

VT-502



MAINBOARD 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 VT-502 mainboard combines the advanced capabilities of the Intel 82430VX PCIset with a 321-pin ZIF socket and voltage regulator which supports the full range of Intel Pentium® processors, including the Intel Pentium® processor with MMX™ technology as well as AMD-K5/K6 and Cyrix/IBM 6x86™/6x86MX™ processors to provide the ideal platform for building the high performance Microsoft Windows™ multimedia systems. The VT-502 achieves the highest level of system responsiveness using up to 128 MB high-speed EDO DRAM or 128MB lightning-fast SDRAM coupled with an onboard 512KB/256KB Pipeline Burst SRAM Level 2 cache.

Built on the highly concise Baby AT form factor, the VT-502 integrates a full set of I/O features onboard, including two 16550A UART compatible serial ports, one EPP/ECP capable parallel port and support for state-of-the-art Universal Serial Bus (USB) through the optional USB riser card providing ease-of-use and high-speed Plug & Play connections to future USB compliant peripheral devices. System I/O connectivity is further enhanced by an IrDA compliant serial port, an optional PS/2 Keyboard & PS/2 Mouse port and onboard SIR support.

Ample expansion is provided for with three 16-bit ISA slots and four 32-bit PCI slots. The VT-502 also comes with a built-in Enhanced PCI Bus Master PCI IDE controller that provides high speed connections to a full range of IDE devices including HDD, CD-ROM and Tape-Drives, and delivers ultra fast data transfer up to 20MB/sec through its support for PIO Mode3, Mode4 and DMA Mode 2.

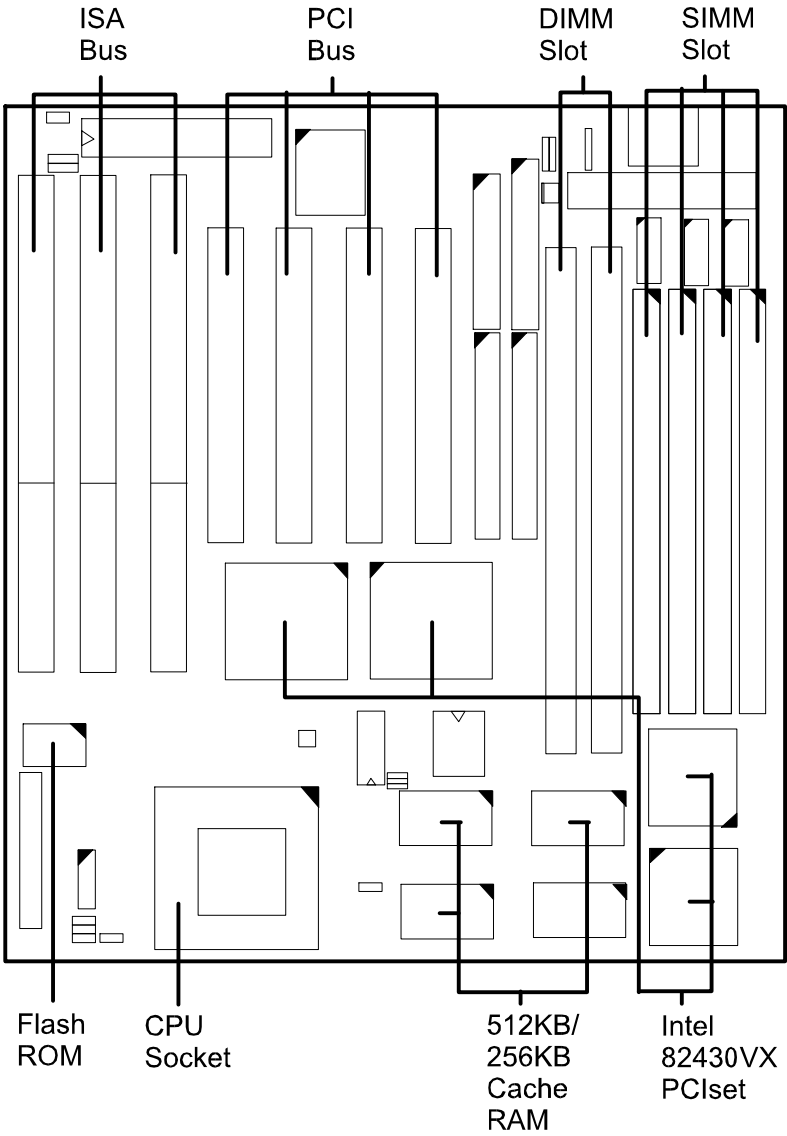
This chapter gives you a brief overview of the VT-502 mainboard. In addition to basic information on the board's main components and features, it also provides advice on how to upgrade and expand it. For updated BIOS, drivers, or product release information, please visit FIC's home page at: <http://www.fic.com.tw>. Congratulations on your decision to adopt the VT-502 mainboard. With its high-speed PCI local bus architecture and ultra-fast I/O connections, the VT-502 provides the ultimate solution for optimizing the performance of your high-end system.

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 VT-502 mainboard
- ☐ This user manual
- ☐ One IDE HDD cable
- ☐ One floppy disk drive cable
- ☐ One printer and COM1 cable
- ☐ One COM2 cable
- ☐ One USB riser card (optional)
- ☐ Software utility

The VT-502 Mainboard



Main Features

The VT-502 mainboard comes with the following high-performance features:

- Easy Installation
Award BIOS with support for Plug and Play, auto detection of Hard Drive, LS-120 drives, and IDE features, MS Windows 95.
- Flexible Processor Support
Onboard 321-pin ZIF socket support complete range of leading-edge processors:
Intel Pentium® Pentium MMX™ technology P55C 166/200/233 MHz processors.
Intel Pentium® Pentium P54C/P54CS/90/100/120/133/150/166/200 MHz processors.
AMD-K6™-166 (166 MHz) / K6-200 (200 MHz) processors.
AMD-K5™- PR90 (90 MHz) / K5-PR100 (100 MHz) / K5-PR120 (90 MHz) / K5-PR133 (100 MHz) / K5-PR150 (105 MHz) / K5-PR166 (116 MHz) / K5-PR200 (133 MHz) processors.
Cyrix 6x86MX™- PR166 (150 MHz) / 6x86MX-PR200 (166 MHz) processors. Please read page 24 for details.
Cyrix 6x86™- PR133+ (110 MHz) / 6x86-PR150+ (120 MHz) / 6x86-PR166+ (133 MHz) processors.
IBM 6x86MX™- PR166 (150 MHz) / 6x86MX-PR200 (166 MHz) processors. Please read page 26 for more information.
IBM 6x86™- PR133+ (110 MHz) / 6x86-PR150+ (120 MHz) / 6x86-PR166+ (133 MHz) processors.
- Various External Bus and CPU/Bus Frequency Ratio Support
The mainboard supports the Bus frequency of 55 / 60 / 66MHz and the CPU/Bus frequency ratio of 1x / 1.5x / 1.75x / 2x / 2.5x / 3x / 3.5x / 4x. (Please refer to Sec. **Install the CPU** in Chapter 2 for more information).

- ❑ **Leading Edge Chipset**
Intel 82430VX chipset, including a CPU interface controller, advanced cache controller, integrated DRAM controller, synchronous ISA bus controller, PCI local bus interface, integrated power management unit.
- ❑ **Ultra-fast Level II Cache**
Supports onboard 512KB/256KB synchronous PBSRAM direct-mapped write-back cache memory.
- ❑ **Versatile Main Memory Support**
Accepts up to 128MB RAM in two banks using 72-pin SIMMs of 4, 8, 16, 32MB or using two 168-pin DIMM with support for SDRAM or EDO memory.
- ❑ **ISA & PCI Expansion Slots**
Three 16-bit ISA and four 32-bit PCI expansion slots provide all the room you need to install a full range of add-on cards.
- ❑ **USB Support**
Two USB ports on an optional riser card allow convenient, high-speed Plug and Play connections to the growing number of USB compliant external peripheral devices on the market.
- ❑ **Enhanced PCI Bus Master IDE Controller**
Integrated Enhanced PCI local bus IDE controller with two connectors supports up to four IDE devices such as Hard Disk, CD-ROM or Tape Backup drives via two channels for high speed data throughput. This controller supports PIO Modes 3 and 4, and DMA Mode 2 for optimized system performance.
- ❑ **Super Multi I/O**
Integrated SMC FDC37C669 / LG Prime 3C Super I/O chipset features two 16550A UART compatible serial ports, one EPP/ECP capable parallel port, one IR port, and one Floppy Disk Drive connector.

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 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.

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 no. 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.

