# PA-2000

## MAIN BOARD
## User's Guide


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# HANDLING PRECAUTIONS

→ **Static electricity may cause damage to the integrated circuits on the mainboard. Before handling any mainboard outside of its protective packaging, ensure that there is no static electric charge in your body.**
**Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.**

Observe any or all of these basic precautions when handling the mainboard or other computer components:

- Wear a static wrist strap which fits around your wrist and is connected to a natural earth ground.
- Touch a grounded or anti-static surface or a metal fixture such as a water pipe.
- Avoid contact with the components on add-on cards, boards and modules and with the "**gold finger**" connectors plugged into the expansion slot. It is best to handle system components by their mounting bracket.

Above methods either prevent static build-up or cause it to be discharged properly.





# Table of Contents

# ABOUT THIS MANUAL

This manual is designed to guide you and facilitate your use of the PA-2000 mainboard. It is divided into chapters. The chapters contain the main body of information normally referred to by users.

***Chapter 1*** gives an overview and introduces the basic parts and features of the mainboard.

***Chapter 2*** gives information on the jumper and connector settings on the mainboard.

***Chapter 3*** provides information on the memory subsystem of the mainboard in the form of SIMMs and Cache memory and describes how you can upgrade memory.

***Chapter 4*** briefly explains the mainboard's BIOS system Setup in general and tells you how to run it and change the system configuration settings.

**NOTE : The material in this manual is for information only and is subject to change without notice. We reserve the right to make changes in the product design without reservation and without notification to its users. We shall not be liable for technical or editorial omissions made herein; nor for incidental or consequential damages resulting from the furnishing, performance, or use of this material.**

Chapter 1

# Overview

The unsurpassed capabilities of the P54C 3.3V CPU combined with Intel's PCI Bus and the advanced features of VIA's VT82C570MV™ chipset make the PA-2000 mainboard the most powerful platform around. The incorporated enhanced PCI IDE support allows the installation of four host interface devices including a CD-ROM drive or a tape streamer. The two serial/one parallel I/O controller and PCI IDE controller chips are onboard to provide you more convenient connection choices for various peripheral devices. The mainboard supports an optional EDO (Extended Data Output) page mode DRAM function pushing overall mainboard performance to a new level.

This chapter gives you a brief overview of this mainboard, providing basic information on its major parts and components.

## Specifications

The PA-2000 mainboard comes with the following features:

- Intel P54C 3.3V CPU in a 320-pin ZIF socket.
- VIA VT82C570MVchipset for high performance.
- Supports 256KB/512KB standard 3.3V or mix voltage SRAM direct-mapped write-back cache memory.
- Supports 8 up to 192MB RAM in three banks using 72-pin SIMMs; provides standard or EDO page mode DRAM operation.
- Shadowing of system and Video BIOS to speed up access.
- Award BIOS.
- Supports 128KB Flash ROM.
- Built-in VIA 82C416MV™ provides internal keyboard controller, real-time clock and clock generator.

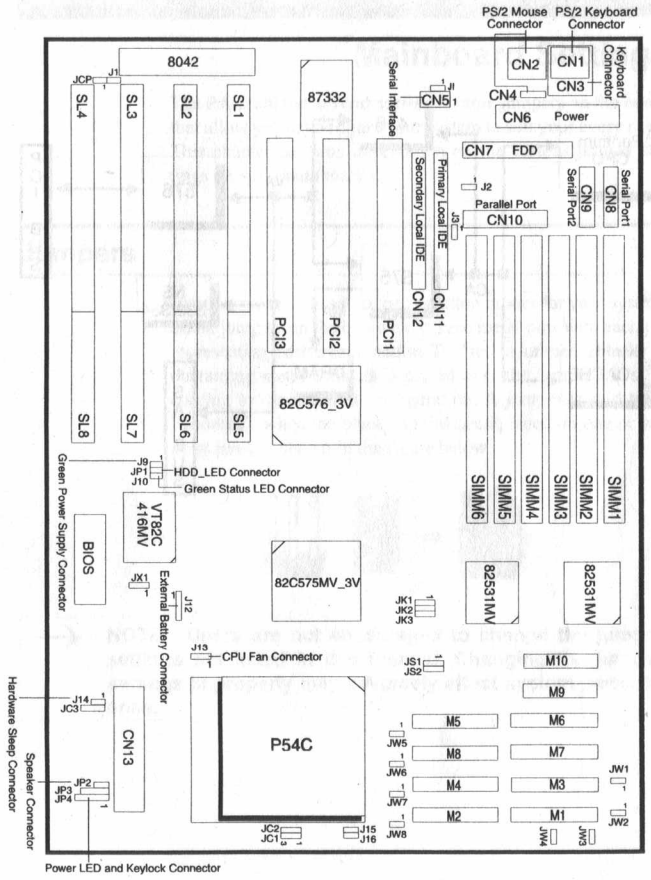
- Four 16-bit ISA expansion slot and three 32-bit PCI Bus master slots.
- Onboard NS 332/334™ I/O chipset supports two serial ports, one parallel port and FDC.

