

# PA-2001



## MAINBOARD USER'S MANUAL

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## Handling Precautions

**WARNING:**

1. 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.
2. There is a danger of explosion if the battery is incorrectly replaced.  
Replace only with the same or an equivalent type recommended by the manufacturer.
3. Discard used batteries according to the manufacturer's instructions.

Observe the following 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 contacting 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.

The above methods prevent static build-up and cause it to be discharged properly.

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## Overview

The PA-2001 mainboard combines the advanced capabilities of the VIA Apollo chipset with a high-performance PCI local bus architecture to provide the ideal platform for unleashing the unsurpassed speed and power of the Intel Pentium® processor.

This highly flexible mainboard is designed to run a full range of Pentium processors and can be easily upgraded using its 321-pin ZIF (Zero Insertion Force) socket. The processor's advanced performance is complemented by a second level write-back cache of up to 1MB and a main memory of up to 64MB RAM. The main memory is installed using the mainboard's four 72-pin SIMM sockets that accept either standard Fast Page Mode DRAM or the new high-performance EDO (Extended Data-Out) DRAM.

The PA-2001 integrates a full set of I/O features onboard, including two 16550 UART compatible serial ports, one EPP /ECP capable parallel port, and one floppy disk drive controller. It also comes with a built-in enhanced IDE controller that provides convenient high-speed connections with up to four IDE devices, including hard disk and CD-ROM drives. Four 16-bit ISA slots and three 32-bit PCI slots provide ample room for further expansion.

This chapter gives you a brief overview of the PA-2001 mainboard. In addition to basic information on the board's main components and features, it also provides advice on how to upgrade and expand it. For updated BIOS, drivers, or product release information, please visit FIC's home page at: <http://www.fic.com.tw>. Congratulations on your decision to adopt the PA-2001 mainboard. With its high-speed ISA local bus architecture and ultra-fast I/O connections, the PA-2001 provides the ultimate solution for optimizing the performance of your high-end system.

## Main Features

The PA-2001 mainboard comes with the following high-performance features:

- **Easy Installation**  
Award BIOS with support for Plug and Play, auto detection of Hard Drive and IDE features, MS Windows 95®, and Windows NT® compatible to make setup of hard drives, expansion cards, and other devices virtually automatic.
- **Flexible Multi-Processor/Multi-Speed Support**  
Onboard 321-pin ZIF socket and switching voltage regulator supports a complete range of leading-edge processors:  
Intel Pentium® (P54C) 75/90/100/120/133 MHz processors.  
Cyrix® 6x86™ processors.
- **Leading Edge Chipset**  
VIA Apollo chipset, including a CPU interface controller, advanced cache controller, integrated DRAM controller, synchronous ISA bus controller, PCI local bus interface, integrated power management unit, internal keyboard controller, real-time clock and clock generator.
- **Ultra-fast Cache**  
Supports 256KB/512KB/1MB standard 3.3V or mixed voltage SRAM direct-mapped write-back cache memory.
- **Versatile Main Memory Support**  
Accepts up to 64MB RAM in two banks using 72-pin Fast Page Mode (FPM) or Extended Data Out (EDO) SIMMs of 4, 8, 16, or 32MB.
- **ISA/PCI Expansion Slot**  
Four 16-bit ISA and three 32-bit PCI expansion slots provide all the room you need to install a full range of add-on cards.
- **Enhanced Master Mode PCI IDE Controller**  
Comes with an onboard integrated IDE controller with two connectors that supports four IDE devices such as hard disk, CD-ROM or tape backup drives via two channels for high speed (33MB/sec) data throughput. This controller supports PIO Modes 3 and 4, and Bus Master IDE DMA Mode 2 for optimized system performance.
- **Super Multi I/O**  
Integrated Winbond WB 83787F/787IF/877 Plug and Play Super I/O chipset features two high-speed 16550 UART compatible serial ports, one EPP/ECP capable parallel port, and one Floppy Disk Drive connector.



## Package Checklist

Please check that your package contains all the items listed below. If you discover any item is damaged or missing, please contact your vendor.

- The PA-2001 mainboard
- This user's manual
- Support software drivers and utilities
- One floppy disk drive ribbon cable
- One IDE hard disk drive ribbon cable



## This User's Manual

This manual is designed to guide you and facilitate your use of the PA-2001 mainboard. It contains a description of the design and features of the mainboard, and also includes useful information for changing the configuration of the board and the system it is installed in. The manual is divided into three chapters, which contain the main body of information normally referred to by users.

- **Chapter 1 — Overview**  
gives an overview of the mainboard and describes its major components and features.
- **Chapter 2 — Installation Procedures**  
gives instructions on how to set up the mainboard, including jumper settings and CPU installation guides.
- **Chapter 3 — Award BIOS Setup**  
briefly explains the mainboard's BIOS system setup in general and tells you how to run it and change the system configuration settings.

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## Something Interesting

This section provides useful information that you will need to know should you decide to modify or upgrade the configuration of the mainboard and the system it is installed in. If you do not have the confidence to upgrade the mainboard yourself, we advise that you consult a qualified service technician for assistance.

## The BIOS Setup Utility

The BIOS (Basic Input Output System) is the basic firmware that instructs the computer on how to operate. For the BIOS to work properly, there must be a record of the computer's hardware and configuration settings for it to refer to. This record is created using the Setup Utility, a program that is stored permanently in the BIOS ROM chip on the mainboard.

The system configuration record created by the Setup Utility is also stored on the mainboard, but not permanently. This section of the memory it is stored in is the NVRAM.

When you buy your computer, the system configuration record will already be set and may in some cases differ from the basic defaults. The first time you use your computer or when you need to re-configure your system, you should run the Setup Utility and write down the settings. Please see Chapter 3 for an explanation on how to run the Setup Utility.

## IRQ Functionality

As you read through this manual, you will see the term IRQ on a number of occasions. It is important for you to know what this term means, particularly if you intend to upgrade your system.

IRQ stands for Interrupt Request, the process in which an input or output device tells the processor to temporarily interrupt its current task and immediately process something from the source of the interrupt. When it has completed this, the processor returns to the task it was already processing. Devices that need an IRQ line to operate sometimes need to have exclusive use of that line.

A large number of add-on cards, such as sound cards and LAN cards, require the use of an IRQ line to function. Some number of IRQs may already be in use by components in the system such as the keyboard and mouse. Add-on cards that need to use an IRQ draw from the unused group of IRQs. When installing a card that uses an IRQ, it will have a default IRQ setting which you might have to change if that IRQ is already in use and cannot be shared.

An ISA add-on card may need to use IRQs. System IRQs are available to add-on cards installed on the ISA bus. There are two categories of ISA add-on cards: so-called Legacy ISA cards, which need to be configured manually and then installed in the available ISA slot; and Plug and Play (PnP) ISA cards, which are configured automatically by the system. As a result, when you install Legacy ISA cards, you have to carefully configure the system to ensure that the installed cards do not conflict with each other by having the same IRQ. With PnP cards, on the other hand, IRQs are assigned automatically from the ones available in the system.

## DMA Channels of ISA Cards

Some Legacy and PnP ISA add-on cards may also need to use a Direct Memory Access (DMA) channel. DMA assignments for this mainboard are handled in the same way as the IRQ assignment process outlined above. For more information, please refer to Chapter 3 of this manual.

## Enhanced IDE

This mainboard features an integrated Enhanced IDE controller that provides convenient, high-speed connections with up to four IDE devices, such as Hard Disk, CD-ROM and Tape Backup Drives. Enhanced IDE is an upgrade of the original IDE specification and provides increased capabilities and performance in a number of areas, including support for Hard Disk Drives utilizing the PIO Mode 4 timing scheme.

With the integrated IDE controller, you can connect up to four IDE peripheral devices to your system. All devices are categorized in the same way that IDE Hard Disks were configured in the past, with one device set as the Master device and the other as the Slave device. We recommend that Hard Disk Drives use the Primary IDE connector and that CD-ROM drives utilize the Secondary IDE connector for improved system performance.

## Infrared Connections

This mainboard features support for highly-sophisticated IR technology, which allows bi-directional and cordless data transactions with other IrDA compliant computers and peripheral devices using infrared as a medium. This transmission is carried out in either Full Duplex Mode or Half Duplex Mode. The former allows simultaneous data transmission and reception, while the latter disables the reception when transmission occurs.

The I/O chipset on this mainboard features an IR (SIR) interface that is fully compliant with the IrDA standard. An IrDA device can be installed via a 9-pin D-SUB connector in the rear panel of the computer which is linked by a cable to the onboard IrDA pinhead.