Both ISA and PCI add-on cards may need to use IRQs. System IRQs are available to add-on cards installed on the ISA bus first; the remaining ones can be used by cards installed on the PCI 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 any 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. In the case of PCI add-on cards, the BIOS automatically assigns an IRQ card to the PCI slot the card is installed in.

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 of over 1.2GB and faster data transfer rates 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.

Serial Infrared (SIR) Connections

This mainboard features support for highly-sophisticated SIR 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.

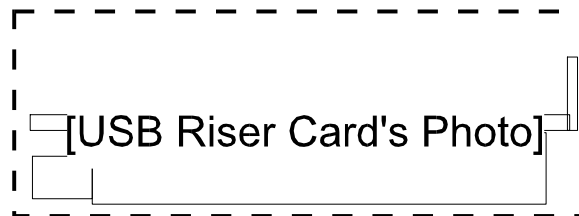
The I/O chipset on this mainboard features a SIR interface that is fully compliant with the IrDA standard. An IrDA device can be installed via a 9-pin D-SUB connector in the rear panel of the computer which is linked by a cable to the onboard IrDA pinhead.

The serial port COM2 on this mainboard is designed to be an SIR compliant port. If you wish to install the SIR connection feature, you need to adjust the BIOS option for high-speed performance.

Universal Serial Bus (USB) Functionality

USB overcomes conventional I/O bottlenecks by combining the I/O ports into a single dual-channel connector. For optimum ease of use and flexibility, USB not only allows the automatic detection and configuration of peripherals after installation, but also enables the simultaneous connection.

This mainboard features an optional USB riser card (see the photo below) with bracket that can be installed in one of the I/O expansion slots on the rear panel of the system, as shown in the illustration below. It provides fast and convenient Plug and Play peripheral connections outside your computer, allowing you take full advantage of the universal functionality and flexibility of USB technology.



Installation Procedures

The VT-502 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.

To set up your computer, you should follow these installation steps:

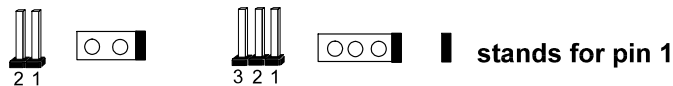
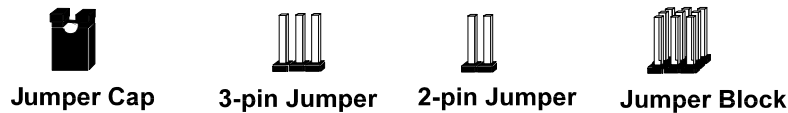
- Step 1 -
Set system jumpers
- Step 2 -
Install System RAM modules
- Step 3 -
Install the CPU
- Step 4 -
Install expansion cards
- Step 5 -
Connect cables and power supply
- Step 6 -
Set up BIOS feature (Please read Chapter Three.)

CAUTION : If you use an electric drill to install this mainboard on your chassis, please wear a static wrist strap. The recommended electric drill torque is from 5.0 to 8.0 kg/cm to avoid damaging the chips' pins.
--

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. 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:



Jumpers are shown as above



Jumper cap is shown as above

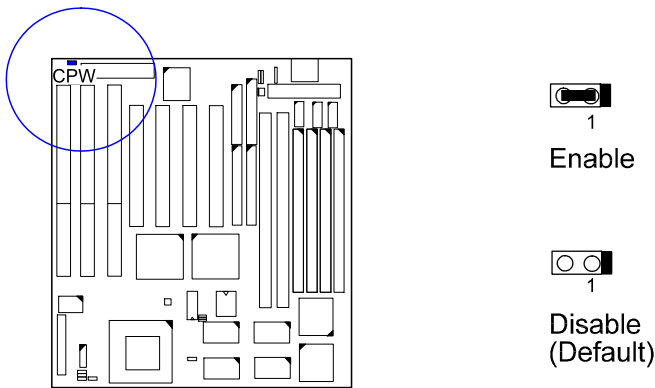


Jumpers in a Block

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.

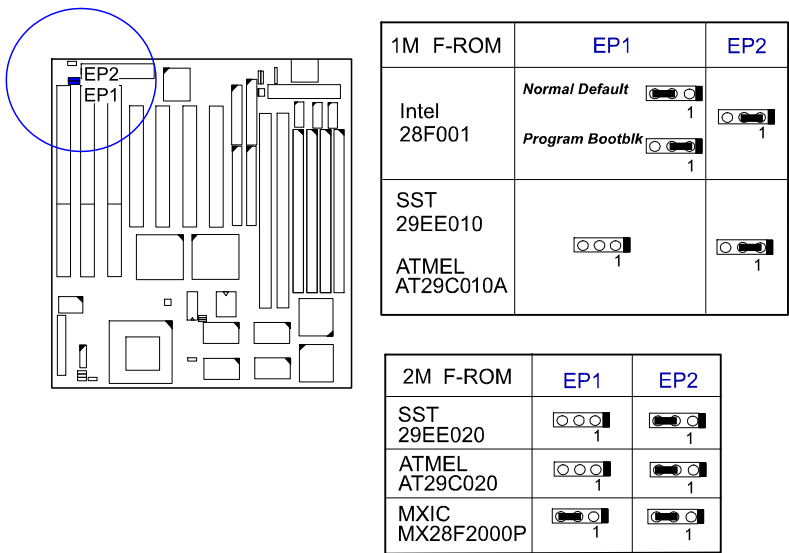
Clear Password: CPW

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: EP1, EP2

These two jumpers allow you to configure the Flash EPROM chip



2). Install System RAM Modules

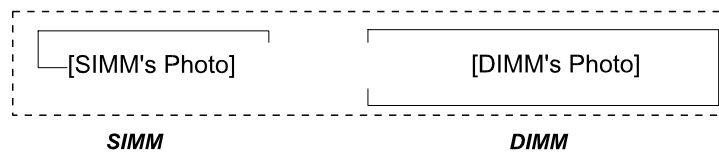
DRAM and SDRAM

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 VT-502's RAM is comprised of [four industry standard 72-pin Single In-line Memory Modules \(SIMMs\)](#) and [two 168-pin Dual In-line Memory Modules \(DIMMs\)](#). Each SIMM socket supports from [4 to 128MB FPM \(Fast Page Mode\)](#) and [high-speed EDO \(Extended Data Out\) DRAM](#). Each DIMM socket is able to support up to 64MB EDO DRAM and lightning-fast SDRAM (Synchronous DRAM).

SDRAM is an advanced new memory technology that boosts overall system performance with its ability to synchronize all operations with the processor clock signal. This makes the implementation of control interfaces easier, and speeds up column access time. SDRAM features an on-chip burst counter that can be utilized to increment column addresses for very fast burst access, which means that SDRAM allows new memory access to be initiated before the preceding access has been finished.

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.



RAM Module Configuration

SIMMs and DIMMs in Bank 0 and Bank 1 can be installed in many combinations. Some of them are listed in the following table. Please note that SIMMs and DIMMs should not be installed at the same time.

(Unit : MB)

TOTAL MEMORY	SIMM 1 & 2 (Bank 0)	SIMM 3 & 4 (Bank 1)	DIM1 (Bank 0)	DIM2 (Bank 1)
8	4 & 4			
			8	
16	8 & 8			
			16	
32	16 & 16			
			32	
64	32 & 32			
			64*	
128	64 & 64			
			64*	64*

NOTE :

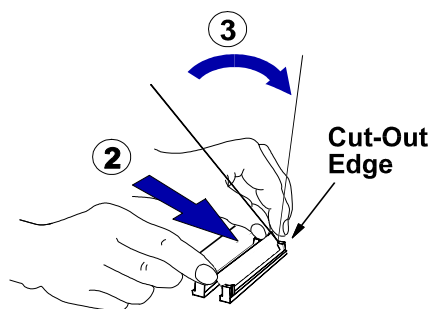
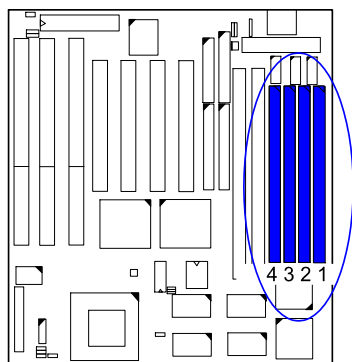
- * A RAM module of this size was not available for testing at press time.
- DIM1 and DIM2 only support 3.3V (unbuffered) EDO and SDRAM modules.
- DIM1 and SIMM1 are shared, so are DIM2 and SIMM2. That is, it is not allowed to install RAM modules on DIM1 and SIMM1 at the same time, or on DIM2 and SIMM2 at the same time.
- This mainboard supports the SIMMs (without ECC support or parity check) with latency time are 70ns, 60ns; and DIMMs with latency times of 10ns, 12ns.