→ **NOTE : When plugging your processor into the CPU (ZIF) socket, make sure that the pin 1 matches that of the CPU socket.**





## Mainboard Layout

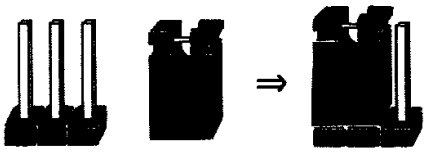


# Mainboard Settings

The PA-2000 has several user-adjustable jumpers on the board that allow you to configure your system to suit your every need. This chapter contains information on the various jumper settings on your mainboard.

## Jumpers

Jumpers are used to select the operation modes for your system. Some jumpers on the board have three metal pins with each pin representing a different function. To "**set**" a jumper, a black cap containing metal contacts is placed over the jumper pin/s according to the required configuration. A jumper is said to be "**shorted**" when the black cap has been placed on one or two of its pins, as shown in the figure below:



→ **NOTE : Users are not encouraged to change the jumper settings not listed in this manual. Changing the jumper settings improperly may adversely affect system performance.**

## Jumper Setting for CPU Clock

| CPU Speed | External Clock | JK1 | JK2 | JK3 | CPU Clock Rate | | |
|---|---|---|---|---|---|---|---|
| | | | | | Int. Multiple | JC2 | JC3 |
| 133 MHz | **66 MHz** | 3 2 1 | 3 2 1 | 3 2 1 | 2 x Ext. | 3 2 1 | 3 2 1 |
| 120 MHz | **60 MHz** | 3 2 1 | 3 2 1 | 3 2 1 | 2 x Ext. | 3 2 1 | 3 2 1 |
| 100 MHz | **66 MHz** | 3 2 1 | 3 2 1 | 3 2 1 | 1.5 x Ext. | 3 2 1 | 3 2 1 |
| 90 MHz | **60 MHz** | 3 2 1 | 3 2 1 | 3 2 1 | 1.5 x Ext. | 3 2 1 | 3 2 1 |
| 75 MHz | **50 MHz** | 3 2 1 | 3 2 1 | 3 2 1 | 1.5 x Ext. | 3 2 1 | 3 2 1 |

| ***Bus / CPU Clock Ratio*** | *JC2* | *JC3* |
|---|---|---|
| 2 : 3 | 3 2 1 | 3 2 1 |
| 1 : 2 | 3 2 1 | 3 2 1 |
| 1 : 3 | 3 2 1 | 3 2 1 |
| 2 : 5 | 3 2 1 | 3 2 1 |

## Jumper Setting for I/O

| | | |
|---|---|---|
| *J1* | | ***Display Type*** |
| | ▪▪ | Mono/EGA/VGA |
| | ▪▪ | CGA |
| *JCP* | | ***Password Clear*** |
| | ▪▪ | Enabled |
| | ▪▪ | Disabled (Default) |
| *JI* | | ***NS87332/87334*** |
| | ▪▪ | IR serial port (for NS334) |
| | ▪▪ | COM Port (for NS332) (Default) |





## Jumper Setting for System

| | ***CPU Voltage*** | | |
|---|---|---|---|
| | Others | 3.3 V | 3.5 V (Default) |
| *J15* | ▪▪ | ▪▪ | ▪▪ |
| *J16* | ▪▪ | ▪▪ | ▪▪ |

| | | |
|---|---|---|
| *JC1* | | ***Internal Write-Back/ Write-Through Cache*** |
| | 3 2 1 ▪▪▪ | Write-Back (Default) |
| | 3 2 1 ▪▪▪ | Write-Through |
| *JP2* | | ***Hardware Reset*** |
| | ▪▪ | Enabled |
| | ▪▪ | Disabled (Default) |
| *J17* | | ***Programmable Flash EPROM Type*** |
| | 1 2 3 ▪▪▪ | Intel 28F001BX-T |
| | 1 2 3 ▪▪▪ | SST 29EE010 (Default) |

## Connector Pin Definitions

| Connector | Pin No. | Definitons |
|---|---|---|
| J9 (Green Power Supply Connector) | 1 | +5V |
| | 2 | GND |
| This connector is a green power 2-pin disable outlet connector. When the system enter the suspend mode, the monitor will be left blank. | | |

| Connector | Pin No. | Definitons |
|---|---|---|
| J13 (CPU Fan Connector) | 1 | GND |
| | 2 | +12V |
| | 3 | GND |
| This connector can be set by a 3-pin housing connector. | | |



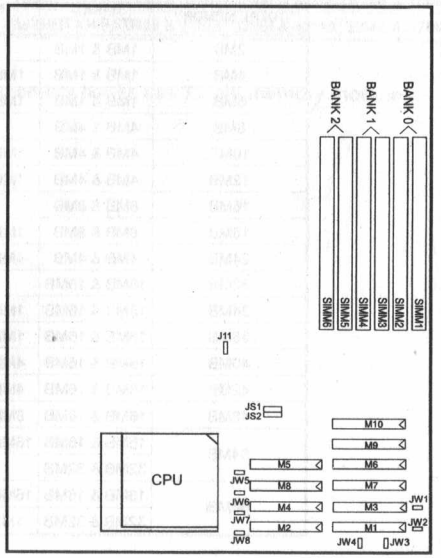
*Chapter 3*

# System Memory

The PA-2000 can be equipped with the necessary memory for running all your applications. Memory comes in the form of DRAM (SIMMs) and cache SRAM. This chapter describes these two types of memory and gives instructions on how to install each type on the mainboard.