## **Highly Convenient Integrated I/O Connectors**

This mainboard features an integrated rear I/O panel that incorporates a full set of I/O ports to allow simple and convenient connections to a complete selection of external peripheral devices.

## Installation Procedures

The PA-2001 has several user-adjustable jumpers on the board that allow you to configure your system to suit your requirements. This chapter contains information on the various jumper settings on your mainboard.

Before using the computer, you must complete the following steps:

- Step 1 -  
**Set system jumpers**
- Step 2 -  
**Install system RAM modules**
- Step 3 -  
**Install the Central Processing Unit (CPU)**
- Step 4 -  
**Install expansion cards**
- Step 5 -  
**Connect ribbon cables, cabinet wires, and power supply**
- Step 6 -  
**Set up BIOS software** (Please read Chapter Three)

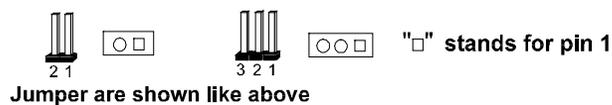
**WARNING:** Excessive torque may damage the mainboard. When using an electric screwdriver on the mainboard, make sure that the torque is set to the allowable range of 5.0 ~ 8.0kg/cm. Mainboard and components contain very delicate Integrated Circuit (IC) chips. To prevent static electricity from harming any of the mainboard's sensitive components, you should follow some precautions whenever working on the computer:

1. Unplug the computer when working on the inside.
2. Hold components by the edges and try not to touch the IC chips, leads, or circuitry.
3. Wear an anti-static wrist strap which fits around the wrist.
4. Place components on a grounded anti-static pad or on the bag that came with the component whenever the components are separated from the system.

## 1). Set System Jumpers

### *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. A "1" is written besides pin 1 on jumpers with three pins. 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. The types of jumpers used in this manual are shown below:



Jumper are shown like above



Jumper cap like above



Jumpers in a Block

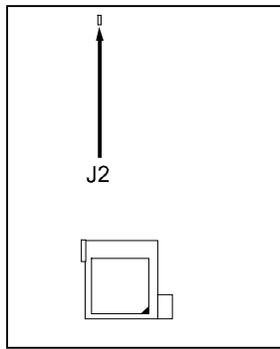
**NOTE :** Users are not encouraged to change the jumper settings not listed in this manual. Changing the jumper settings improperly may adversely affect system performance.

***Clear Password: JCP***

This jumper allows you to set the password configuration to Enabled or Disabled. You may need to enable this jumper if you forget your password.

***Flash EPROM Type Selection: J2***

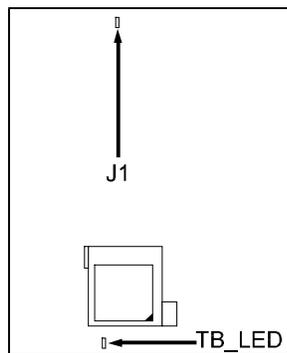
This jumper allow you to configure the Flash EPROM chip.



Flash EPROM Power Supply	J2
SST Boot Block (Default)	
Intel Boot Block	

***LED Indicator Select: J1***

This jumper allows you to set the function of the TB\_LED indicator.



TB_LED Mode Select	J1
TB_LED is a Turbo LED.	
TB_LED is a Green LED.	

## 2). Install System RAM Modules

### DRAM Memory

The working space of the computer is the Random Access Memory (RAM). The system cannot act upon data unless it is loaded into RAM. When more memory is added, the working memory of the computer is larger, thereby increasing total performance.

The PA-2001's RAM is comprised of four industry standard 72-pin Single In-line Memory Modules (SIMMs) and can accommodate onboard memory from 2 to 64MB. The mainboard has two memory banks - Bank 0 and Bank 1. Each bank has two SIMM sockets which can accept either a 1MB, 4MB, 8MB or 16MB SIMM in each socket, either 60ns or 70ns FPM (Fast Page Mode) (asymmetric or symmetric) and high-speed EDO (Enhanced Data Out) DRAM (parity is not supported).

Occasionally the system must break apart data files because the entire file does not fit into the RAM area. Consequently, when the system needs data that is not in RAM, it must access the disk where the balance of the data is stored. Compared to the lightning speed access of the system has to RAM, accessing a mechanical disk drive is a slow process.

Before making DRAM upgrades, you should verify the type and speed of the RAM currently installed from your dealer. Installing mixtures of RAM types other than those described in this manual, will have unpredictable results.

## DRAM Module Configuration

DRAM modules in Bank 0 and Bank 1 can be installed in many combinations. Some of them are listed in the following table.

TOTAL MEMORY	BANK 0 SIMM 1 (72-PIN)	BANK 0 SIMM 2 (72-PIN)	BANK 1 SIMM 3 (72-PIN)	BANK 1 SIMM 4 (72-PIN)
2MB	1MB	1MB		
4MB	1MB	1MB	1MB	1MB
8MB	4MB	4MB		
10MB	4MB	4MB	1MB	1MB
16MB	4MB	4MB	4MB	4MB
18MB	8MB	8MB	1MB	1MB
24MB	8MB	8MB	4MB	4MB
32MB	8MB	8MB	8MB	8MB
34MB	16MB	16MB	1MB	1MB
40MB	16MB	16MB	4MB	4MB
48MB	16MB	16MB	8MB	8MB
64MB	16MB	16MB	16MB	16MB

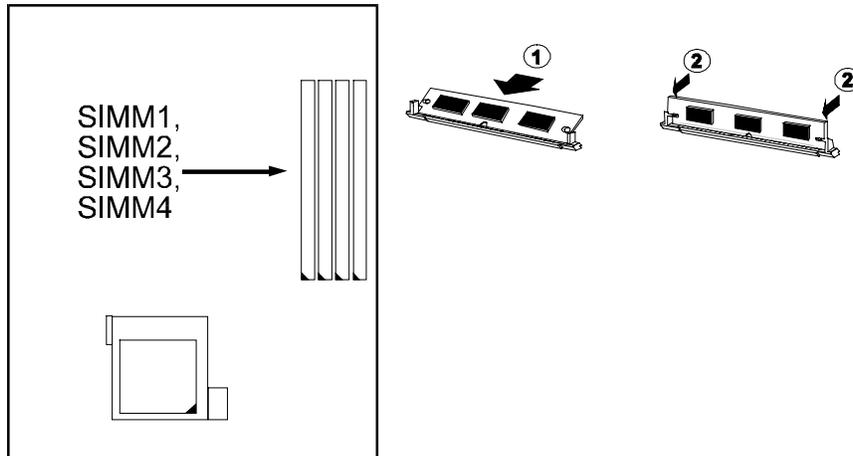
**NOTE :** SIMMs (ECC memory or parity check is not supported) with latency time of 60ns, 70ns is allowed on this mainboard.  
All memory banks use 72-pin memory modules.

## Install SIMMs

Complete the following procedures to install SIMMs:

**CAUTION:** Always turn the system power off before installing or removing any device.  
Always observe static electricity precautions. See "Handling Precautions" at the start of this manual.

1. Locate the SIMM slots on the mainboard. (See figure below.)



**NOTE :** SIMMs in each bank must be of the same type; System BIOS automatically configures the memory size.

2. Carefully fit a SIMM at a 45 degree angle into each empty socket to be populated, making sure that all the contacts are aligned with the socket. The SIMM memory modules will only fit in one orientation as shown because of a “Plastic Safety Tab” on one end of the SIMM sockets which requires the “Notched End” of the SIMM memory modules.
3. With your fingers, swing each SIMM into its upright, locked position so that it clicks into place. When locking a SIMM in place, push on each end of the SIMM - do not push in the middle.
4. The plastic guides should go through the two “Mounting Holes” on the sides and the “Metal Clips” should snap on the other side.

## Remove SIMMs

To remove the SIMMs, pull on the retaining latch (Metal Clips) on both ends of the socket and reverse the procedure above.

## Cache Memory

Cache memory access is very fast compared to main memory access. The cache holds data for imminent use. Since cache memory is from five to more than ten times faster than main memory, the CPU's access time is reduced, giving you better system performance.

Pentium mainboards may implement various types of L2 cache SRAMs. Pipeline Burst SRAM is one of them, delivering the best price performance ratio. They perform much better than asynchronous SRAMs.

**NOTE :** The cache memory is user upgradeable. Use the correct chips for the amount of cache memory you want to add. Install both the correct cache and Tag SRAM.

## Installing Cache Memory

**CAUTION:** Always turn the system power off before installing or removing any device.  
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, consult a service technician for assistance.