Install SIMMs

Complete the following procedures to install SIMMs:

CAUTION : Always turn the system power off before installing or removing any device; and 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; and the BIOS automatically configures the memory size.

2. Carefully fit a SIMM at a 45 degree angle into each empty socket to be populated. All the SIMMs must face the same direction.
3. Swing each SIMM into its upright, locked position.
When locking a SIMM in place, push on each end of the SIMM - do not push in the middle, as shown above.

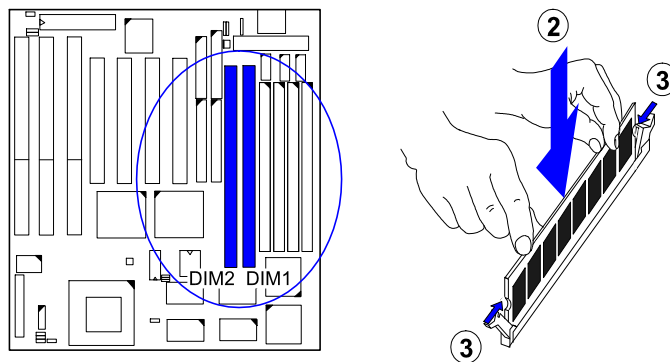
Remove SIMMs

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

Install DIMMs

Complete the following procedures to install DIMMs:

1. Locate the DIMM slots on the mainboard.



2. Install the DIMM straight down into the DIMM slot with both hands.
3. The clips of the slot will close up to hold the DIMM in place when the DIMM touches the slot's bottom.

Remove DIMMs

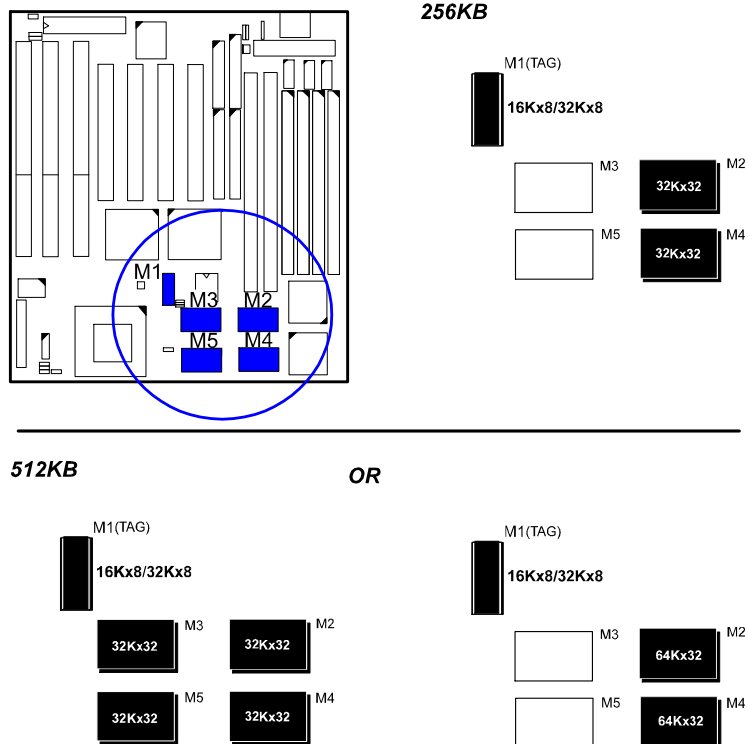
Press the clips with both hands to remove the DIMM.

Cache Memory

The mainboard comes with onboard **512KB (256KB is optional) synchronous 3V Pipeline Burst SRAMs**. 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.

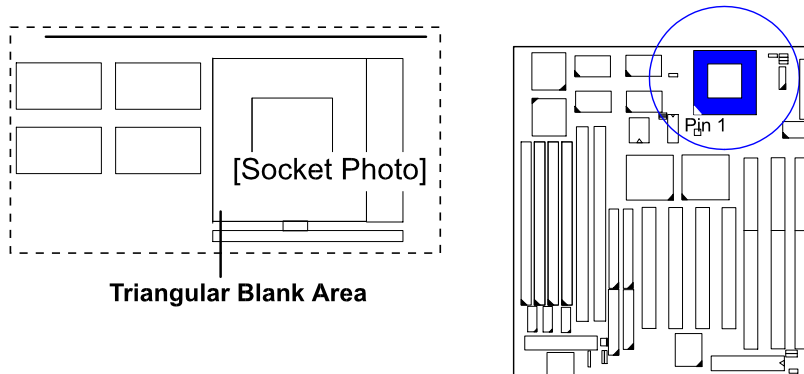
Pentium mainboards may implement various types of L2 cache SRAMs. Pipeline Burst SRAM is one of them, delivering the best price performance ratio. They perform much better than asynchronous SRAMs.

NOTE: The cache memory can not be upgraded by end users.



3). Install the CPU

The CPU module resides in the Zero Insertion Force (ZIF) socket on the mainboard.

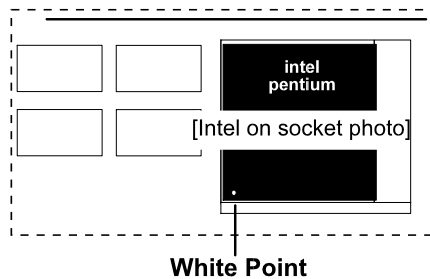


CAUTION :

1. Always turn the system power off before installing or removing any device.
2. Always observe static electricity precautions. See "Handling Precautions" at the start of this manual.
3. Inserting the CPU chip incorrectly may damage the chip.

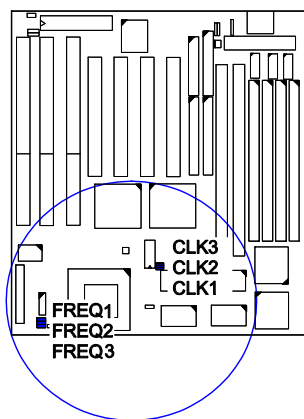
To install the CPU, do the following:

1. Lift the lever on the side of the CPU socket.
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 notch to correctly orientate the chip. Align the notch with pin one of the socket. Pin one is located in the blank triangular area. Do not force the chip.
4. Swing the lever to the down position to lock the CPU in place.



CPU External Clock (BUS) Frequency: CLK1, CLK2, CLK3

The table below shows the jumper settings for the different CPU speed configurations.



BUS CLOCK	CLK1	CLK2	CLK3
66MHz			
60MHz			
55MHz			

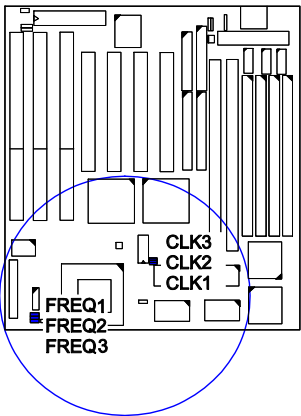
CPU to Bus Frequency Ratio: FREQ1, FREQ2, FREQ3

These three jumpers are used in combination to decide the ratio of the internal frequency of the CPU to the bus clock.