## Memory Locations

The board layout below shows the locations of the DRAM memory banks and the cache SRAM:



# Installing DRAM

## SIMM Banks

The PA-2000 can accommodate onboard memory from 2 to 192MB using SIMMs (Single-In-Line Memory Modules). The mainboard has three memory banks — Bank 0, Bank 1, and Bank 2. Each bank has two SIMM sockets which can accept either a 1MB, 4MB, 8MB, 16MB or 32MB SIMM in each socket.

## DRAM Configuration

Memory can be installed in a variety of configurations, as shown in the following table:

| TOTAL MEMORY | BANK 0 (72-PIN x 2) | BANK 1 (72-PIN x 2) | BANK 2 (72-PIN x 2) |
|---|---|---|---|
| 2MB | 1MB & 1MB | | |
| 4MB | 1MB & 1MB | 1MB & 1MB | |
| 6MB | 1MB & 1MB | 1MB & 1MB | 1MB & 1MB |
| 8MB | 4MB & 4MB | | |
| 10MB | 4MB & 4MB | 1MB & 1MB | |
| 12MB | 4MB & 4MB | 1MB & 1MB | 1MB & 1MB |
| 16MB | 8MB & 8MB | | |
| 18MB | 8MB & 8MB | 1MB & 1MB | |
| 24MB | 4MB & 4MB | 4MB & 4MB | 4MB & 4MB |
| 32MB | 16MB & 16MB | | |
| 34MB | 16MB & 16MB | 1MB & 1MB | |
| 36MB | 16MB & 16MB | 1MB & 1MB | 1MB & 1MB |
| 40MB | 16MB & 16MB | 4MB & 4MB | |
| 42MB | 16MB & 16MB | 4MB & 4MB | 1MB & 1MB |
| 48MB | 16MB & 16MB | 8MB & 8MB | |
| 64MB | 16MB & 16MB | 16MB & 16MB | |
| | 32MB & 32MB | | |
| 66MB | 16MB & 16MB | 16MB & 16MB | 1MB & 1MB |
| | 32MB & 32MB | 1MB & 1MB | |





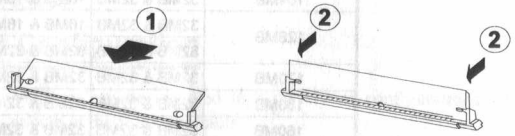
| TOTAL MEMORY | BANK 0 (72-PIN x 2) | BANK 1 (72-PIN x 2) | BANK 2 (72-PIN x 2) |
|---|---|---|---|
| 68MB | 32MB & 32MB | 1MB & 1MB | 1MB & 1MB |
| 72MB | 16MB & 16MB | 16MB & 16MB | 4MB & 4MB |
| | 32MB & 32MB | 4MB & 4MB | |
| 74MB | 32MB & 32MB | 4MB & 4MB | 1MB & 1MB |
| 80MB | 32MB & 32MB | 4MB & 4MB | 4MB & 4MB |
| 96MB | 16MB & 16MB | 16MB & 16MB | 16MB & 16MB |
| | 32MB & 32MB | 16MB & 16MB | |
| 98MB | 32MB & 32MB | 16MB & 16MB | 1MB & 1MB |
| 104MB | 32MB & 32MB | 16MB & 16MB | 4MB & 4MB |
| 128MB | 32MB & 32MB | 16MB & 16MB | 16MB & 16MB |
| | 32MB & 32MB | 32MB & 32MB | |
| 130MB | 32MB & 32MB | 32MB & 32MB | 1MB & 1MB |
| 136MB | 32MB & 32MB | 32MB & 32MB | 4MB & 4MB |
| 160MB | 32MB & 32MB | 32MB & 32MB | 16MB & 16MB |
| 192MB | 32MB & 32MB | 32MB & 32MB | 32MB & 32MB |

→ **NOTE : All memory banks use 72-pin memory modules.**

## Installation Instructions

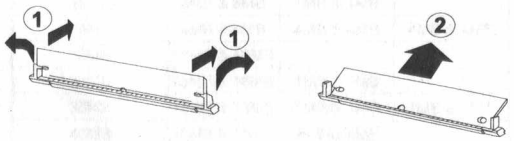
→ **NOTE : Always observe static electricity precautions. See "Handling Precautions" at the start of this manual.**

1. Locate the SIMM banks on the mainboard.
2. Insert the SIMM edge connector at a 90-degree angle onto the socket.




3. Carefully push the SIMM down and back into the socket until the retaining clips of the socket snap, holding the SIMM in place. The holes in the SIMM should match the pins on the socket's retaining clips.