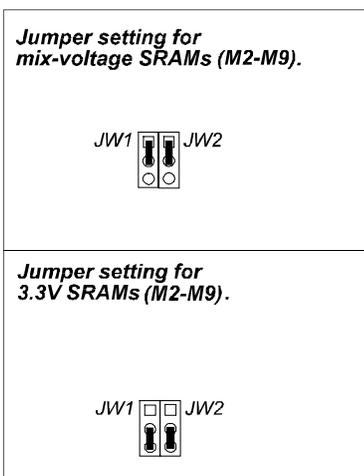
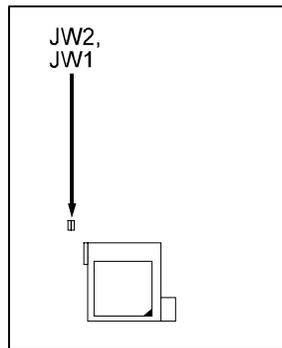
1. Locate the cache memory on the mainboard. Be guided by the cache SRAM settings depending on the desired SRAM configuration.

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.

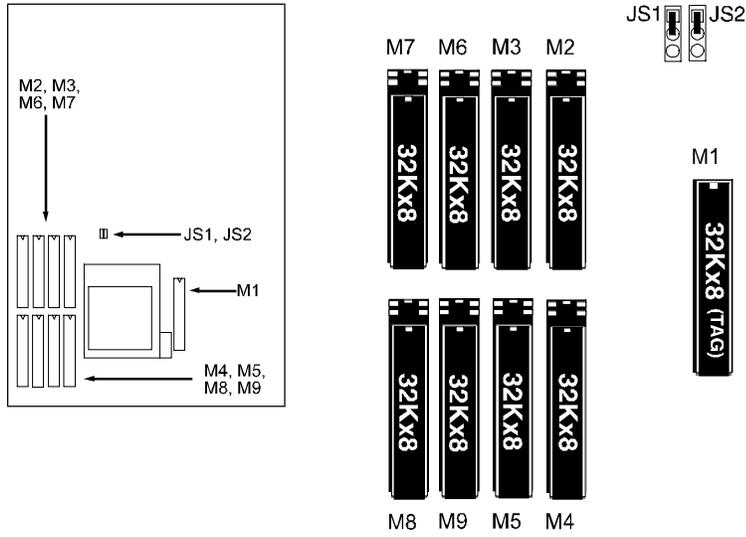
2. Align the chip with the marker on the socket. Press the chip onto the socket, ensuring that the pins on the chip are aligned with the corresponding connections on the socket.
3. Press the chip completely into the socket so that the pins are properly seated.

## Using Various Voltage SRAM

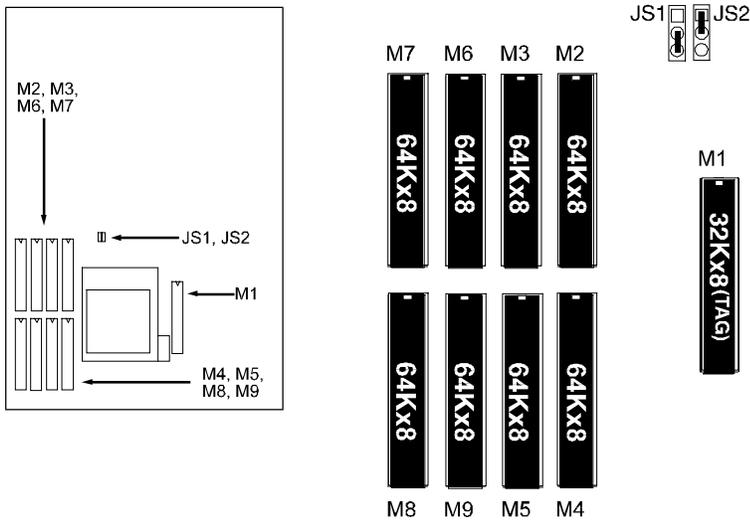
Cache sockets M2 to M9 can take 3.3V or mix-voltage SRAMs. However, cache socket M1 can only take 5.0V SRAMs. The jumper settings are listed below.



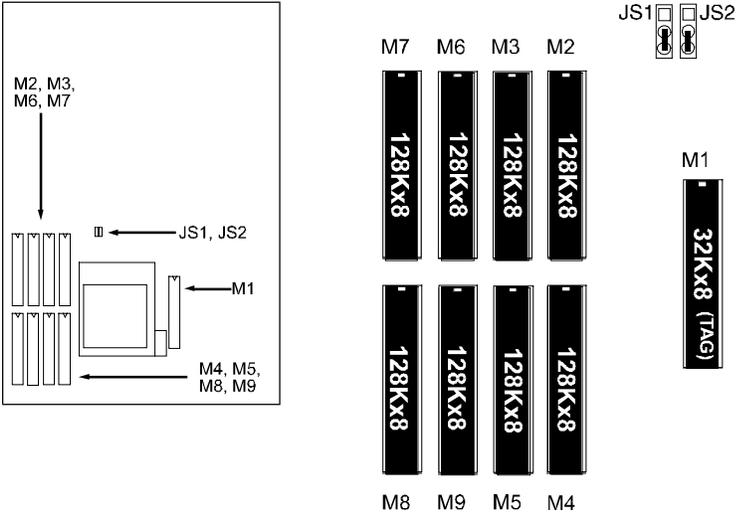
### Option 1: 256KB Cache SRAM



### Option 2: 512KB Cache SRAM



### Option 3: 1MB Cache SRAM



### 3). Install the Central Processing Unit (CPU)

The CPU module resides in a 321-pin Zero Insertion Force (ZIF) Socket 5 on the mainboard. The CPU that came with the mainboard should have a fan attached to it to prevent overheating. If this is not the case then purchase a fan before turning on the system. Apply thermal jelly to the CPU top and then install the fan onto the CPU.

**NOTE :** Without a fan circulating air on the CPU it can overheat and cause damage to both the CPU and the mainboard.

**CAUTION:** Always turn the system power off before installing or removing any device.  
Always observe static electricity precautions. See “Handling Precautions” at the start of this manual.  
Inserting the CPU chip incorrectly may damage the chip.

To install the CPU, first turn off the system and remove its cover before doing the following:

1. Locate the ZIF socket and open it by first pulling the lever sideways away from the socket then upwards to a 90-degree right angle.
2. Handle the chip by its edges and try not to touch any of the pins.
3. Place the CPU in the socket. The chip has a notched corner with the white dot to correctly orient the chip. Align the notch with pin one of the socket by pointing the white dot towards the end of the lever. Pin one is located in the blank triangular area where one hole is missing from that corner of the square array of pin holes. Do not force the chip as the CPU has a corner pin for three of the four corners, the CPU will only fit in the one orientation. With the added weight of the CPU fan, the CPU should slide easily into the socket.
4. Once completely inserted, hold down on the fan and swing the lever to the down position to lock the CPU in place.
5. See the following sections for information on the CPU jumpers settings.

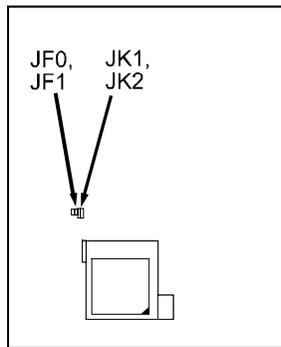
**NOTE :** You must set jumpers for “CPU to BUS Frequency Ratio” and “CPU External Clock (BUS) Frequency” depending on the CPU that you install.



## Select Frequency and Voltage

### *CPU to BUS Frequency Ratio: JF0, JF1*

These two jumpers are used in combination to decide the ratio of the internal frequency of the CPU to the external frequency (called the BUS clock) within the CPU. These must be set together with the jumpers on the next page (CPU external clock BUS frequency).



Bus/CPU Clock Ratio	JF0	JF1
1/2		
1/3		
2/3		
2/5		

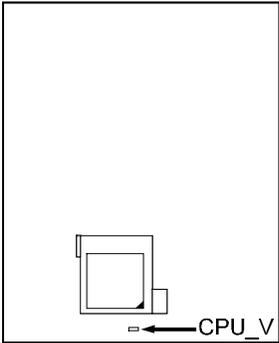
### *Frequency*

The table below shows the jumper settings for the CPU based on its internal clock speed.

CPU Speed	External Clock	JK1	JK2	CPU Clock Rate		
				Int. Multiple	JF0	JF1
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.		

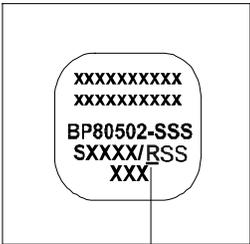
**Voltage**

This jumper sets the voltage supplied to the CPU. The voltage regulators will automatically detect and switch between Single Power Plane and Dual Power Planes.