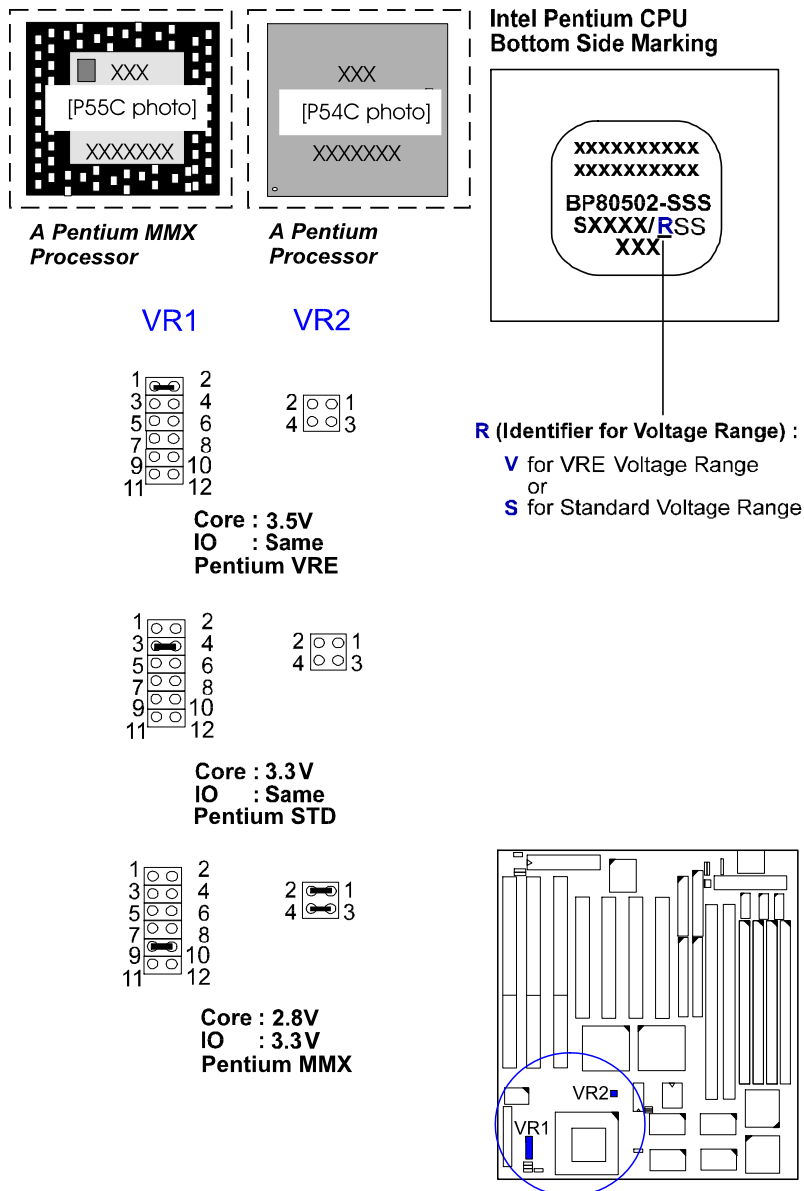
RATIO				FREQ1	FREQ2	FREQ3
Pentium	Pentium MMX /K6 / 6x86MX	K5	6x86			
3 x	3 x	2 x	4 x			
2.5 x	2.5 x	1.75 x	1 x			
2 x	2 x	-----	2 x			
1.5 x	3.5 x	1.5 x	3 x			

Intel Pentium/Pentium MMX CPUs
Frequency

TYPE	INTERNAL FREQ.	BUS CLOCK	CLK1	CLK2	CLK3	RATIO	FREQ1	FREQ2	FREQ3
Penitum MMX	233MHz	66MHz				3.5 x			
	200MHz	66MHz				3 x			
	166MHz	66MHz				2.5 x			
Penitum	200MHz	66MHz				3 x			
	166MHz	66MHz				2.5 x			
	150MHz	60MHz				2.5 x			
	133MHz	66MHz				2 x			
	120MHz	60MHz				2 x			
	100MHz	66MHz				1.5 x			
	90MHz	60MHz				1.5 x			



Voltage



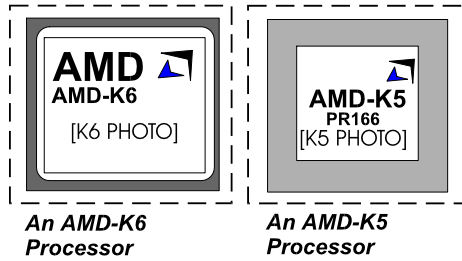
R (Identifier for Voltage Range) :

V for VRE Voltage Range
or
S for Standard Voltage Range

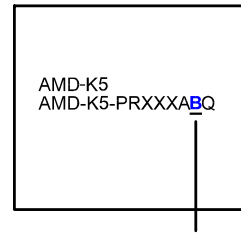
AMD-K5/K6 CPUs
Frequency

MODEL	INTERNAL FREQ.	BUS CLOCK	CLK1	CLK2	CLK3	RATIO	FREQ1	FREQ2	FREQ3
K6-200	200MHz	66MHz							
K6-166	166MHz	66MHz							
K5-PR200	133MHz	66MHz							
K5-PR166	116MHz	66MHz				1.75 x			
K5-PR150	105MHz	60MHz				1.75 x			
K5-PR133	100MHz	66MHz				1.5 x			
K5-PR120	90MHz	60MHz				1.5 x			
K5-PR100	100MHz	66MHz				1.5 x			
K5-PR90	90MHz	60MHz				1.5 x			

Voltage



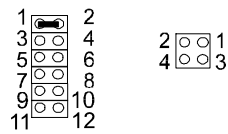
AMD-K5 CPU Top Side Marking



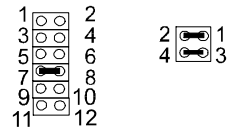
V (Identifier for Operation Voltage)

VR1

VR2

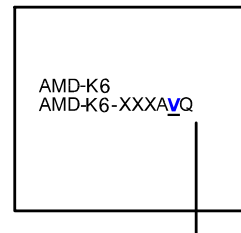


Core : 3.5V
IO : Same
AMD-K5 - B



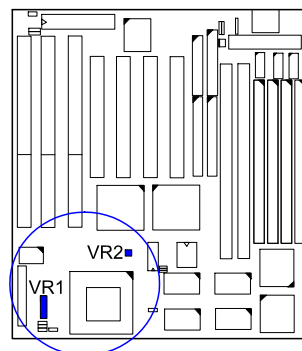
Core : 2.9V
IO : 3.3V
AMD-K6 (166, 200 MHz)

AMD-K6 CPU Top Side Marking



V (Identifier for Operation Voltage) :

N 3.1-3.3V Core/3.135-3.6V I/O
L 2.755-3.045V Core/3.135-3.6V I/O



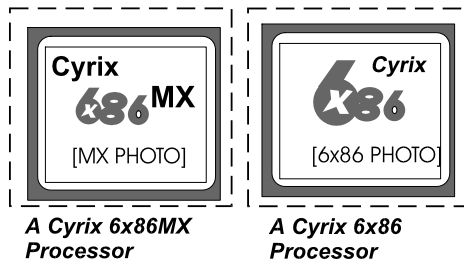
Cyrix 6x86/6x86MX CPUs

Frequency

MODEL	INTERNAL FREQ.	BUS CLOCK	CLK1	CLK2	CLK3	RATIO	FREQ1	FREQ2	FREQ3
6x86MX-PR200	180MHz	60MHz				3 x			
	166MHz	66MHz				2.5 x			
	165MHz	55MHz				3 x			
6x86MX-PR166	150MHz	60MHz				2.5 x			
	138MHz	55MHz				2.5 x			
	133MHz	66MHz				2 x			
6x86-PR166+ 6X86L-PR166+	133MHz	66MHz				2 x			
6x86-PR150+ 6X86L-PR150+	120MHz	60MHz				2 x			
6x86-PR133+ 6X86L-PR133+	110MHz	55MHz				2 x			

NOTE : Please refer to your Cyrix CPU top marking about the actual CPU speed and ratio.

Voltage

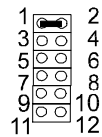


Cyrix 6x86 CPU Top Side Marking

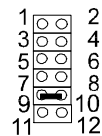
6x86-PR166⁺GP
133 MHz
3.52V **(028)**

VR1

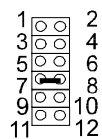
VR2



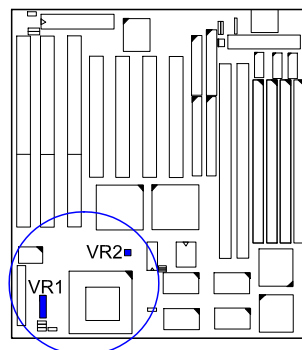
Core : 3.5V
IO : Same
Cyrix 6x86-028



Core : 2.8V
IO : 3.3V
Cyrix 6x86L



Core : 2.9V
IO : 3.3V
Cyrix 6x86MX



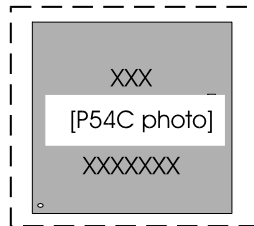
IBM 6x86/6x86MX CPUs

Frequency

MODEL	INTERNAL FREQ.	BUS CLOCK	CLK1	CLK2	CLK3	RATIO	FREQ1	FREQ2	FREQ3
6x86MX-PR200	180MHz	60MHz				3 x			
	166MHz	66MHz				2.5 x			
	165MHz	55MHz				3 x			
6x86MX-PR166	150MHz	60MHz				2.5 x			
	138MHz	55MHz				2.5 x			
	133MHz	66MHz				2 x			
6x86-PR166+ 6X86L-PR166+	133MHz	66MHz				2 x			
6x86-PR150+ 6X86L-PR150+	120MHz	60MHz				2 x			
6x86-PR133+ 6X86L-PR133+	110MHz	55MHz				2 x			

NOTE : Please refer to your IBM CPU top marking about the actual CPU speed and ratio.