To remove the SIMM/s, pull the retaining latch on both ends of the socket and reverse the procedure above.








## Cache Memory

The PA-2000 can accept standard 3.3V or mix voltage cache SRAM of 256/512KB in DIP packages. Every time the CPU wants to write data to the external memory, if the location in SRAM is a "**hit**", it writes this data to the cache RAM directly, not to the DRAM.

→ **NOTE : Use the correct chips for the amount of cache memory you want to add. Install both the correct Cache and Tag SRAM. Alter RAM type is the same as Tag RAM.**

## Installing Cache Memory

→ **NOTE : Always observe static electricity precautions. See "Handling Precautions" at the start of this manual.**

If you do not have the confidence to make the installation, better consult a service technician for assistance.

1. Locate the cache memory on the mainboard.
2. Be guided by the Cache SRAM settings depending on your desired SRAM configuration.

Correct orientation of the chip is necessary for the cache to operate properly. Normally, the chips have either a curved notch or a dot. This marker on the chip must be matched to the marker on the socket for correct alignment.

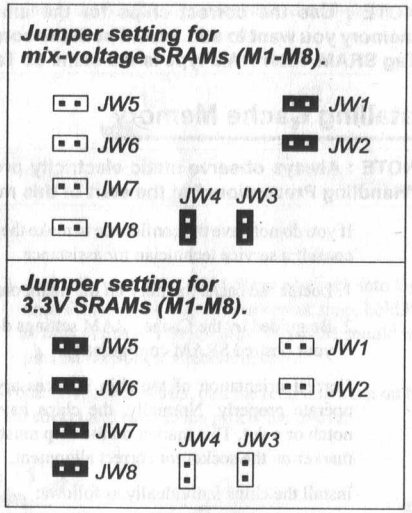
Install the chips individually as follows:

3. Align the chip with the marker on the socket. Press the chip onto the socket, ensuring that the pins on the chip are aligned with the corresponding connections on the socket.
4. Press the chip completely into the socket so that the pins are properly seated.

## Cache SRAM Specifications and Settings

### Using Various Voltage SRAM

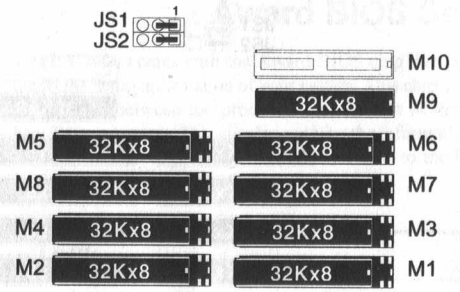
Cache sockets M1 to M8 can take 3.3V or mix-voltage SRAMs. However, cache socket M9 and M10 can only take 5.0V SRAMs. The jumper settings are listed below.



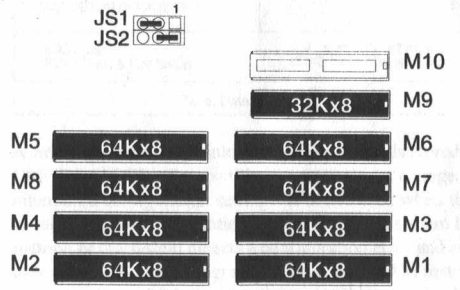




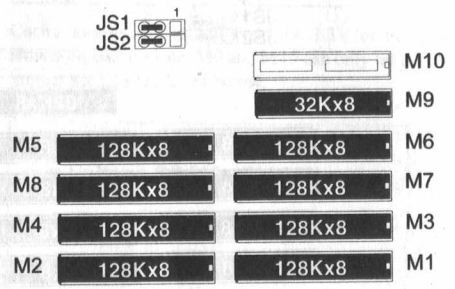

### 256KB Cache SRAM




### 512KB Cache SRAM



### 1MB Cache SRAM



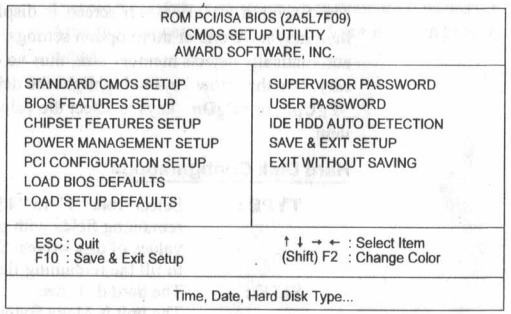





# Award BIOS Setup

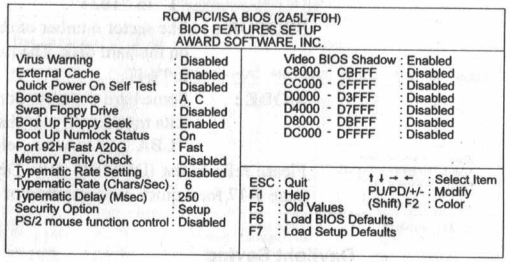
The PA-2000 comes with the Award BIOS chip that contains the ROM Setup information of your system. This chip serves as an interface between the processor and the rest of the mainboard's components. This chapter explains the information contained in the Setup program and tells you how to modify the settings according to your system configuration.

