Cache

This category enables external cache to speed up memory access.

Quick Power On Self Test

This category 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 category determines which drive computer searches first for the disk operating system. Default value is A, C.

Swap Floppy Drive

When this category 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 so the end user can use the arrow keys on both the numeric keypad and the keyboard.

Boot Up System Speed

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

Gate A20 Option

When this category sets to Normal, the A20 signal is controlled by keyboard controller. When this category sets to Fast, the A20 signal is controlled by post 92 or chipset specific method.

Security Option

This category 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.

PS/2 Mouse Control Function

This category to set the PS/2 mouse be used or not. If there a PS/2 mouse attached to your system, this category must be enabled, if not, please disabled this category to release IRQ12 for PCI device.

PCI VGA Palette Snoop

This category must be set to enabled if there is any ISA VGA adapter card installed in the system, and disabled if there is any PCI VGA adapter card installed in the system.

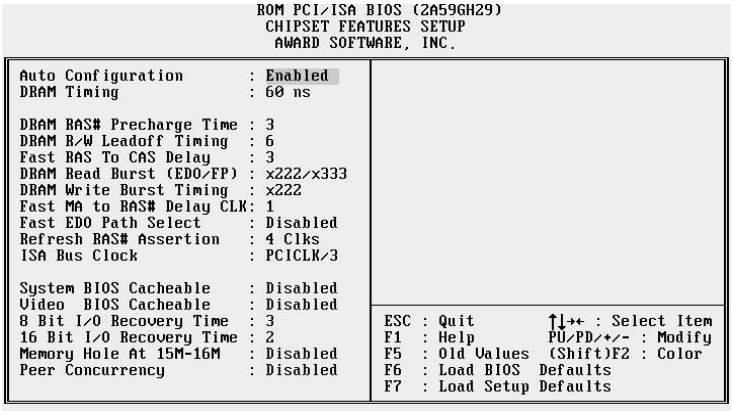
OS Select For DRAM > 64MB

If there over 64MB memory on your system, please set this category to **OS2** for total memory detection under OS/2 operating system, otherwise set to **Non-OS2**.

Video BIOS Shadow/XXXXX-XXXXX Shadow

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

Chipset Features Setup



Auto Configuration

This category auto configure categories of DRAM RAS# Precharge time, DRAM R/W Leadoff Timing, Fast RAS to CAS Delay, DRAM Read Burst, DRAM Write Burst Timing, Fast MA to RAS# Delay CLK, Fast EDO Path Select, Refresh RAS# Assertion, ISA Bus Clock by different system clock.

DRAM Timing

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

DRAM RAS# Precharge Time

This category set the DRAM RAS Precharge Timing. The options are ***4*** and ***3*** CLKs.

DRAM R/W Leadoff Timing

This category set the RAS DRAM Read/Write Leadoff timings for page/ row miss cycles. The options are ***7/6*** and ***6/5*** CLKs.

Fast RAS To CAS Delay

This category set the DRAM RAS to CAS Delay to controls the DRAM page miss and row miss leadoff timings. The options are ***3*** and ***2*** CLKs.

DRAM Read Burst (EDO/FP)

This category 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 category 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 MA to RAS# Delay CLK

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

Fast EDO Path Select

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

Refresh RAS# Assertion

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

SDRAM (CAS Lat/RAS-to-CAS)

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

ISA Clock

This category allows the user to set ISA clock that divide from PCI clock by 3 or by 4. For example, if 166MHz Pentium processor is used, PCI clock will be 33MHz, ISA Clock will be 8.25MHz when PCI clock divided by 4, and 11MHz when PCI clock divided by 3.

System BIOS Cacheable

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

Video BIOS Cacheable

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

8 Bit I/O Recovery Time

This category is used to add additional recovery delay between CPU or PCI master originated 8-bit I/O cycles to the ISA Bus.

16-Bit I/O Recovery Time

This category is used to add additional recovery delay between CPU or PCI master originated 16-bit I/O cycles to the ISA Bus.

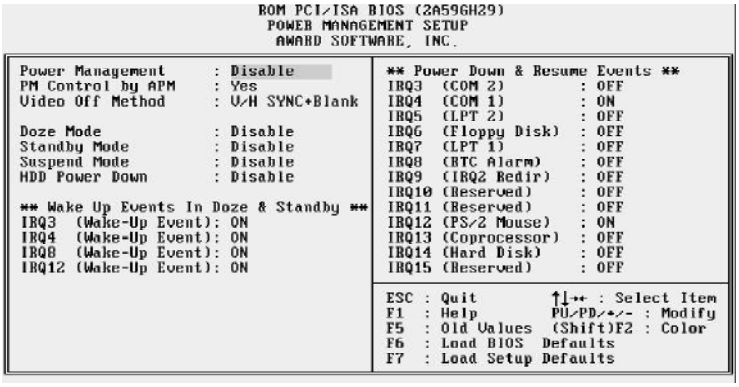
Memory Hole At 15M-16M

This category is used to enable a memory hole in DRAM space. CPU cycles matching an enabled hole are passed on to PCI. Note that a selected hole is not remapped.