CPU Voltage Mode	CPU_V
STD / VR (Default) 3.384V	
VRE 3.49V	

**Intel Pentium CPU  
Bottom Side Marking**



**R (Identflier for Voltage Range) :**  
**V** for VRE Voltage Range  
 or  
**S** for Standard Voltage Range

## 4). Install Expansion Cards

**NOTE :** Make sure to unplug the power supply when adding or removing expansion cards or other system components. Failure to do so may cause severe damage to both the mainboard and expansion cards.

The mainboard features four 16-bit ISA Bus and three 32-bit PCI expansion slots. This section describes how to connect an expansion card to the system's expansion slot. An expansion card is a printed circuit board that, when connected to the mainboard, allows you to increase the capabilities of the system. For example, an expansion card can provide video and sound capabilities.

**CAUTION:** Always turn the system power off before installing or removing any device.  
Always observe static electricity precautions. See "Handling Precautions" at the start of this manual.

To install an expansion card, do the following:

1. Remove the computer chassis cover and locate an empty ISA/PCI expansion slot.
2. Holding the edge of the peripheral card, carefully align the edge connector with the expansion slot.
3. Push the card firmly into the slot. Push down on one end of the expansion card, then the other. Use this "rocking" motion until the add-on card is firmly seated inside the slot. Make sure that the card has been placed evenly and completely into the expansion slot.
4. Read the expansion card documentation on any hardware and software settings that may be required to setup the specific card.
5. Set any necessary jumpers on the add-on card.
6. Replace the computer system's cover.
7. Setup the BIOS if necessary.
8. Install the necessary software drivers for the add-on card.

## Assigning IRQs for Expansion Cards

Some expansion cards need to use an IRQ to operate. Generally an IRQ must be exclusively assigned to one use. In a standard design there are 16 IRQs available but most of them are already in use by parts of the system which leaves 6 free for expansion cards.

Currently, there are two types of ISA cards. The original ISA expansion card design, now referred to as “Legacy” ISA cards, requires that you configure the card’s jumpers manually and then install it in any available slot on the ISA bus. You may use Microsoft’s Diagnostic (MSD.EXE) utility included in the Windows directory to see a map of the used and free IRQs. For Windows 95 users, the “Control Panel” icon in “My Computer” contains a “System” icon which gives you a “Device Manager” tab. Double clicking on a specific device gives you a “Resources” tab which shows the Interrupt number and address. Make sure that no two devices use the same IRQs or the computer will experience problems when two devices are in use at the same time.

To simplify this process the mainboard has complied with the Plug and Play (PnP) specification which was developed to allow automatic system configuration whenever a PnP-compliant card is added to the system. For PnP cards, IRQs are assigned automatically from those available. For older Legacy cards that does not work with the BIOS, contact your vendor for an ISA Configuration Utility.

## Assigning DMA Channels for ISA Cards

Some ISA cards, both Legacy and PnP may also need to use a DMA (Direct Memory Access) channel. DMA assignments for the mainboard are handled the same way as the IRQ assignment process described above. You can select a DMA channel in the PnP configuration section of the BIOS Setup utility.

## 5). Connector Cables and Power Supply

### Connectors

<p><b>NOTE</b> : Some pins are used for connectors or power sources. These are clearly separated from jumpers. Placing jumper caps over these will cause damage to the mainboard.</p>
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Ribbon cables should always be connected with the red stripe on the Pin 1 side of the connector. The four corners of the connectors are labeled on the mainboard. Pin 1 is the side closest to the power connector on hard drives and floppy drives. IDE ribbon cable must be less than 18in. (46cm), with the second drive connector no more than 6in. (15cm) from the first connector.

Connectors allow the mainboard to link electronically with other parts of the system. Some malfunctions encountered may be caused by loosed or improper connections. Ensure that all connections are in place and firmly attached.

#### ***Floppy Diskette Drive Connector (34-pin block): FDD***

This 34-pin block connector connects to your floppy disk drive using the cable that is provided with this mainboard. After connecting the single end to the board, connect the two plugs on the other end to the floppy drives. Pin 5 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 5 plugged.

#### ***Infrared Connector: IR***

This 10-pin male connector is used for connecting to the infrared (SIR) port and allows the data transaction with another system which also supports the SIR feature.

#### ***Serial Port Connectors (Two 9-pin Male): COM1, COM2***

These two connectors allow you to connect with devices that take serial ports, such as a serial mouse or a modem. Usually, it is recommended to connect the serial mouse to COM1 and the fax/modem to COM2. Because COM2 and IR utilizes the same IRQ, COM2 will not work if an IR device is connected to the IR connector.

#### ***Standard Power Connector: POWER***

This 12-pin block connector is used for connecting to the standard 5V power supply. Notice that, in most cases, there are two marks "P8" and "P9" on the surface of the connector. You have to insert the "P8" plug into the "P8" section of the connector, and so forth for "P9". Two black wires must be facing each other.

### ***IDE HDD Device Connector (Two 40-pin Block): P\_IDE, S\_IDE***

These two 40-pin block connector are used for your IDE hard disks. If you have one IDE hard disk, connect it to the PRIMARY connector using the IDE HDD flat cable provided with the mainboard. The BIOS auto detection sets it to be a “Primary Master” disk. If you want to install another IDE hard disk or CD-ROM drive, please use the SECONDARY connector. If two hard disks are connected to PRIMARY connector using the same cable, one of them is the master drive, the other one is the slave drive. You may need to set jumpers for the slave drive; please refer to the hard disk drive manual for details. Pin 20 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 20 plugged.

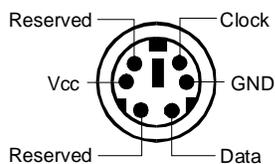
You may configure two hard disks to be both Masters using one ribbon cable to the primary IDE connector and another ribbon cable on the secondary IDE connector. You may install one operating system on an IDE drive and another on a SCSI drive and select the boot disk through the BIOS Setup.

### ***AT Keyboard Connector (6-pin Female): AT\_KB***

This connector is used to connect a standard keyboard using an AT plug (large DIN) to the system. This connector will not allow PS/2 size (mini DIN) keyboard plugs. You may use a mini DIN to DIN adapter on standard PS/2 keyboards.

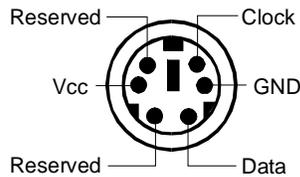
### ***PS/2 Keyboard Connector (6-pin Female): PS2\_KB***

This connector is used to connect a standard keyboard using a PS/2 plug (mini DIN) to the system. This connector will not allow standard AT size (large DIN) keyboard plugs. You may use a DIN to mini DIN adapter on standard AT keyboards.



***PS/2 Mouse Connector (6-pin Female): PS2\_MS***

This connector is used to connect the PS/2 mouse to the system. The system will direct IRQ12 to the PS/2 mouse if one is detected. If not detected, expansion cards can use IRQ12.



***CPU Fan Connector: CPUFAN***

This connector support cooling fan of 500mAMP (6WATT) or less. Depending on the fan manufacturer, the wiring and plug may be different. The red wire should be positive, while the black wire should be ground. Connect the fan's plug to the board taking into consideration the polarity of the connector. Either one is connected to the CPU fan. CPUFAN causes the CPU fan to be activated upon booting the system – for as long as the system is on, irrespective of CPU temperature.

**NOTE :** The CPU and/or mainboard will overheat if there is no airflow across the CPU. Damage may occur to the mainboard and/or CPU fan if these pins are incorrectly used. These are not jumpers, do not place jumper caps over these pins.

***Front Panel Connectors:***

This block connector includes: KBLOCK, TB\_LED, RESUME, SPEAK, I\_LED, and RESET connectors.

ITEM	CONNECTOR	PIN TYPE	FEATURE
A	KBLOCK	5-pin male	The system power LED lights when the system is powered on. It also allows the keyboard to access the system
B	TB_LED	2-pin male	indicates if the system speed is in normal or turbo. It also indicates when the system is in Suspend mode when LED is lit.
C	RESUME	2-pin male	Suspend mode switch allows user to manually place the system into a suspend mode or "Green" mode where system activity will be instantly decreased to save electricity and expand the life of certain components when the system is not in use. This connector connects to the case-mounted suspend switch. Wake-up can be controlled by settings in the BIOS but the keyboard will always allow wake-up. If you want to use this connector, the corresponding function in the Power Management Setup of the BIOS software section should be on the default setting of Enable.
D	SPEAK	4-pin male	This connector connects to the case-mounted speaker.
E	I_LED	2-pin male	This connector supplies power to the cabinet's IDE activity LED. Indicates the IDE HDD I/O (read and write activity by devices connected to the Primary and Secondary IDE connectors) is being accessed when LED is lit
F	RESET	2-pin male	This connector connects to the case-mounted reset switch for rebooting the system without having to turn off power switch. This is a preferred method of rebooting in order to prolong the life of the system's power supply.

