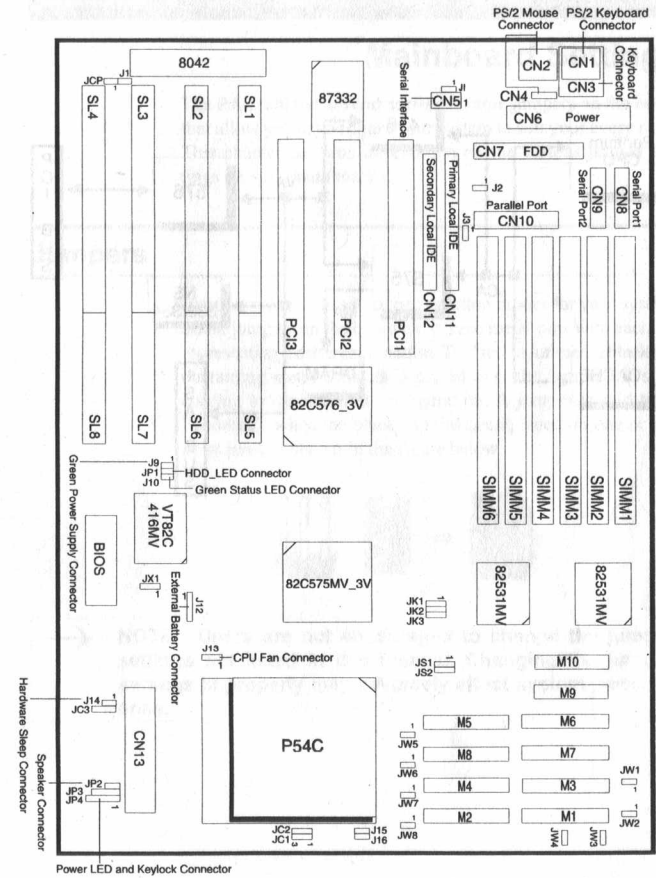


- Four 16-bit ISA expansion slot and three 32-bit PCI Bus master slots.
- Onboard NS 332/334™ I/O chipset supports two serial ports, one parallel port and FDC.

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

Mainboard Layout



Jumper Setting for CPU Clock

CPU Speed	External Clock	JK1	JK2	JK3	CPU Clock Rate		
					Int. Multiple	JC2	JC3
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.		

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

Jumper Setting for I/O

J1	Display Type <input type="checkbox"/> Mono/EGA/VGA <input checked="" type="checkbox"/> CGA
JCP	Password Clear <input checked="" type="checkbox"/> Enabled <input type="checkbox"/> Disabled (Default)
J1	NS87332/87334 <input type="checkbox"/> IR serial port (for NS334) <input checked="" type="checkbox"/> 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 Write-Back (Default) Write-Through
JP2	Hardware Reset <input checked="" type="checkbox"/> Enabled <input type="checkbox"/> Disabled (Default)
J17	Programmable Flash EPROM Type Intel 28F001BX-T 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

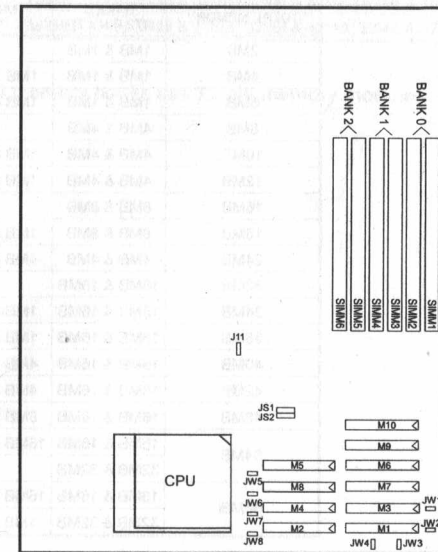
This connector can be set by a 3-pin housing connector.

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:



BIOS Features Setup

ROM PCI/ISA BIOS (2A5L7F0H)	
BIOS FEATURES SETUP	
AWARD SOFTWARE, INC.	
Virus Warning	: Disabled
External Cache	: Enabled
Quick Power On Self Test	: Disabled
Boot Sequence	: A, C
Swap Floppy Drive	: Disabled
Boot Up Floppy Seek	: Enabled
Boot Up Numlock Status	: On
Port 92H Fast A20G	: Fast
Memory Parity Check	: Disabled
Typematic Rate Setting	: Disabled
Typematic Rate (Chars/Sec)	: 6
Typematic Delay (Msec)	: 250
Security Option	: Setup
PS/2 mouse function control	: Disabled
Video BIOS Shadow	: Enabled
C8000 - CBFFF	: Disabled
CC000 - CFFFF	: Disabled
D0000 - D3FFF	: Disabled
D4000 - D7FFF	: Disabled
D8000 - DBFFF	: Disabled
DC000 - DFFFF	: Disabled
ESC : Quit	↑ ↓ → ← : Select Item
F1 : Help	PU/PD +/- : Modify
F5 : Old Values	(Shift) F2 : Color
F6 : Load BIOS Defaults	
F7 : Load Setup Defaults	

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 milliseconds.

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 Control	: Fast	Onboard Serial Port 1	: COM1 /3F8H
SRAM Tag/Alt Bit Config.	: 7 Tags + ALT	Onboard Serial Port 2	: COM2 /2F8H
Onchip IDE first channel	: Enabled	Onboard Parallel Port	: 378H/IRQ7
IDE HDD Block Mode	: Enabled	Onboard Printer Mode	: Compatible
IDE Primary Master PIO	: Auto	ECP Use DMA Channel No.:	3
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 (2A5L7FH) 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 Dynamic Bursting : Enabled
	PCI Byte Merge : Disabled
PCI IRQ Activated By : Level	Local Memory Detect Point : Fast
PCI IDE IRQ Map To : PCI-AUTO	PCI Burst : Disabled
Primary IDE INT# : A	PCI Master 0 WS Write : Enabled
Secondary IDE INT# : B	
	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 Activated By

If your IDE card is triggered 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