Voltage



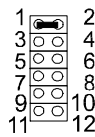
An IBM 6x86 Processor

IBM 6x86 CPU Top Side Marking

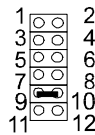
6x86-PR166⁺GP
133 MHz
3.52V **(028)**

VR1

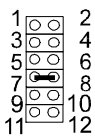
VR2



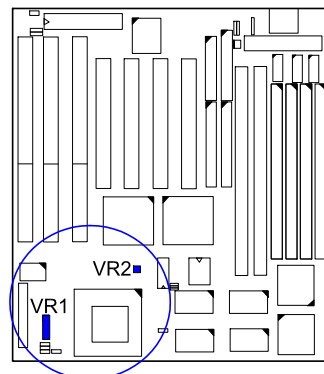
Core : 3.5V
IO : Same
IBM 6x86-028



Core : 2.8V
IO : 3.3V
IBM 6x86L

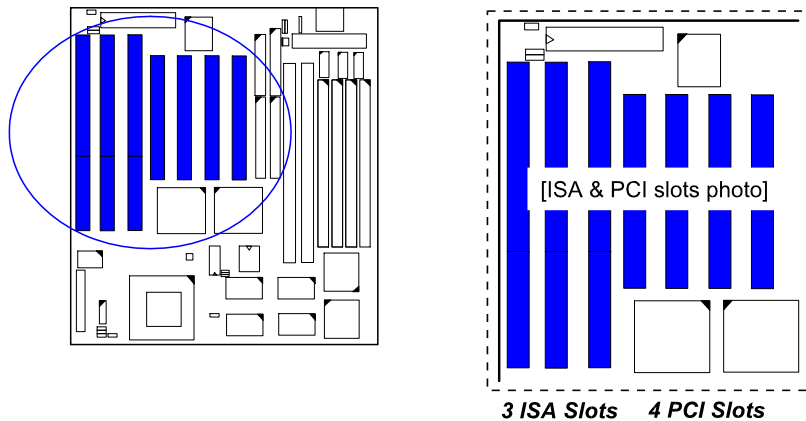


Core : 2.9V
IO : 3.3V
IBM 6x86MX



4). Install Expansion Cards

Your mainboard features **three 16-bit ISA Bus** and **four 32-bit PCI Bus** expansion slots. (See the photo below right.)



This section describes how to connect an expansion card to one of your system's expansion slots. Expansion cards are printed circuit boards that, when connected to the mainboard, increase the capabilities of your system. For example, expansion cards can provide video and sound capabilities.

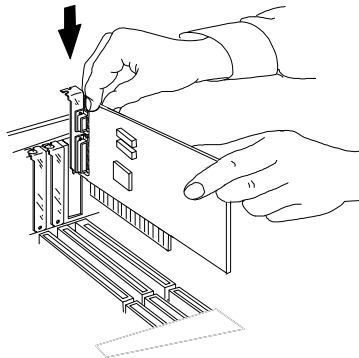
CAUTION :

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

To install an expansion card, do the following:

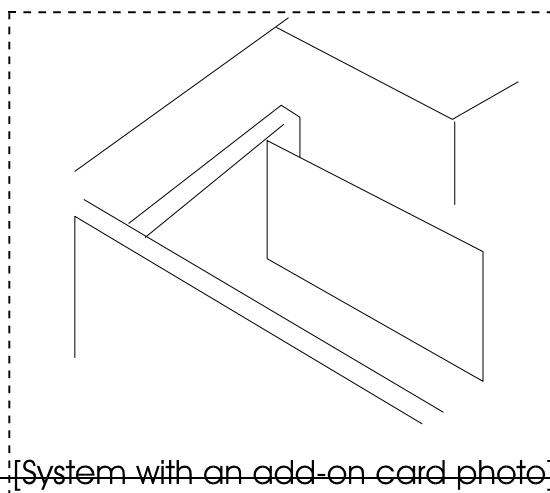
1. Remove the chassis cover and select an empty expansion slot.
2. Remove the corresponding slot cover from the chassis.
Unscrew the mounting screw that secures the slot cover and pull the slot cover out from the chassis. Keep the slot cover mounting screw nearby.

3. Holding the edge of the peripheral card, carefully align the edge connector with the expansion slot. (See figure below.)



4. 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 card is firmly seated inside the slot.
5. Secure the board with the mounting screw removed in Step 2. Make sure that the card has been placed evenly and completely into the expansion slot.

The photo below shows an add-on card that was installed in a system.

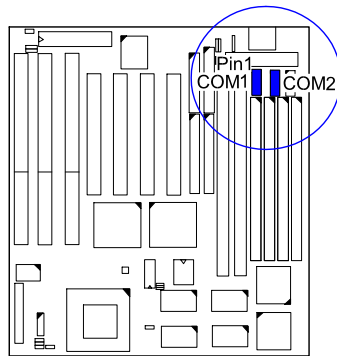


[System with an add-on card photo]

5). Connector Cables and Power Supply

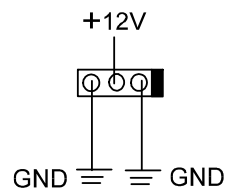
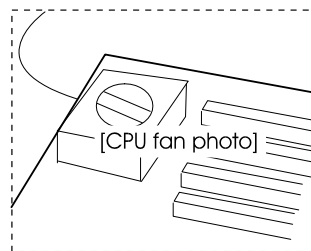
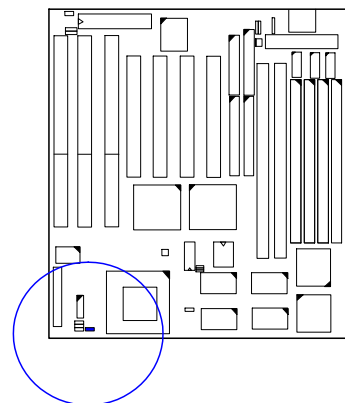
Serial Port Connectors: COM1, COM2

These two connectors allow you to connect with your devices that take serial ports, such as a serial mouse or a modem. Usually, it is recommended to connect your serial mouse to COM1 and your 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.



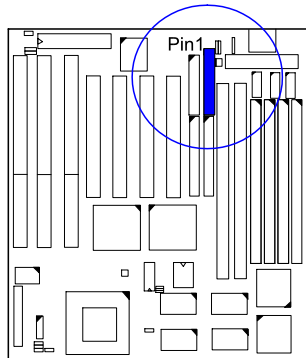
CPU Fan Connector: FAN

This connector is connected to the CPU fan.



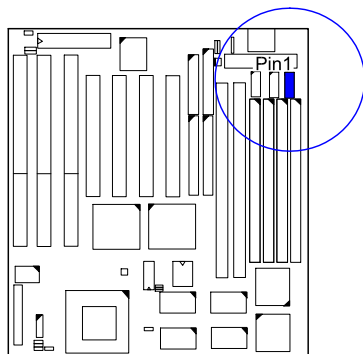
Floppy Diskette Drive Connector: FLOPPY

This 34-pin block connector connects to your floppy disk drive using the cable that is provided with this mainboard.



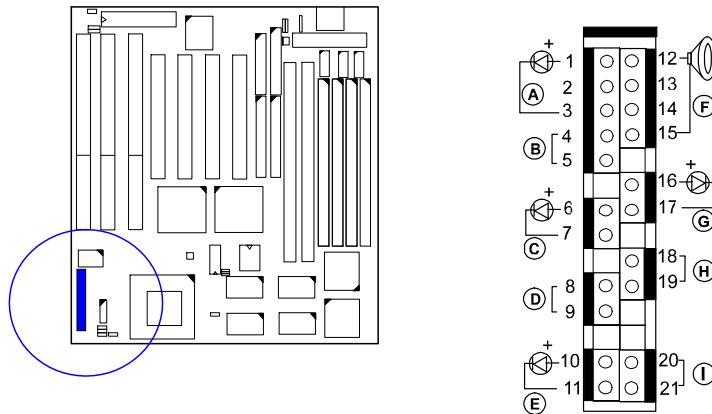
Infrared Connector: IR

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.