## CMOS Setup Utility




A Setup program, built into the system BIOS, is stored in the CMOS RAM. This Setup utility program allows changes to the mainboard configuration settings. It is executed when the user changes system configuration; the user changes system backup battery; or the system detects a configuration error and asks the user to run the Setup program. As power-on RAM testing, the message "**Press DEL to enter Setup (JCP).**" appears. Use the arrow keys to select and press <**Enter**> to run the selected program.

# BIOS Features Setup




### Virus Warning

When enabled, assigns the BIOS to monitor the master boot sector and the DOS boot sector of the hard disks.

The options are: Enabled, Disabled (Default)

### External Cache

Supports an optional cache SRAM.

The available options are: Enabled (Default), Disabled.

### Quick Power On Self Test

Allows the BIOS to bypass the extensive memory test.

The options are: Enabled, Disabled (Default).

### Boot Sequence

Allows the system BIOS to first try to boot the operating system from the first hard disk drive, drive C:.

The options are: A, C (Default); C, A.





### Swap Floppy Drive

Allows you to switch the order in which the system accesses the floppy drives.

The options are: Enabled, Disabled (Default).

### Boot Up Floppy Seek

Assigns the BIOS to perform floppy disk drive tests by issuing the time-consuming seek commands.

The options are: Enabled (Default), Disabled.

### Boot Up Numlock Status

Allows the BIOS to automatically enable the Num Lock function when the system boots.

The options are: On (Default), Off.

### Port 92H Fast A20G

When enabled, allows the A20G bus line signal generated from the chipset VT82C575MV PC/AT to directly pass to port 92H, instead of the keyboard controller. It will speed up the system performance.

The options are: Fast (Default),

### Memory Parity Check

Allows the DRAM to execute parity bit check.

The options are: Disabled (Default), Enabled.

### Typematic Rate Setting

Allows you to change the typematic repeat rate.

The options are: Disabled (Default), Enabled.

### Typematic Rate (Chars/Sec)

The rate that the keyboard keys repeat the character when the key is held down.

The options are: 6 (Default), 8, 10, 12, 15, 20, 24, 30.

### Typematic Delay (Msec)

The keyboard keys are "**typematic**," means that when a keyboard key is held down, the character repeats until the key is released. You can select a delay time before the character repeats.

The options are: 250 (Default), 500, 750, 1000 millisecond.

### Security Option

Allows you to set the security level when booting up the system.

The available options are: Setup (Default), System.

### PS/2 mouse function control

When enabled, allows you to release IRQ 12 for using the PS/2 mouse .

The options are: Enabled, Disabled (Default)

### Video BIOS Shadow

Allows the BIOS to copy the video ROM code of the add-on video card to system memory for faster access.

The options are: Enabled (Default), Disabled.

### C8000-CBFFF to DC000-DFFFF Shadow

Allows the BIOS to copy the BIOS ROM code of the add-on card to system memory for faster access. It may improve the performance of the add-on card.

Some add-on cards will not function properly if its BIOS ROM code is shadowed. To use these options correctly, you need to know the memory address range used by the BIOS ROM of each add-on card.

The available options are: Enabled, Disabled (Default).





## Chipset Features Setup

ROM PCI/ISA BIOS (2A5L7F0H)
CMOS SETUP UTILITY
CHIPSET FEATURES SETUP

| | | | |
|---|---|---|---|
| Decoupled Refresh | : Enabled | DRAM for BANK 0 | : Standard |
| Video BIOS Cacheable | : Enabled | DRAM for BANK 1 | : Standard |
| System BIOS Cacheable | : Enabled | DRAM for BANK 2 | : Standard |
| Memory Hole At 15Mb Addr. | : Disabled | Onboard IDE 2nd Port | : Enable |
| Cache Timing Control | : Fast | Onboard FDC Control | : Enable |
| DRAM Timing Coptrol | : Fast | Onboard Serial Port 1 | : COM1 /3F8H |
| SRAM Tag/Alt Bit Config. | : 7 Tags + ALT | Onboard Serial Port 2 | : COM2 /2F8H |
| | | Onboard Parallel Port | : 378H/IRQ7 |
| Onchip IDE first channel | : Enabled | Onboard Printer Mode | : Compatible |
| IDE HDD Block Mode | : Enabled | ECP Use DMA Channel No. | : 3 |
| IDE Primary Master PIO | : Auto | | |
| IDE Primary Slave PIO | : Auto | | |

| | | |
|---|---|---|
| ESC : Quit | ↑ ↓ → ← | : Select Item |
| F1 : Help | PU/PD/+/- | : Modify |
| F5 : Old Values | (Shift) F2 | : Color |
| F6 : Load BIOS Defaults | | |
| F7 : Load Setup Defaults | | |

### Decoupled Refresh

The onboard DRAM can be decoupled from ISA bus memory device so that the processor can re-access the onboard DRAM without waiting for the completion of ISA bus memory refresh.