***Parallel Printer Connector (25-pin Female): LPT***

The onboard 26-pin female connector allows the system to link with printer devices via a printer cable. Serial printers must be connected to the serial port.

## Power Connection Procedures

1. After all jumpers and connections are made, close the system case cover.
2. Make sure that all switches are in the off position.
3. Connect the power supply cord into the power supply located at the back of your system case as instructed by the system user's manual.
4. Connect the power cord into a power outlet that is equipped by a surge protector.
5. You may then turn on your devices in the following order:
  - a. The monitor
  - b. External SCSI devices (starting with the last device on the chain)
  - c. The system power
6. The power LED on the front panel will light. The monitor LED may light after the system's if it complies with "Green" standards or if it has a power standby feature. The system will then run power-on tests. While the tests are running, additional messages will appear on the screen. If you do not see anything within 30 seconds from the time you turn on the power, the system may have failed a power-on test. Recheck the jumper settings and connections or call the retailer for assistance.
7. During power-on, hold down the <Delete> key to enter BIOS Setup. Follow the next chapter for instructions.

## Powering Off the Computer

You must first exit or shut down the operating system before switching off the power switch. For Windows 95 users, select shut down the computer from the "Start" button and the system will give three quick beeps after about 30 seconds and power off after Windows shut down.

## Setting BIOS Features

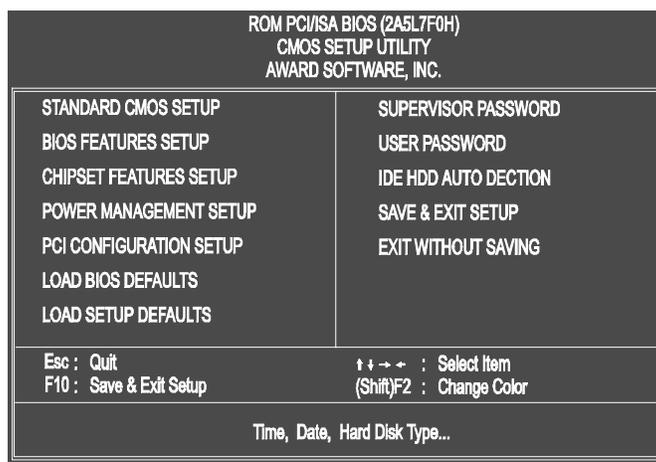
All computer mainboards provide a Setup utility program for specifying the system configuration and settings. If the mainboard came in a computer system, the proper configuration entries may have already been made. If you are installing the mainboard or reconfiguring the system or if you receive a Run Setup message, you will need to enter new setup information.

The mainboard comes with the Award BIOS chip that contains the ROM Setup information of the 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 the system configuration.

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 user changes system configuration; user changes system backup battery; or the system detects a configuration error and asks the user to run the Setup program. At power-on RAM testing, the message Press <Delete> key to enter Setup appears. If you are a little bit late pressing the mentioned key, POST (Power-On Self Test) will continue with its test routines, thus preventing you from calling up Setup. If you still need to call Setup, reset the system by simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys, or by pushing the Reset button on the system case. You can also restart by turning the system off and then back on again. But do so only if the first two methods fail. Use the arrow keys to select and press <Enter> key to run the selected program.

## Main CMOS Setup

When you run Setup, the CMOS SETUP UTILITY main program screen will appear with the following options:



A section at the bottom of the above screen displays the control keys for this screen. Take note of these keys and their respective uses. Another section just below the control keys section displays information on the currently highlighted item in the list.

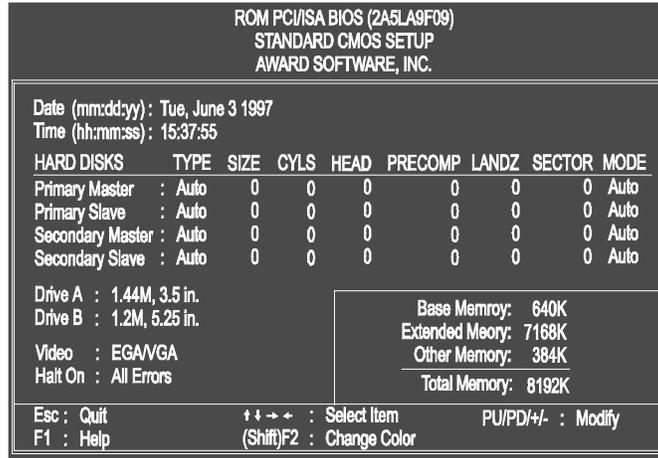
## Load Defaults

The “Load BIOS Defaults” option loads the minimized settings for troubleshooting. “Load Setup Defaults” on the other hand, is for loading optimized defaults for regular use. Choosing defaults at this level will modify all applicable settings.

## Standard CMOS Setup

The “Standard CMOS Setup” option allows you to record some basic system hardware configuration and set the system clock and error handling. If the mainboard is already installed in a working system, you will not need to select this option anymore. However, if the configuration stored in the CMOS memory on the mainboard gets lost or damaged, or if you change the system hardware configuration, you will need to re-specify the configuration values. The

configuration values usually get lost or corrupted when the power of the onboard CMOS battery weakens.



The above screen provides you with a list of options. At the bottom are the control keys for this screen. Take note of these keys and their respective uses. User-configurable fields appear in a different color. If you need information on the selected field, press the <F1> key. The help menu will then appear to provide you with the information you need. The memory display at the lower right-hand side of the screen is read-only and automatically adjusts accordingly.

### Date

To set the date, highlight the “Date” field and then press the page up/page down or +/- keys to set the current date. Follow the month, day and year format. Valid values for month, day and year are: Month: (1 to 12), Day: (1 to 31), Year: (up to 2099).

### Time

To set the time, highlight the “Time” field and then press the page up/page down or +/- keys to set the current time. Follow the hour, minute and second format. Valid values for hour, minute and second are: Hour: (00 to 23), Minute: (00 to 59), Second: (00 to 59), just press the <Enter> key twice if you do not want to modify the current settings.

### Hard Disks

This field records the specifications for all non-SCSI hard drives installed in the system. The onboard PCI IDE connectors provide Primary and Secondary channels for connecting up to four IDE hard disks or other IDE devices. Each channel can

support up to two hard disks; the first of which is the “master” and the second is the “slave”.

Specifications for SCSI hard disks need not be entered here since they operate using device drives and are not supported by any BIOS. If you installed a SCSI controller card, please refer to their respective documentation on how to install the required SCSI drivers.

For an IDE hard disk drive setup, you can:

- Use the *Auto* setting for detection during bootup.
- Use the IDE HDD AUTO DETECTION in the main menu to automatically enter the drive specifications.
- Enter the specifications yourself manually by using the “User” option.

The entries for specifying the hard disk type include CYLS (number of cylinders), HEAD (number of read/write heads), PRECOMP (write precompensation), LANDZ (landing zone), SECTOR (number of sectors) and MODE. The SIZE field automatically adjusts according to the configuration you specified. The documentation that comes with the hard disk should provide you with the information regarding the drive specifications.

The MODE entry is for IDE hard disks only, and can be ignored for MFM and ESDI drives. This entry provides three options: *Normal*, *Large*, *LBA*, or *Auto*. Set MODE to the *Normal* for IDE hard disks smaller than 528MB; set it to *LBA* for drives over 528MB that support Logical Block Addressing (LBA) to allow large IDE hard disks; set it to *Large* for drives over 528MB that do not support LBA. *Large* type of drives can only be used with MS-DOS and is very uncommon. Most IDE drives over 528MB support the *LBA* mode.

### Auto Detection of Hard Disks on Bootup

For each field: Primary Master, Primary Slave, Secondary Master, and Secondary Slave, you can select *Auto* under the TYPE and MODE fields. This will enable auto detection of your IDE drives during Bootup. This will allow you to change your hard drives (with the power off) and then power on without having to reconfigure your hard drive type. If you use older hard drives which do not support this feature, then you must configure the hard drive in the standard method as described above by the “User” option.

**NOTE :** After the IDE hard disk information has been entered into BIOS, new IDE hard disks must be partitioned (such as with FDISK) and then formatted before data can be read from and write on. Primary IDE hard drives must have its partition set to *active* (also possible with FDISK).