Front Panel Block Connector: *F_PNL*

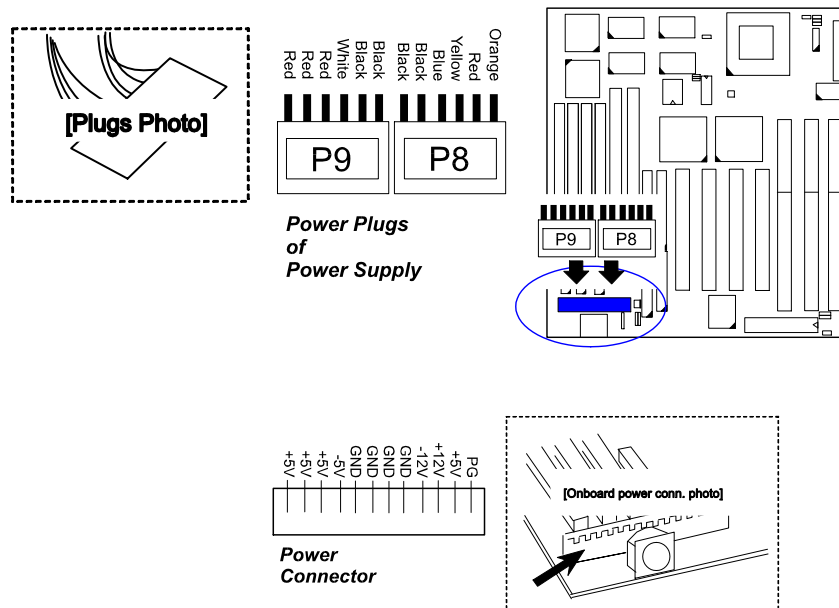
This block connector concludes: PW_LED, KB_LOCK, TB_LED, SP_SW, SPK, SP_LED, IDE_LED, RPW_SW, and RST connectors.



Item	Connector	Pin Type	Feature
A	PW_LED	2-pin male	indicates the system power status
B	KB_LOCK	2-pin male	allows the keyboard to access the system
C	TB_LED	2-pin male	indicates the system speed is in normal or turbo speed
D	SP_SW	2-pin male	Suspend Mode switch
E	SP_LED	2-pin male	indicates the system into Suspend Mode when LED lit
F	SPK	4-pin male	connects to speaker
G	IDE_LED	2-pin male	indicates the IDE HDD I/O access LED lit
H	RPW_SW	2-pin male	Remote Power switch
I	RST	2-pin male	allows you to reset the system

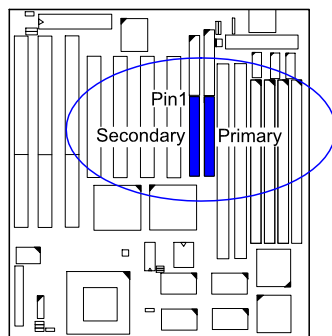
Standard Power Connector: *POWER*

This 12-pin block connector is used for connecting to the standard 5V power supply. In the picture below, 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 in the middle.



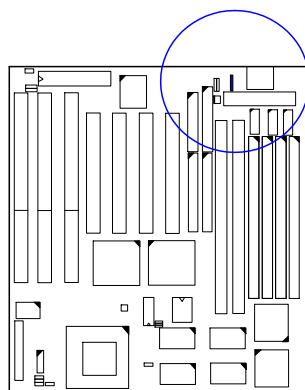
IDE HDD Device Connectors: PRIMARY, SECONDARY

These two 40-pin block connectors 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, please use the SECONDARY connector.



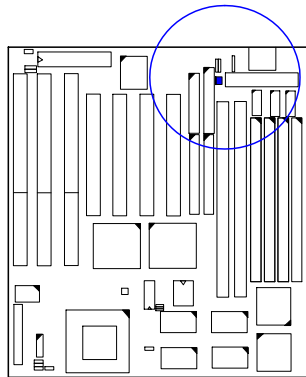
PS/2 Mouse Connector: MS_CON

This connector is connected to the PS/2 mouse.



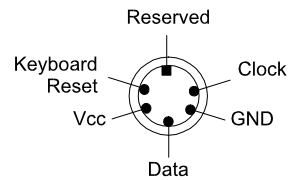
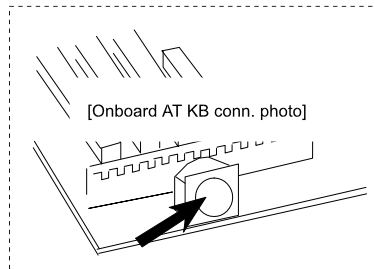
Remote Power Supply Connector: RPW_CON

This 3-pin male connector allows you to enable (or disable) the system power if the RPW_SW is on (or off).

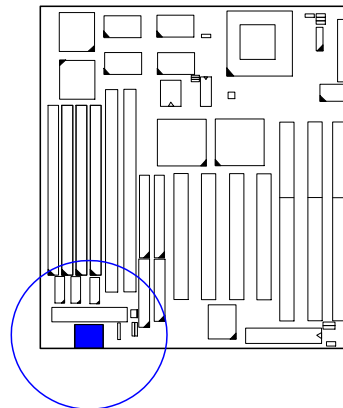


AT Keyboard Connector: AT_KB

This 5-pin female connector is used for your 101-key enhanced keyboard or 106-key Windows 95 keyboard.

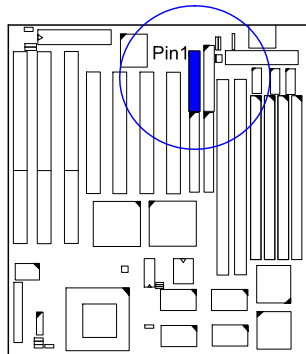


Plug of Keyboard



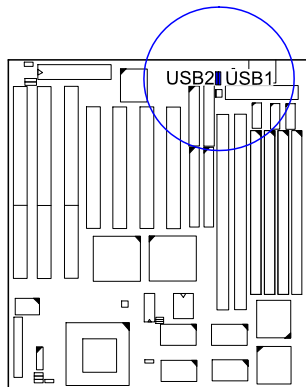
Printer Connector: PRINTER

This 26-pin male connector is attached to your printer via a ribbon cable. When inserting the cable, please be sure that the red dash line of the ribbon cable is on the same side as pin 1 of this connector.



Universal Serial Bus Connectors: USB1, USB2

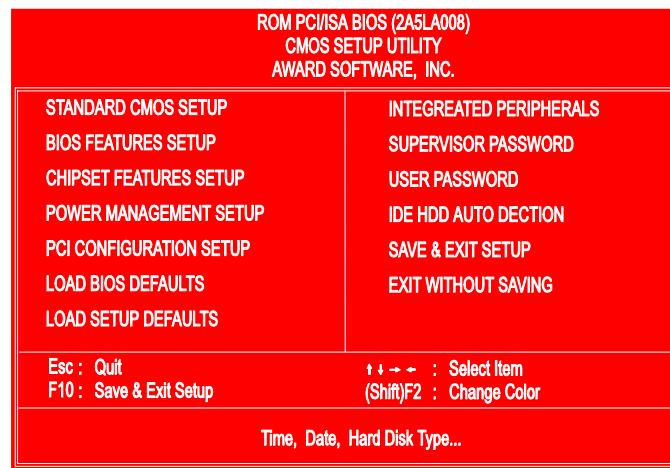
These two connectors are featured to link with the USB peripheral devices via the optional USB riser card.



Award BIOS Setup

The mainboard 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; user changes system backup battery; or the system detects a configuration error and asks the user to run the Setup program. Use the arrow keys to select and press Enter to run the selected program.

Standard CMOS Setup

ROM PCI/ISA BIOS (2A5LA008)								
STANDARD CMOS SETUP								
AWARD SOFTWARE, INC.								
Date (mm:dd:yy) : Tue, July 23 1997								
Time (hh:mm:ss) : 15:37:55								
HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	: Auto	0	0	0	0	0	0	Auto
Primary Slave	: Auto	0	0	0	0	0	0	Auto
Secondary Master	: Auto	0	0	0	0	0	0	Auto
Secondary Slave	: Auto	0	0	0	0	0	0	Auto
Drive A : 1.44M, 3.5 in.					Base Memory: 640K			
Drive B : None					Extended Memory: 7168K			
Video : EGA/VGA					Other Memory: 384K			
Halt On : All Errors					Total Memory: 8192K			
Esc : Quit			↑ ↓ → ← : Select Item			PU/PD/+/- : Modify		
F1 : Help			(Shift)F2 : Change Color					

The Standard CMOS Setup screen is displayed above. Each item may have one or more option settings. The system BIOS automatically detects memory size, thus no changes are necessary. Use the arrow keys to highlight the item and then use the PgUp or PgDn keys to select the value you want in each item.

Hard Disk Configurations

TYPE:

Select from 1 to 45 to fill remaining fields with predefined values of disk drives. Select User to fill the remaining fields. Select Auto to detect the HDD type automatically.