Disabled it if you use ISA type ET-4000 VGA card.

The available options are: Enabled (Default), Disabled.

### Video BIOS Cacheable

Allows the system to use the video BIOS code from the cache instead of the slower DRAMs or ROMs.

The available options are: Enabled (Default), Disabled.

### System BIOS Cacheable

Allows the ROM area F000H-FFFFH cacheable as cache controller is enabled.

The available options are: Enabled (Default), Disabled.

### Memory Hole At 15MB Addr.

When enabled, every time the processor accesses the 15~16MB address, memory hole at the 15MB address will be relocated to the 15~16MB address range of the ISA cycle. When disabled, it will let the memory hole at the 15MB address decode be treated as a DRAM cycle when processor accesses the 15~16MB address.

The available options are: Enabled, Disabled (Default).

### Cache Timing Control

Allows you to adjust the access speed of VT82C575MV to external cache.

The options are: Normal, Fast, Turbo (Default).

### DRAM Timing Control

Allows you to speed up the data access of VT82C575MV.

The options are: Normal, Fast (Default).

### SRAM Tag/Alt Bit Config.

Allows the alter bit to check whether or not the external cache writes back data to main memory.

The options are: 7Tags+ALT (Default), 10Tags+ALT, 8 Tags.

### Onchip IDE first channel

When enabled, allows the IDE drive to use the PCI IDE first channel.

The options are: Enabled (Default), Disabled.

### IDE HDD Block Mode

Allows the system to execute read/write requests to hard disk in block mode.

The options are: Enabled (Default), Disabled.





### IDE Primary Master PIO

Allows you to select first PCI IDE channel of the primary master hard disk mode or to detect it by the BIOS.

The available options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

### IDE Primary Slave PIO

Allows you to select the first PCI IDE channel of the primary slave hard disk mode or to detect it by the BIOS.

The available options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

### DRAM for BANK 0-2

Select "**EDO**" when you use EDO DRAMs.

The options are: Standard (Default), EDO.

### Onboard IDE 2nd Port

Allows you to use onboard IDE controller.

The options are: Enabled (Default), Disabled.

### Onboard FDC Control

Allows you to enable the floppy disk controller (FDC).

The options are: Enabled (Default), Disabled.

### Onboard Serial Port 1

Enable it if serial port 1 uses the onboard I/O controller. If some I/O card to be installed, COM 3 and COM4 may be needed. Select COM 3 or COM 4 by this feature.

The options are: COM1/3F8H (Default), COM2/2F8H, COM3/3E8H, COM4/2E8H.

### Onboard Serial Port 2

Enable it if serial port 2 uses the onboard I/O controller. If some I/O card to be installed, COM 3 and COM4 may be needed. Select COM 3 or COM 4 by this feature.

The options are: COM1/3F8H, COM2/2F8H (Default), COM3/3E8H, COM4/2E8H.

### Onboard Parallel Port

Enable it if parallel port uses the onboard I/O controller.

The options are: Disabled, 278H/IRQ5, 3BCH/IRQ7, 378H/IRQ5, 378H/IRQ7 (Default).

### Onboard Printer Mode

Allows you to connect with advanced printer I/O mode.

The options are: EPP, ECP, Standard (Default).

### ECP Use DMA Channel No.

Allows you to adjust the DMA channel number 3 or 1 for the ECP mode of printer.

The options are: 1, 3 (Default).





## Power Management Setup

```
ROM PCI/ISA BIOS (2A5L7F0H)
CMOS SETUP UTILITY
POWER MANAGEMENT SETUP

Power Management      : Disabled        IRQ3 Activity   : Primary
Doze Timer            :  2 min          IRQ4 Activity   : Primary
Suspend Timer         :  8 min          IRQ5 Activity   : Primary
Suspend Mode          : Enabled         IRQ7 Activity   : Primary
HDD Power Management  : Disabled        IRQ8 Activity   : Secondary
VGA Activity Wakeup   : Disabled        IRQ10 Activity  : Primary
Video Off Method      : DPMS            IRQ11 Activity  : Primary
                                        IRQ12 Activity  : Primary

                                  ESC: Quit          ↑↓→←  : Select Item
                                  F1  : Help         PU/PD/+/- : Modify
                                  F5  : Old Values   (Shift) F2 : Color
                                  F6  : Load BIOS Defaults
                                  F7  : Load Setup Defaults
```

### Power Management

Allows you to use Power Management features.

The available options are: Enabled, Disabled (Default).

### Doze Timer

Processor speed will slowdown and enter "**Doze Mode**" assuming there is no operation during the selected period. Normal processor speed is resumed by pressing any key.

The options are: 8 sec, 32 sec, 2 min (Default), 8 min, 16 min.

### Suspend Timer

VGA display will blank out and enter "**Suspend Mode**" if there is no operation during the selected period.

The available options are: 2, 8 (Default), 16 and 32 min.

### Suspend Mode

Disabled it to render the Suspend Timer inoperative.