### **Drive A / Drive B**

These fields record the types of floppy drives installed in the system. The available options for drives A and B are: *None (default)*; *360KB, 5.25 in.*; *1.2MB, 5.25 in.*; *720KB, 3.5 in.*; *1.44MB, 3.5 in.*; *2.88MB, 3.5 in.* To enter the configuration value for a particular drive, highlight its corresponding field and then select the drive type using the left- or right-arrow key.

### **Floppy 3 Mode Support**

This is the Japanese standard floppy drive. The standard stores 1.2MB in a 3.5inch diskette. This is normally disabled but you may choose from either: *Disabled* (default), *Drive A*, *Drive B*, and *Both*.

### **Video**

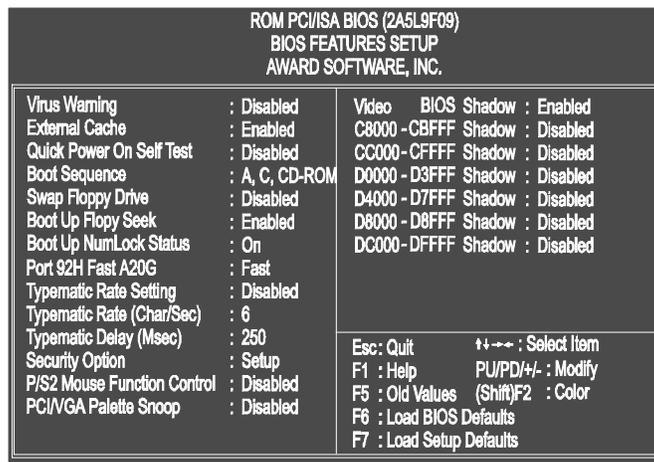
Set this field to the type of video display card installed in the system. The options are: *EGA/VGA* (default), *Mono* (for Hercules or MDA), *CGA 40*, and *CGA 80*. If you are using a VGA or any higher resolution card, choose the “EGA/VGA” option.

### **Halt On**

This field determines which types of errors will cause the system to halt. Choose from *All Errors* (default); *No Errors*; *All, But Keyboard*; *All, But Diskette*; and *All, But Disk/Key*.

## BIOS Features Setup

The “BIOS Features Setup” option consists of configuration entries that allow you to improve the system performance, or lets you set up some system features according to your preference. Some entries here are required by the mainboard’s design to remain in their default settings.



A section at the lower right of the screen displays the control keys you can use. Take note of these keys and their respective uses. If you need information on a particular entry, highlight it and press the <F1> key. A pop-up help menu will appear to provide you with the information you need. <F5> loads the last set values, <F6> and <F7> loads the BIOS default values and Setup default values, respectively.

### Virus Warning

This field protects the boot sector and partition table of the hard disk against accidental modifications. Any attempt to write to them will cause the system to halt and display a warning message. If this occurs, you can either allow the operation to continue or use a bootable virus-free floppy disk to reboot and investigate the system. This setting is recommended because of conflicts with new operating systems. Installation of new operating systems require that you disable this to prevent write errors. The options are *Disabled* (default); *Enabled*.

### External Cache

These fields allow you to turn on or off the CPU’s Internal and External built-in cache. The options are *Enabled* (default); *Disabled*.

### **Quick Power On Self Test**

This field speeds up the Power-On Self Test (POST) routine by skipping re-testing a second, third, and fourth time. A complete test of the system is done on each test. The options are *Disabled* (default); *Enabled*.

### **Boot Sequence**

This field determines where the system looks first for an operating system. The setup default setting is to check first the floppy drive and then the hard drive; that is, *A, C*. The options are *A, C, CDROM* (default); *C, A, CDROM*; *C, CDROM, A, CDROM, C, A*.

### **Swap Floppy Drive**

When enabled, it allows you to switch the order in which the operating system accesses the floppy drives during bootup. The options are: *Disabled* (default); *Enabled*.

### **Boot Up Floppy Seek**

When enabled, the BIOS will seek the floppy “A” drive one time. The options are *Enabled* (default); *Disabled*.

### **Boot Up NumLock Status**

This field enables user to activate the Number Lock function upon system boot. The options are *On* (default); *Off*.

### **Port 92H Fast A20G**

When enabled, it allows the A20G Bus line signal generated from the VIA VT82C575M PC/AT chipset to directly pass to port 92H instead of the keyboard controller. It will speed up the system performance. The options are *Fast* (default); *Normal*.

### **Typematic Rate Setting**

When enabled, you can set the two typematic controls listed next. The options are *Disabled* (default); *Enabled*.

### **Typematic Rate (Chars/Sec)**

This field controls the speed at which the system registers repeated keystrokes. The options are *6* (default); *8; 10; 12; 15; 20; 24; and 30*.

### **Typematic Delay (Msec)**

This field sets the time interval for displaying the first and second characters. The options are *250* (default); *500; 750; and 1000* millisecond.

### **Security Option**

This field determines when the system prompts for the password. The default setting is *Setup*, where the system always boots up, and prompts for the Supervisor Password only when the Setup utility is called up. The other option is *System*, where the system prompts for the User Password every time you boot up. You can specify a password by using the *Supervisor Password* or *User Password* option from the main screen as explained later in this section. The options are *Setup* (default); *System*.

### **PS/2 Mouse Function Control**

When enabled, it allows you to release IRQ12 for the PS/2 mouse's use. The options are *Disabled* (default); *Enabled*.

### **Video BIOS Shadow**

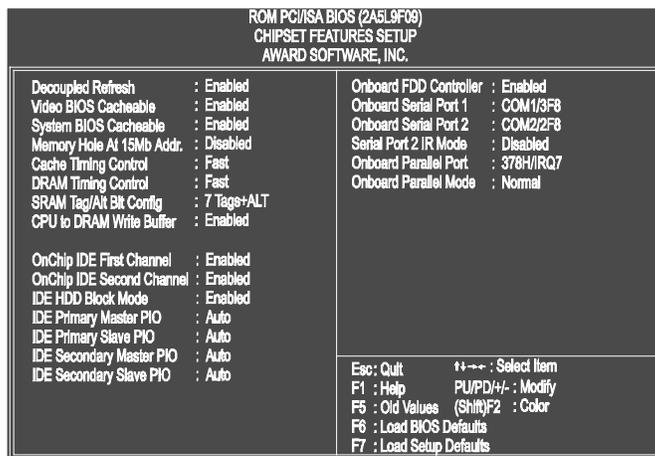
This field allows you to change the video BIOS location from ROM to RAM. Relocating to RAM enhances system performance, as information access is faster than the ROM. The options are *Enabled* (default); *Disabled*.

### **C8000-CBFFF to DC000-DFFFF Shadow**

These fields are used for shadowing other expansion card ROMs. If you install other expansion cards with ROMs on them, you will need to know which addresses the ROMs use to shadow them specifically. Shadowing a ROM reduces the memory available between 640KB and 1024KB by the amount used for this purpose. The options are *Disabled* (default); *Enabled*.

## Chipset Features Setup

The “Chipset Features Setup” option controls the configuration of the board’s chipset. Control keys for this screen are the same as for the previous screen.



### Decoupled Refresh

When enabled, the onboard DRAM will be decoupled from the ISA Bus memory device so that the processor can re-access the onboard DRAM without waiting for the completion of the ISA Bus memory refresh. Disable it if you are using ISA-type ET-4000 VGA card. The options are: *Enabled* (default); *Disabled*.

### Video BIOS Cacheable

Allows the video BIOS to be cached to allow for faster execution. Leave on default setting of *Enabled* for better performance, otherwise *Disabled*. The options are *Enabled* (default), *Disabled*.

### System BIOS Cacheable

When enabled, allows the ROM area of F000H-FFFFH to be cacheable when the cache controller is activated. The options are *Enabled* (default), *Disabled*.

### Memory Hole at 15MB Addr.

Enabling this feature reserves 15MB to 16MB memory address space to ISA expansion cards that specifically require this setting. This makes the memory from 15MB and up unavailable to the system. Expansion cards can only access memory up to 16MB. The options are *Disabled* (default), *Enabled*.

### **Cache Timing Control**

This option allows you to adjust the access speed of the 82C575M to external cache. The options are *Turbo* (default); *Normal*, *Fast*.

### **DRAM Timing Control**

This option allows you to speed up the data access of the 82C575M. The options are *Fast* (default); *Normal*.

### **SRAM Tag/Alt Bit Config**

This option allows you to select the alter bit that checks whether or not the external cache writes back data to DRAMs. The options are *7Tags+ALT* (default); *10Tags+ALT*, *8Tags*.