SIZE:

The hard disk size. The unit is Mega Bytes.

CYLS:

The cylinder number of the hard disk.

HEAD:

The read/write head number of hard disk.

PRECOMP:

The cylinder number at which the disk drive changes the write timing.

LANDZ:

The cylinder number that the disk drive heads (read/write) are seated when the disk drive is parked.

SECTOR:

The sector number of each track defined on the hard disk.

MODE:

Select Auto to detect the mode type automatically. If your hard disk supports the LBA mode, select LBA or Large. However, if your hard disk cylinder is more than 1024 and does not support the LBA function, you have to set at Large. Select Normal if your hard disk supporting cylinders is below 1024.

Software Turbo Speed

The BIOS supports Software Turbo Speed feature. Instead of pressing the Turbo Speed Button on the front panel, simply press the **Alt, Ctrl, and +** keys at the same time to enable the Turbo Speed feature; and press the **Alt, Ctrl, and -** keys at the same time to disable the feature.

BIOS Features Setup

ROM PCI/ISA BIOS (2A5LA008) BIOS FEATURES UTILITY AWARD SOFTWARE, INC.			
Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000 - CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000 - CFFFF Shadow	: Disabled
Quick Power On Self Test	: Disabled	D0000 - D3FFF Shadow	: Disabled
Boot Sequence (LS120/ZIP100)	: A, C	D4000 - D7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000 - D8FFF Shadow	: Disabled
Boot Up Floppy Seek	: Enabled	DC000 - DFFFF Shadow	: Disabled
Boot Up NumLock Status	: On		
Gate A20G Option	: Fast		
Typematic Rate Setting	: Disabled		
Typematic Rate (Char/Sec)	: 6		
Typematic Delay (Msec)	: 250	Esc: Quit	↑↓→←: Select Item
Security Option	: Setup	F1: Help	PU/PD/+/=: Modify
PS/2 mouse function control	: Enabled	F5: Old Values	(Shift)F2: Color
OS Select for DRAM > 64MB	: Non-OS2	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 first hard disk drive.

The options are: Enabled, Disabled (Default).

CPU Internal Cache

When enabled, improves the system performance. Disable this item when testing or trouble-shooting.

The options are: Enabled (Default), Disabled.

External Cache

When enabled, supports an optional cache SRAM.

The options are: Enabled (Default), Disabled.

Quick Power On Self Test

When enabled, allows the BIOS to bypass the extensive memory test.

The options are: Enabled, Disabled (Default).

Boot Sequence (LS120/ZIP100)

Allows the system BIOS to first try to boot the operating system from the selected disk drive.

The options are: A, C (Default); C, A; C, CDROM, A; CDROM, C, A; C Only; LS/ZIP, C.

Swap Floppy Drive

Allows you to switch the order in which the operating system accesses the floppy drives during boot up.

The options are: Enabled, Disabled (Default).

Boot Up Floppy Seek

When enabled, assigns the BIOS to perform floppy diskette drive tests by issuing the time-consuming seek commands.

The options are: Enabled (Default), Disabled.

Boot Up Numlock Status

When set to On, allows the BIOS to automatically enable the Num Lock Function when the system boots up.

The options are: On (Default), Off.

Boot Up System Speed

Allows you to adjust the system speed when the system boots up.

The options are: High (Default), Low.

Gate A20 Option

When set at Fast, allows a faster access response under Protected mode.

The options are: Fast (Default), Normal.

Typematic Rate Setting

The term typematic means that when a keyboard key is held down, the character is repeatedly entered until the key is released. When this item is enabled, you may change the typematic repeat rate.

The options are: Disabled (Default), Enabled.

Typematic Rate (Chars/Sec)

Sets the rate of a character repeat when the key is held down.

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

Typematic Delay (Msec)

Sets the delay time before a character is repeated.
The options are: 250 (Default), 500, 750, 1000 millisecond.

Security Option

Allows you to set the security level of the system.
The options are: Setup (Default), System.

PS/2 Mouse Function Control

When enabled, allows you to release IRQ12 for using the PS/2 mouse.
The options are: Enabled (Default), Disabled.

OS Select For DRAM > 64MB

If your operating system (OS) is OS2, MS Windows NT, or MS Windows 95, select the option OS2. Otherwise, stay with the default setting Non-OS2.
The options are: Non-OS2 (Default), OS2.

Video BIOS Shadow

Allows the BIOS to copy the video ROM code of the add-on video card to the 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 options are: Enabled, Disabled (Default).

Chipset Features Setup

ROM PCI/ISA BIOS (2A5LA008)		
CHIPSET FEATURES SETUP		
AWARD SOFTWARE, INC.		
Auto Configuration	: Enabled	Delayed PCI Transaction : Disabled
DRAM Timing	: 60 ns	
Fast RAS To CAS Delay	: 3	
DRAM Read Burst (EDO/FP)	: x222/x333	
DRAM Write Burst Timing	: 2	
Fast EDO Path Select	: Enabled	
Refresh RAS# Assertion	: 5 Ciks	
SDRAM (CAS Lat/RAS-to-CAS)	: 3/3/5/8	
System BIOS Cacheable	: Disabled	
Video BIOS Cacheable	: Enabled	
8 Bit I/O Recovery Time	: 1	
16 Bit I/O Recovery Time	: 1	
Memory Hole At 15M-16M	: Disabled	
Peer Concurrency	: Enabled	
		Esc : Quit ++-- : Select Item
		F1 : Help PU/PD/+/- : Modify
		F5 : Old Values (Shift)F2 : Color
		F6 : Load BIOS Defaults
		F7 : Load Setup Defaults

Auto Configuration

When set at Enabled, it allows you to configure the features that from the third one, Fast RAS To CAS Delay, to the eighth one, Refresh RAS# Assertion.

The options are: Enabled (Default), Disabled.

DRAM Timing

Allows you to select the speed of data access to EDO DRAM.

The options are: 60 ns (Default), 70 ns.

Fast RAS To CAS Delay

Allows you to define the delay time that from DRAM RAS# active to CAS# active.

The options are: 3, 2. Unit: Clock T.

DRAM Read Burst (EDO/FP)

Allows you to define DRAM read burst timing.

The options are: x222/x333, x332/x333, x444/x444, x333/x444.

DRAM Write Burst Timing

Allows you to define DRAM write burst timing.
The options are: X-3-3-3, X-2-2-2, X-4-4-4.

Fast MA to RAS# Delay CLK

Allows you to select the clock of the memory address (MA) to RAS# delay.
This feature is for technician use. The options are: 1, 2.

Fast EDO Path Select

When enabled, it allows you to select a fast path for CPU to DRAM read cycles for the leadoff. This is valid for EDO DRAMs only.
The options are: Disabled, Enabled.

Refresh RAS# Aassertion

This feature allows you to control the number of clocks RAS# is asserted for Refresh cycles.
The options are: 4 Clks, 5 Clks.

SDRAM (CAS Lat/RAS-to-CAS)

If you install a DIMM, this feature allows you to select the ratio of CAS Latency to RAS-to-CAS. The default setting is slowest. The 2|3/4/7 is fastest. The second one is 2|3/5/8, then is 3|3/4/7.
The options are: 3|3/5/8 (Default), 3|3/4/7, 2|3/5/8, 2|3/4/7.

System BIOS Cacheable

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

Video BIOS Cacheable

When enabled, allows the system to use the video BIOS codes from SRAMs, instead of the slower DRAMs or ROMs.
The options are: Enabled (Default), Disabled.

8 Bit I/O Recovery Time

Allows you to set the 8-bit ISA I/O recovery time.
The options are: 1 (Default), 2, 3, 4, 5, 6, 7, 8. Unit: Bus clock.

16 Bit I/O Recovery Time

Allows you to set the 16-bit ISA I/O recovery time.
The options are: 1 (Default), 2, 3, 4. Unit: Bus clock.

Memory Hole At 15M-16M

When enabled, the memory hole at the 15MB address will be relocated to the 15~16MB address range of the ISA cycle when the processor accesses the 15~16MB address area.

When disabled, the memory hole at the 15MB address will be treated as a DRAM cycle when the processor accesses the 15~16MB address area.

The options are: Enabled, Disabled (Default).

Peer Concurrency

Enable this item to allow the processor to continue its operation while another PCI Bus is active.

The options are: Enabled (Default), Disabled.

Delayed PCI Transaction

Enable this feature to abort the current CPI master cycle and to accept the new PCI master request, it reaccepts the original PCI master and returns the PCI data phase to the original PCI master.

The options are: Disabled (default), Enabled.