Peer Concurrency

This category is used to defined PCI Concurrency is "***Enable***" or "***Disable***" setting.

Power Management Setup



Power Management

This category determines the options of the power management function. Default value is Disable. The following pages tell you the options of each item & describe the meanings of each options.

Disabled	Global Power Management will be disabled.	**User**
Define	Users can configure their own power management.	**Min**
Saving	Predefined timer values are used such that all timers are in their maximum value.	**Max**
Saving	Predefined timer values are used such that all timers minimum value.	

PM Control by APM

If this category set to No, system BIOS will ignore APM when power is managing the system. If this category 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

Blank Screen	The system BIOS will only blanks off the screen when disabling video.	**V/H SYN** In addition to Blank Screen, BIOS will also turn
+Blank	off the V-SYNC & H-SYNC signals from VGA cards to monitor.	**DPMS**

This function is enabled for only the VGA card supporting DPM.

Doze Mode

1 Min~1 Hr Defines the continuous idle time before the system entering DOZE mode. **Disable**
System will never enter DOZE mode.

Standby Mode

1 Min~1 Hr Defines the continues idle time before the system entering STANDBY mode. **Disable**
System will never enter STANDBY mode.

Suspend Mode

1 Min~1 Hr Defines the continuous idle time before the system entering SUSPEND mode. **Disable**
System will never enter SUSPEND mode.

HDD Power Down

1~15Min Defines the continuous HDD idle time before the HDD entering power saving mode (motor off). **Suspend**
BIOS will turn the HDD's motor off when system is in SUSPEND mode. **Disable** HDD's motor will not off.

IRQ3, 5, 8, 12 **Wake-Up Events In Doze & Standby**

If this category sets to Off, the IRQ3, 5, 8 or 12 event's activity will not reactivates the system from Doze and Standby mode.

If this category sets to On, the IRQ3, 5, 8 or 12 event's activity will reactivate system from Doze and Standby mode.

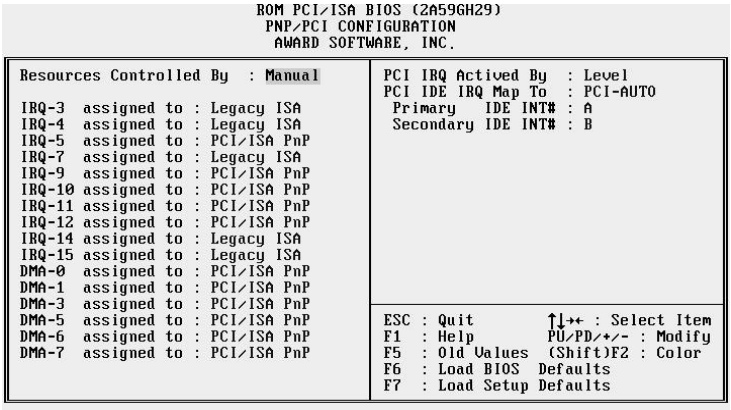
*Power Down & Resume Events **

If these categories sets to Off, the event's activity will not be monitored to enter power management.

If this category sets to On, the event's activity will be monitored to enter power management.

COM Post Accessed LPT Ports Accessed Drive Ports Accessed IRQ 3 (COM 2) IRQ 4 (COM1) IRQ 5 (LPT 2) IRQ 6 (Floppy Disk) IRQ 7 (LPT 1) IRQ 8 (RTC Alarm) IRQ 9 (IRQ 2 Redir) IRQ 10 (Reserved) IRQ 11 (Reserved) IRQ 12 (PS/2 Mouse) IRQ 13(Copro-) IRQ 14 (Hard Disk) IRQ 15 (Reserved)

PCI Configuration Setup



Resources Controlled By

The options in these categories are Auto, Manual.

Auto : BIOS will auto configurate system IRQs and DMAs resources.

Manual : System IRQs and DMAs are adjusted by the user.

IRQ 3 assigned to

The system BIOS will assign IRQ 3 to**legacy ISA** or **PCI/ISA PnP**.

IRQ3 default assign to legacy ISA for COM2.

IRQ 4 assigned to

The system BIOS will assign IRQ 4 to**legacy ISA** or **PCI/ISA PnP**.

IRQ4 default assign to legacy ISA for COM1.

IRQ 5 assigned to

The system BIOS will assign IRQ 5 to**legacy ISA** or **PCI/ISA PnP**.

IRQ5 default assign to PCI/ISA PnP for PCI or ISA PnP devices.

IRQ 7 assigned to

The system BIOS will assign IRQ 7 to**legacy ISA** or **PCI/ISA PnP**.

IRQ7 default assign to legacy ISA for LPT1.

IRQ 9 assigned to

The system BIOS will assign IRQ 9 to**legacy ISA** or **PCI/ISA PnP**.

IRQ9 default assign to PCI/ISA PnP for PCI or ISA PnP devices.

IRQ 10 assigned to

The system BIOS will assign IRQ 10 to**legacy ISA** or **PCI/ISA PnP**.