### **OnChip IDE First Channel**

When enabled, allows the IDE drive to use the first channel of the primary IDE. The options are *Enabled* (default); *Disabled*.

### **OnChip IDE Second Channel**

When enabled, it allows the IDE drive to use the second channel of the primary IDE. The options are *Enabled* (default); *Disabled*.

### **IDE HDD Block Mode**

When enabled, it allows the system to execute read/write requests to the hard disk in block mode. The options are *Enabled* (default); *Disabled*.

### **IDE Primary Master PIO**

This option allows you to select the first PCI IDE channel of the primary master hard disk mode or to detect it by the BIOS. The options are *Auto* (default); *Mode 0*; *Mode 1*, *Mode 2*, *Mode 3*, *Mode 4*.

### **IDE Primary Slave PIO**

This option allows you to select the first PCI IDE channel of the primary slave hard disk mode or to detect it by the BIOS. The options are *Auto* (default); *Mode 0*, *Mode 1*, *Mode 2*, *Mode 3*, *Mode 4*.

### **IDE Secondary Master PIO**

This option allows you to select the first PCI IDE channel of the secondary master hard disk mode or to detect it by the BIOS. The options are *Auto* (default); *Mode 0*, *Mode 1*, *Mode 2*, *Mode 3*, *Mode 4*.

### **IDE Secondary Slave PIO**

This option allows you to select the first PCI IDE channel of the secondary slave hard disk mode or to detect it by the BIOS. The options are *Auto* (default); *Mode 0*, *Mode 1*, *Mode 2*, *Mode 3*, *Mode 4*.

### **Onboard FDD Controller**

When enabled, it allows the floppy disk controller (FDC) to be activated. The options are *Enabled* (default); *Disabled*.

#### **Onboard Serial Port 1**

If serial port 1 uses the onboard I/O controller, you can modify the serial port parameters. If an I/O card needs to be installed, COM3 and COM4 may be needed. The options are *COM1/3F8* (default); *COM3/3E8*, *COM4/2E8*, *Disabled*.

#### **Onboard Serial Port 2**

This option allows you to select an advanced IR device mode when it is connected to serial port 2. The options are *COM2/2F8* (default); *COM3/3E8*, *COM4/2E8*, *Disabled*.

#### **Serial Port 2 IR Mode**

When enabled, it allows the serial port 2 to be used as an IR port. If the mainboard does not support the IR function (W83787F onboard), set it at *Disabled* to release the serial port 2. The options are *Disabled* (default); *FdxHPSIR1*, *FdxHPSIR2*, *FdxASKIR1*, *FdxASKIR2*, *FdxASKIR3*, *FdxASKIR4*, *HdxHPSIR1*, *HdxHPSIR2*, *HdxASKIR1*, *HdxASKIR2*, *HdxASKIR3*, *HdxASKIR4*.

#### **Onboard Parallel Port**

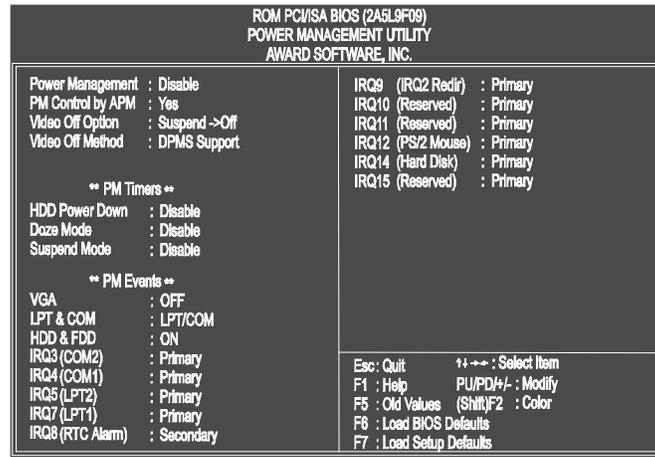
This option allows you to select from a given set of parameters if the parallel port uses the onboard I/O controller. The options are *378H/IRQ7* (default), *278H/IRQ5*, *3BCH/IRQ7*, *Disabled*.

#### **Onboard Printer Mode**

This option allows you to connect with an advanced printer I/O mode. The options are *Normal* (default); *ECP*, *EPP/SPP*, *ECP/EPP*.

## Power Management Setup

The “Power Management Setup” option allows you to reduce the power consumption of the system. This feature turns off the video display and shuts down the hard drive after a period of inactivity.



### Power Management

This field acts as the master control for the power management modes. *Enabled* puts the system into power saving mode after a brief period of system inactivity while *Disabled* disables the power saving features. The options are *Disabled* (default); *Enabled*.

### PM Control by APM

The option *No* allows the BIOS to ignore the APM (Advanced Power Management) specification. Selecting *Yes* will allow the BIOS wait for APM's prompt before it enters Doze mode, Standby mode, or Suspend mode. If the APM is installed, it will prompt the BIOS to set the system into the power saving mode after all tasks are done. The options are *Yes* (default); *No*.

### Video Off Option

This item allows you to activate the video off feature for the display monitor power management. The option *Suspend -> Off* allows the video display to blank out when the system enters Suspend mode. The option *All Modes -> Off* allows the video display to blank out when the system enters Doze mode or Suspend mode. The option *Always On* allows the video display to stay at Standby mode even when the system enters Doze or Suspend mode. The options are *Suspend -> Off* (default); *Always On*; *All Modes -> Off*.

### Video Off Method

This field defines the video off features. *V/H SYNC + Blank* blanks the screen and turns off vertical and horizontal scanning; *DPMS Support* allows the BIOS to control the video display card if it supports the DPMS feature; *Blank Screen* only blanks the screen. Use the latter for display monitors that do not support the “Green” (no power management) feature. Screensaver softwares does not work with this feature. With the CRT monitor shut off, this software cannot display. The options are *DPMS Support* (default); *Blank Screen*; *V/H Sync + Blank*.

### HDD Power Management

Selecting *Disabled* will not turn off the hard disk drive (HDD) motor. Selecting *1 Min., . . . 15 Min.* allows you to define the HDD idle time before HDD enters Power Saving mode. The option *When Suspend* lets BIOS turn the HDD motor off when the system is in Suspend mode. The options *1 Min., . . . 15 Min.* and *When Suspend* will not work concurrently. When HDD is in Power Saving mode, any access to the HDD will wake the HDD up. The options are *Disabled* (default); *1 Min.; . . . 15 Min., When Suspend*.

### Doze Mode

Sets the period of time after which Doze mode activates. User has the option to set it at *8 Sec; 32 Sec; 2 Min; 8 Min; 16 Min; or 32 Min; 40 Min; or 1 Hour*. The default value is *Disabled*.

### Suspend Mode

Sets the period of time after which Suspend mode activates. User has the option to set it at *1 Min; 2 Min; 5 Min; 10 Min; 20 Min; 30 Min; or 1 Hour*. The default value is *Disabled*.

### VGA

Selecting *ON* will enable the power management timer when a no activity event is detected in the VGA. Select *OFF* to disable the power management timer even if a no activity event is detected. The options are *OFF* (default), *ON*.

### LPT & COM

Selecting *LPT/COM* will enable the power management timer when a no activity event is detected in the LPT and COM ports. Selecting *LPT* or *COM* will enable the power management timer when a no activity event is detected in the LPT or COM port. Selecting *NONE* will disable the power management timer even if a no activity event is detected. The options are *LPT/COM* (default); *NONE; LPT; COM*.

### HDD & FDD

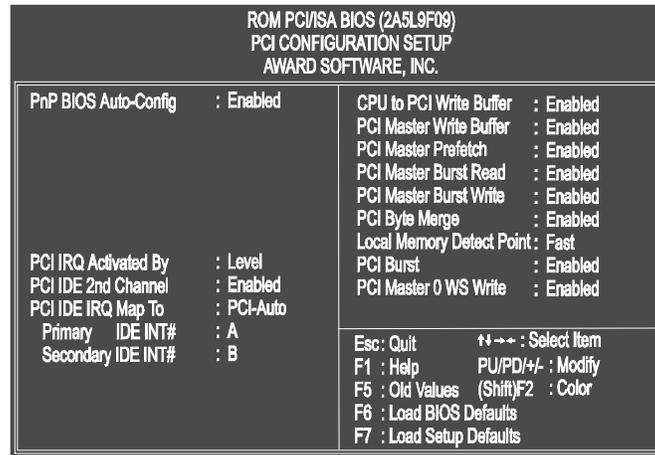
Selecting *ON* will enable the power management timer when a no activity event is detected in the hard disk drive and floppy disk drive. Selecting *OFF* will disable the power management timer even if a no activity event is detected. The options are *ON* (default); *OFF*.