The options are: Enabled (Default), Disabled.

### HDD Power Management

Allows the HDD spindle motor to turn off after a certain time period.

The options are: Disabled (Default), 20, 30, 45, 60 min.

### VGA Activity Wakeup

Allows the Doze Timer to count when no activity is detected on the VGA display. If disable it, the Doze Timer counts immediately even VGA display still acts.

The available options are: Enabled, Disabled (Default).

### Video Off Method

The option "**V/H SYNC+Blank**" allows the BIOS to blank off screen display by turning off the V-Sync and H-Sync signals sent from add-on VGA card. "**DPMS Supported**" allows the BIOS to blank off screen display by your add-on VGA card which supports DPMS (Display Power Management Signaling function.) "**Blank Screen**" allows the BIOS to blank off screen display by turning off the red-green-blue signals.

The options are: DPMS Support (Default), V/H SYNC+Blank, Blank Screen.

### IRQ# Activity

When "**Primary**", if the BIOS detects no IRQ# activity during the time specified by the Sleep Mode timer, the processor will power down. If "**Secondary**", the processor will power down after any IRQ activity.

The options are: Primary, Secondary.

The default values of IRQ3, 4, 5, 7, 10, 11, 12 are: Primary.

The default value of IRQ8 is: Secondary.





## PCI Configuration Setup

```
                ROM PCI/ISA BIOS (2A5L7F0H)
            PCI CONFIGURATION SETUP
            AWARD SOFTWARE, INC.

PnP BIOS Auto-Config  : Enabled        CPU to PCI Write Buffer  : Enabled
Slot 1 Using INT#     : Auto           PCI Master Write Buffer  : Enabled
Slot 2 Using INT#     : Auto           PCI Master Prefetch      : Enabled
Slot 3 Using INT#     : Auto           PCI Master Burst Read    : Enabled
                                       PCI Master Burst Write   : Enabled
                                       PCI Dynamic Decoding     : Enabled
PCI IRQ Activated By  : Level          PCI Dynamic Bursting     : Enabled
PCI IDE IRQ Map To    : PCI-AUTO       PCI Byte Merge           : Disabled
  Primary     IDE INT# : A             Local Memory Detect Point : Fast
  Secondary   IDE INT# : B             PCI Burst                : Disabled
                                       PCI Master 0 WS Write    : Enabled

                                   ESC: Quit          ↑ ↓ → ←  : Select Item
                                   F1 : Help          PU/PD/+/- : Modify
                                   F5 : Old Values    (Shift) F2 : Color
                                   F6 : Load BIOS Defaults
                                   F7 : Load Setup Defaults
```

### PnP BIOS Auto-Config

When enabled, the available IRQs used on the ISA slots are configured automatically by the BIOS. The options are: Enabled, Disabled (Default).

### Slot 1-3 Using INT#

Allows the BIOS to automatically detect which interrupt is used by the card in selected PCI slot. The options are: Auto (Default), A, B, C, D.

### Available IRQ

Allows the BIOS to assign an available IRQ if the attached PCI device needs IRQ to access the mainboard. The options are: NA, 5, 7, 9, 10, 11.

### PCI IRQ Actived By

If your IDE card is trigged by edge, set it at "**Edge**".The options are: Level (Default), Edge.

### PCI IDE IRQ Map To

Set Auto to allow the system BIOS automatically detect which interrupt is used by the PCI master drive. The options are: PCI-AUTO (Default), PCI-SLOT1, PCI-SLOT2, PCI-SLOT3, PCI-SLOT4, ISA.

### CPU to PCI Write Buffer

When enabled, allows data and address access to the internal buffer of 82C576MV so the processor can be released from waiting state. The options are: Enabled (Default), Disabled.

### PCI Master Write Buffer

When enabled, allows PCI write operation by informing the CPU of pending data from the PCI device. The processor is released from the waiting state by a signal from the master card. The options are: Enabled (Default), Disabled.

### PCI Master Prefetch

When enabled, allows the data and address to be saved in the internal buffer of 82C576MV to reduce the master drive access time. The options are: Enabled (Default), Disabled.

### PCI Master Burst Read

When enabled, allows the PCI master drive to burst read data from the system, instead of the normal speed (32 bits at a time). It increases the data transfer from PCI to the system. The options are: Enabled (Default), Disabled.

### PCI Master Burst Write

When enabled, allows the PCI master drive to burst write data to the system, instead of the normal speed (32 bits at a time). It increases the data transfer from PCI to the system. The options are: Enabled (Default), Disabled.

### PCI Dynamic Decoding

When enabled, allows the PCI IDE controller to automatically decode the next 1KB codes that come after a PCI cycle. It will improve the system performance. The options are: Enabled (Default), Disabled.

### PCI Dynamic Bursting

When enabled, allows the processor to execute the "**Burst write**" function during a PCI cycle. The options are: Enabled (Default), Disabled.