IRQ10 default assign to PCI/ISA PnP for PCI or ISA PnP devices.

IRQ 11 assigned to

The system BIOS will assign IRQ 11 to**legacy ISA** or **PCI/ISA PnP**.

IRQ11 default assign to PCI/ISA PnP for PCI or ISA PnP devices.

IRQ 12 assigned to

The system BIOS will assign IRQ 12 to**legacy ISA** or **PCI/ISA PnP**.

IRQ12 default assign to PCI/ISA PnP for PCI or ISA PnP devices. Since PS/2 mouse uses the same IRQ, if there are a PS/2 mouse on your system, assign IRQ12 to legacy ISA to avoid system conflict.

IRQ 14 assigned to

The system BIOS will assign IRQ 14 to**legacy ISA** or **PCI/ISA PnP**.

IRQ14 default assign to legacy ISA for primary IDE controller.

IRQ 15 assigned to

The system BIOS will assign IRQ 15 to**legacy ISA** or **PCI/ISA PnP**.

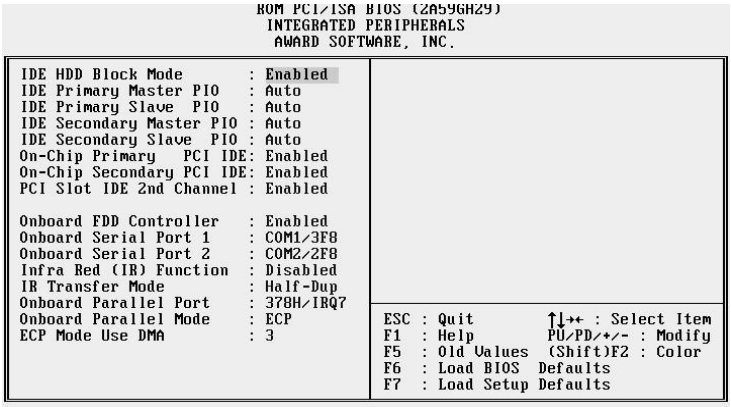
IRQ15 default assign to legacy ISA for secondary IDE controller.

DMA-0, 1, 3, 5, 6, 7 assigned to

The system BIOS will assign DMAs to**legacy ISA** or **PCI/ISA PnP**.

DMA 0, 1, 3, 5, 6 and 7 channel default assign to PCI/ISA PnP.

Integrated Peripherals



IDE HDD Block Mode

This category 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 PIO

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

IDE Primary/Secondary Slave PIO

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

On-Chip Primary PCI IDE

This category is used to defined on chip Primary PCI IDE controller is "***Enable***" or "***Disable***" setting.

On-Chip Secondary PCI IDE

This category is used to defined on chip Secondary PCI IDE controller is "***Enable***" or "***Disable***" setting.

PCI Slot IDE 2nd channel

This category is used to defined add-on PCI IDE secondary controller is "***Enable***" or "***Disable***" setting.

Onboard FDC Control

This category 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 Serial Port 1/Port 2

This category is used to define onboard serial port 1/Port2 to ***COM1/3F8H***, ***COM2/2F8H***, ***COM3/3E8H***, ***COM4/2E8H*** or ***Disabled***.

Infra Red (IR) Function

HOT-555 main board support IrDA(HPSIR) and Amplitudes Shift Keyed IR(ASKIR) infrared through COM 2 port. This category specifies onboard Infra Red mode to ***HPSIR***, ***ASKIR*** or ***Disabled***.

IR Transfer Mode

This category specifies onboard infrared transfer mode to ***full-duplicate*** or ***half-duplicate***.

Onboard Parallel Port

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

Onboard Printer Mode

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

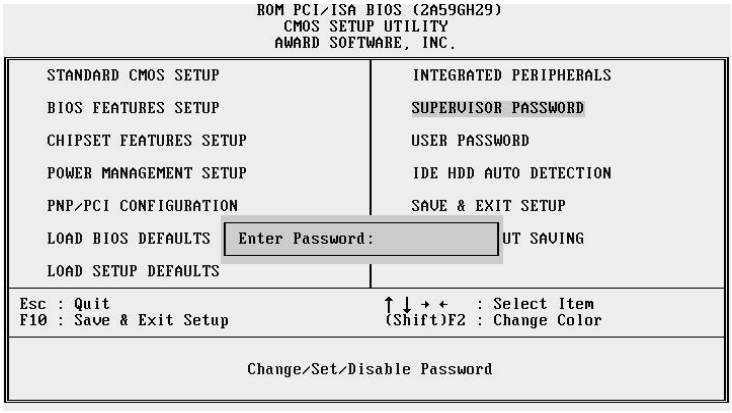
ECP Mode Use DMA

This category specifies DMA (Direct Memory Access) channel when ECP device is in use. The options are DMA ***1*** and DMA ***3.***

This category 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. Thus 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 safe record of your password. If you've forgotten or loosed the password, the only way to access the system is to clear CMOS memory, please refer to "Clear CMOS" or "Clear Password" section.