### IRQ# Activity

When set at *Primary*, the processor will power down only after BIOS detects a no IRQ activity during the time specified by the Suspend timer. If set at *Secondary*, the system will distinguish whether an interrupt accesses an I/O address or not. If it does, the system enters the Standby mode. If not, the system enters Dream mode; that is, the system goes back to full-on status but leaves the display monitor blank. For instance, when the system connects to a LAN and receives an interrupt from its file server, the system will enter Dream mode to execute the corresponding calling routine. The options are *Primary*; *Secondary*. The default value for IRQ 3, 4, 5, 7, 9, 10, 11, 12, 14, 15 is *Primary* while the default value for IRQ8 is *Secondary*.

### PCI Configuration Setup

The “PCI Configuration Setup” option configures the PCI Bus slots. All PCI Bus slots on the system use INTA#, thus all installed PCI cards must be set to this value. The PCI slots can be used either as a master or a slave slot. A master slot is an agent slot that initiates a Bus transaction while a slave slot is an agent slot that responds to a Bus transaction initiated by a master slot.



### PNP BIOS Auto-Config

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

### Available IRQ

When the above item PNP BIOS Auto-Config is set at *Disabled*, it allows you to assign an available IRQ to the attached PCI device that needs an IRQ to access the mainboard. The options are *NA* (default); *5, 7, 9, 10, 11*.

#### **PCI IRQ Activated By**

If the IDE card you are using is triggered by edge, set it at *Edge*. The options are *Level* (default); *Edge*.

#### **PCI IDE 2<sup>nd</sup> Channel**

When enabled, it allows you to use the second channel of the PCI IDE. The options are *Enabled* (default); *Disabled*.

#### **PCI IDE IRQ Map To**

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

#### **CPU To PCI Write Buffer**

When enabled, it allows data and address access to the internal buffer of the 82C576MV so that the processor can be released from the Wait state. The options are *Disabled* (default), *Enabled*.

#### **PCI Master Write Buffer**

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

#### **PCI Master Prefetch**

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

#### **PCI Master Burst Read**

When enabled, it 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 system. The options are *Enabled* (default), *Disabled*.

#### **PCI Master Burst Write**

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

#### **PCI Byte Merge**

When enabled, it allows the PCI cycle to send data out only after the internal buffer of the 82C576M is filled up completely. If you are using a Trident 9440 PCI VGA card (VC-910), ADVANCE ALG 2301 PCI VGA card, or a KELVIN 64-PCI (Cirrus

5434) PCI VGA card, keep this feature *Disabled*. The options are *Enabled* (default), *Disabled*.

**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, set it at *Medium*. The options are *Fast* (default), *Medium*.

**PCI Burst**

When enabled, data transfer on PCI Buses will improve. Disable this item when trouble-shooting the system. The options are *Enabled* (default), *Disabled*.

**PCI Master 0 WS Write**

When enabled, it allows a zero wait cycle delay when the PCI master drive writes data to DRAM. The options are *Enabled* (default), *Disabled*.

**PCI Slots Interrupt Assignments**

SLOT NUMBER	INT OF SLOT	INT OF VT82C576
Slot 1	A	A
	B	B
	C	C
	D	D
Slot 2	A	B
	B	C
	C	D
	D	A
Slot 3	A	C
	B	D
	C	A
	D	B

**Load BIOS Defaults**

The “Load BIOS Defaults” option allows you to load the troubleshooting default values permanently stored in the BIOS ROM. These default settings are non-optimal and disables all high performance features. To load these default settings, highlight “Load BIOS Defaults” on the main screen and then press the <Enter> key. The system displays a confirmation message on the screen. Press the <Y> key and then the <Enter> key to confirm. Press the <N> key and then the <Enter> key to abort. This feature does not affect the fields on the Standard CMOS Setup screen.



## ***Load Setup Defaults***

The “Load Setup Defaults” option allows you to load the default values to the system configuration fields. These default values are the optimized configuration settings for the system. To load these default values, highlight “Load Setup Defaults” on the main screen and then press the <Enter> key. The system displays a confirmation message on the screen. Press the <Y> key and then the <Enter> key to confirm. Press the <N> key and then the <Enter> key to abort. This feature does not affect the fields on the Standard CMOS Setup screen.

## ***Supervisor Password and User Password***

These two options set the system passwords. “Supervisor Password” sets a password that will be used to protect the system and the Setup utility; “User Password” sets a password that will be used exclusively on the system. By default, the system comes without any passwords. To specify a password, highlight the type you want and then press the <Enter> key. A password prompt appears on the screen. Taking note that the password is case sensitive, and can be up to 8 alphanumeric characters long, type in your password and then press the <Enter> key. The system confirms your password by asking you to type it again. After setting a password, the screen automatically reverts to the main screen. To implement the password protection, specify in the “Security Option” field of the BIOS Features Setup screen when the system will prompt for the password. If you want to disable either password, press the <Enter> key instead of entering a new password when the “Enter Password” prompt appears. A message confirms the password has been disabled.

### **Clear Password**

If you were to forget your password, exit Windows and turn off the system power first to remove the system unit cover. Locate jumper JCP on the mainboard and cap it. After restoring the system unit cover, power on the system and old password is now cleared from memory. To set new password, exit Windows and turn off the system power to remove the system unit cover. Locate jumper JCP on the mainboard and remove the jumper cap. After restoring the system unit cover, power on the system and enter Setup to set new password.

## ***IDE HDD Auto Detection***

The “IDE HDD Auto Detection” option detects the parameters of an IDE hard drive and automatically enters them into the Standard CMOS Setup screen. Up to four IDE drives can be detected, with parameters for each listed inside the box. To accept the optimal entries, press the <Y> key or else select from the numbers displayed under the OPTIONS field; to skip to the next drive, press the <N> key. If you accept the values, the parameters will appear listed beside the drive letter on the screen. The process then proceeds to the next drive letter. Pressing the <N> key to skip rather than to accept a set of parameters causes the program to enter zeros after that drive letter.

Remember that if you are using another IDE controller that does not feature Enhanced IDE support for four devices, you can only install two IDE hard drives. The IDE controller must support the Enhanced IDE features in order to use Drive E and Drive F.

When auto-detection is completed, the program automatically enters all entries you accepted on the field for that drive in the Standard CMOS Setup screen. Skipped entries are ignored and are not entered in the screen.

If you are auto-detecting a hard drive that supports the LBA mode, three lines will appear in the parameter box. Choose the line that lists LBA for an LBA drive. Do not select Large or Normal.

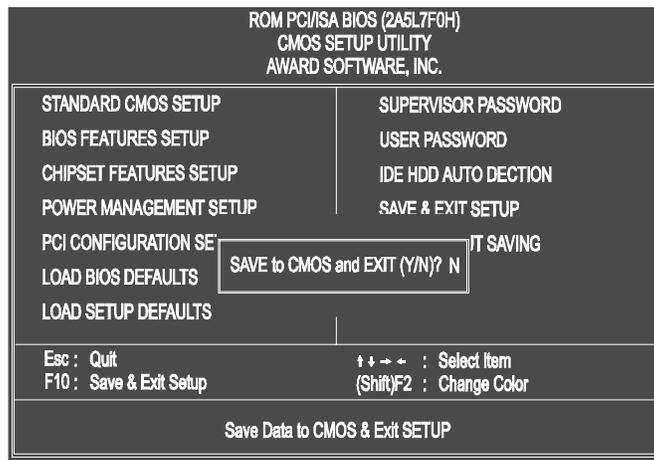
The auto-detection feature can only detect one set of parameters for a particular IDE hard drive. Some IDE drives can use more than one set. This is not a problem if the drive is new and there is nothing on it.

<p><b>NOTE :</b> If your hard drive was already formatted on an older previous system, incorrect parameters may be detected. You will need to enter the correct parameters manually or use low-level format if you do not need the data stored on the hard drive.</p>
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If the parameters listed differ from the ones used when the drive was formatted, the drive will not be readable. If the auto-detected parameters do not match the ones that should be used for your drive, do not accept them. Press the <N> key to reject the presented settings and enter the correct ones manually from the Standard CMOS Setup screen.

## Save & Exit Setup

Select this option to save into the CMOS memory all modifications you specified during the current session. To save the configuration changes, highlight the “Save & Exit Setup” option on the main screen and then press the <Enter> key.



## Exit Without Saving

Select this option to exit the Setup utility without saving the modifications you specified during the current session. To exit without saving, highlight the “Exit Without Saving” option on the main screen and then press the <Enter> key.

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