### PCI Byte Merge

When enabled, allows the PCI cycle to send data out only after the internal buffer of 82C576MV is filled up completely. If you are using Trident 9440 PCI VGA card (VC-910), AVANCE ALG 2301 PCI VGA card or KELVIN 64-PCI (Cirrus 5434) PCI VGA card, keep this feature disabled. The options are: Disabled (Default), Enabled

### Local Memory Detect Point

If set at Fast, the PCI access to the same 1KB address in memory will be reduced one PCI cycle. If you are using the Adaptec PCI SCSI Card AHA-2940/45, please set at "**Medium**". The options are: Fast (Default), Medium.

### PCI Burst

When enabled, it will improve the data transfer on PCI Buses. Disable it during trouble-shooting. The options are: Disabled, Enabled (Default).

### PCI Master 0 WS Write

When enabled, allows zero wait state cycle delay when the PCI master drive writes data to DRAM. The options are: Enabled (Default), Disabled.

## Interrupt Assignments of PCI Slots

| SLOT | INT OF SLOT | INT OF VT82C576 |
|---|---|---|
| A | A | A |
| | B | B |
| | C | C |
| | D | D |
| B | A | B |
| | B | C |
| | C | D |
| | D | A |
| C | A | C |
| | B | D |
| | C | A |
| | D | B |

## Load BIOS Defaults

BIOS defaults contain the most appropriate values of the system parameters that allow minimum configuration for a satisfactory system performance. The OEM manufacturer may change the defaults through MODBIN before the binary image burns into the ROM.

## Load Setup Defaults

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

## Supervisor/User Password

To enable the Supervisor/User passwords, select the item from the Standard CMOS Setup. You will be prompted to create your own password. Type your password up to eight characters and press <**Enter**>. You will be asked to confirm the password. Type the password again and press <**Enter**>. You may also press <**Esc**> to abort the selection and not enter a password. To disable password, press <**Enter**> when you are prompted to enter password. A message appears, confirming the password is disabled.

Under the BIOS Feature Setup (refer to page 4-4) if **System** is selected under the Security Option field and the **Supervisor Password** is enabled, you will be prompted for the Supervisor Password every time you try to enter the CMOS Setup Utility. If **System** is selected and the **User Password** is enabled, you will be requested to enter the User Password every time you reboot the system. If **Setup** is selected under the Security Option field and the **User Password** is enabled, you will be prompted only when you reboot the system.





### Clear Password

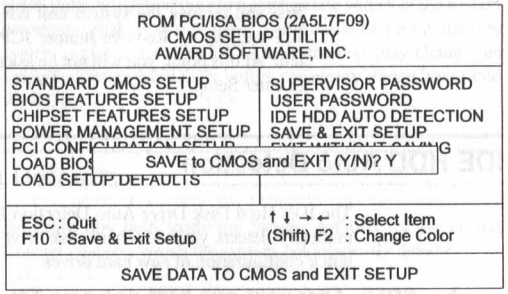
If you forget your password, turn off the system power first and remove the system unit cover. Locate Jumper JCP and cap it. Remove Jumper JCP and reset the system. At this point, you will not be asked for the password to enter Setup.

## IDE HDD Auto Detection

The IDE Hard Disk Drive Auto Detection BIOS feature automatically detects your new hard disk drive type. Use it for a quick configuration of new hard drives.

→ **NOTE: After your new hard disk type has been automatically configured by the BIOS, avoid pressing "Esc" if you wish to quit this screen and skip back to the CMOS Setup Utility screen otherwise you may lose all the modified settings. Follow the screen instructions on how to return to the Setup Utility screen instead.**

## Save and Exit Setup




After you have made changes under Setup, press <**Esc**> to return to the main menu. Move cursor to "**Save and Exit Setup**" or press "**F10**" and then press "**Y**" to change the CMOS Setup. If you did not change anything, press <**Esc**> again or move cursor to "**Exit Without Saving**" and press "**Y**" to retain the Setup settings. As you select this feature, the following message will appear at the center of the screen to allow you to save data to CMOS and exit the setup utility.

**SAVE to CMOS and EXIT (Y/N)?**

## Exit Without Saving

As you select this feature, the following message will appear at the center of the screen to allow you to save data to CMOS and exit the setup utility.

**Quit Without Saving (Y/N)?**

→ **NOTE : Default values of the various Setup items on this chapter may not necessarily be the same ones shown on your screen.**

# Update Note

To : Users of PA-2000 Manual (Rev : A0)
Date : Nov., 17, F, 1995

If your manual's released date is Sep. 1995 or later, please pay attention to the following:

| CPU Speed | External Clock | JK1 | JK2 | JK3 | CPU Clock Rate | |
|---|---|---|---|---|---|---|
| | | | | | Int. Multiple | JC2 |
| 133 MHz | 66 MHz |  |  |  | 2 x Ext. |  |
| 120 MHz | 60 MHz |  |  |  | 2 x Ext. |  |
| 100 MHz | 66 MHz |  |  |  | 1.5 x Ext. |  |
| 90 MHz | 60 MHz |  |  |  | 1.5 x Ext. |  |
| 75 MHz | 50 MHz |  |  |  | 1.5 x Ext. |  |