Power Management Setup

ROM PCI/ISA BIOS (2A5LA008) POWER MANAGEMENT UTILITY AWARD SOFTWARE, INC.	
Power Management : Disable	** Power Down & Resume Events **
PM Control by APM : Yes	IRQ3 (COM 2) : ON
Video Off Method : DPMS	IRQ4 (COM 1) : ON
MODEM Use IRQ : NA	IRQ5 (LPT 2) : OFF
	IRQ6 (Floppy Disk) : OFF
Doze Mode : Disable	IRQ7 (LPT 1) : OFF
Standby Mode : Disable	IRQ8 (RTC Alarm) : OFF
Suspend Mode : Disable	IRQ9 (IRQ2 Redir) : OFF
HDD Power Down : Disable	IRQ10 (Reserved) : OFF
** Wake Up Events in Doze & Standby **	IRQ11 (Reserved) : OFF
IRQ3 (Wake-Up Event) : ON	IRQ12 (PS/2 Mouse) : ON
IRQ4 (Wake-Up Event) : ON	IRQ13 (Coprocessor) : OFF
IRQ8 (Wake-Up Event) : OFF	IRQ14 (Hard Disk) : ON
IRQ12 (Wake-Up Event) : ON	IRQ15 (Reserved) : OFF
	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

This item allows you to adjust the power management features. Select Disable for disabling global power management features. Select User Defined for configuring your own power management features. MIN Saving initiates all predefined timers in their minimum values. MAX Saving, on the other hand, initiates maximum values.

The options are: Disable (Default), User Defined, MIN Saving, MAX Saving.

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 power saving mode when all tasks are done.

The options are: No, Yes (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: V/H SYNC+Blank, DPMS (Default), Blank Screen.

MODEM Use IRQ

This feature allows you to select the IRQ# of the system that is the same IRQ# as the modem use.

The options are: NA (Default), 3, 5, 7, 9, 10, 11.

Doze Mode

When disabled, the system will not enter Doze mode. The specified time option defines the idle time the system takes before it enters Doze mode.

The options are: Disabled(Default), 1, 2, 4, 6, 8, 10, 20, 30, 40 Min, 1 Hr.

Standby Mode

When disabled, the system will not enter the Standby mode. The specified time option defines the idle time the system takes before it enters Standby mode.

The options are: Disabled (Default), 1, 2, 4, 6, 8, 10, 20, 30, 40 Min, 1 Hr.

Suspend Mode

When disabled, the system will not enter Suspend mode. The specified time option defines the idle time the system takes before it enters Suspend mode.

The options are: Disabled (Default), 1, 2, 4, 6, 8, 10, 20, 30, 40 Min, 1 Hr.

HDD Power Down

Selecting Disable will turn off the hard disk drive (HDD) motor. Selecting 1 Min..15 Min allows you define the HDD idle time before the HDD enters the Power Saving Mode. The option When Suspend lets the BIOS turn the HDD motor off when system is in Suspend mode.

The options 1 Min..15 Min and When Suspend will not work concurrently. When HDD is in the Power Saving Mode, any access to the HDD will wake the HDD up.

The options are: Disable (Default), 1 Min..15 Min, When Suspend.

IRQ3, 4, 8, 12 (Wake-Up Event)

Selecting OFF allows the BIOS to refrain from waking up the system.
Selecting ON allows the BIOS to wake up the system from Doze mode, Standby mode, or Suspend mode.

The options are: OFF, ON.

The default of IRQ3, 4, 12 (Wake-Up Event): ON.

The default of IRQ8 (Wake-Up Event): OFF.

Power Down Activities / IRQ3 - IRQ15

Selecting ON will enable the power management timers when a no activity event is detected in the specified I/O port or component.

Selecting OFF will disable the PM timer even if a no activity event is detected.

The options are: ON, OFF.

The default value of IRQ3 (COM2), IRQ4 (COM1), IRQ12 (PS/2 Mouse), IRQ14 (Hard Disk) : ON.

The default setting of other IRQs: OFF.

PNP Configuration Setup

ROM PCI/ISA BIOS (2A5LA008) PNP CONFIGURATION SETUP AWARD SOFTWARE, INC.	
PNP OS Installed : No Resources Controlled By : Auto Reset Configuration Data : Disabled	PCI IRQ Activated By : Level Assign IRQ For VGA : Disable
Esc : Quit ↑↓ → ← : Select Item F1 : Help PU/PD/+/ - : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults	

PNP OS Installed

If your operating system is a Plug-and-Play one, such as Windows NT, Windows 95, select Yes.

The options are: No (Default), Yes.

Resources Controlled By

If you set at Auto, the BIOS automatically arranges all system resources for you. If there exists conflict or you are not satisfy with the configuration, simply set all the resources listed in the above figure by selecting Manual.

The options are: Auto (default), Manual. The manual options of IRQ- / DMA- assigned to are: Legacy ISA, PCI/ISA PnP.

Reset Configuration Data

When enabled, allows the system to clear the last BIOS configuration data and reset them with the default BIOS configuration data.

The options are: Enabled, Disabled (default).

PCI IRQ Activated By

We suggest that you set this to its default configuration unless you are a qualified technician.

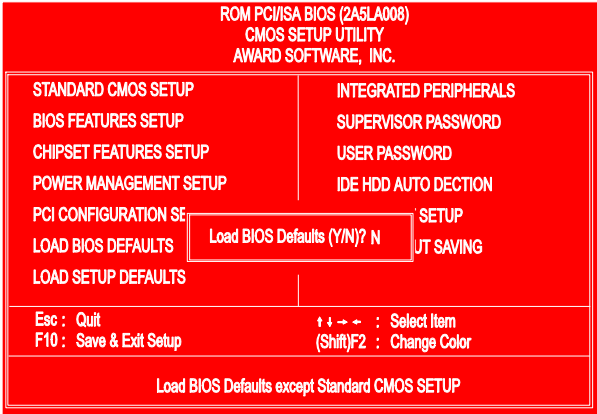
The options are: Level (Default), Edge.

Assign IRQ For VGA

If your PCI VGA card does not need an IRQ, select Disabled; therefore, an IRQ can be released for the system use.

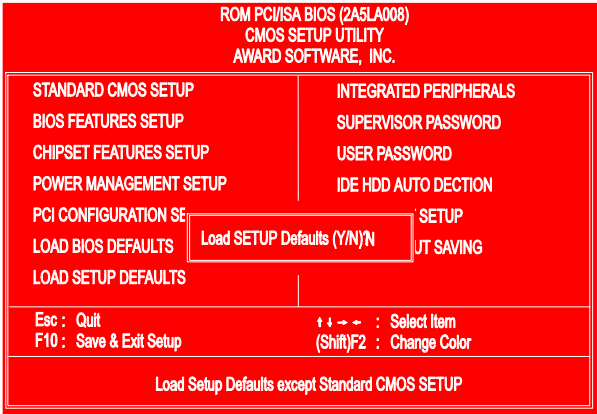
The options are: Enabled, Disabled (Default).

Load BIOS Defaults



BIOS defaults contain the most appropriate values of the system parameters that allow minimum 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.

Integrated Peripherals

ROM PCI/ISA BIOS (2A5LA008)					
INTEGRATED PERIPHERALS					
AWARD SOFTWARE, INC.					
IDE HDD Block Mode	:	Enable	Onboard FDD Controller	:	Enable
On-Chip Primary	:	Enable	Onboard UART1	:	3F8/IRQ4
On-Chip Secondary	:	Enable	Onboard UART2	:	2F8/IRQ3
IDE Primary Master PIO	:	Auto	Onboard UART2 Mode	:	Stanadard
IDE Primary Slave PIO	:	Auto			
IDE Secondary Master PIO	:	Auto	Onboard Parallel Port	:	378/IRQ7
IDE Secondary Slave PIO	:	Auto	Parallel Port Mode	:	Normal
USB Controller	:	Disable			
			Esc: Quit ↑↓→← : Select Item		
			F1 : Help PU/PD/+/- : Modify		
			F5 : Old Values (Shift)F2 : Color		
			F6 : Load BIOS Defaults		
			F7 : Load Setup Defaults		

IDE HDD Block Mode

When enabled, the system executes read/write requests to hard disk in block mode. The options are: Enabled (Default), Disabled.

On-Chip Primary PCI IDE

When enabled, allows you to use the onboard primary PCI IDE.
The options are: Enabled (Default), Disabled.

On-Chip Secondary PCI IDE

When enabled, allows you to use the onboard secondary PCI IDE.
The options are: Enabled (Default), Disabled.

IDE Primary Master PIO

Allows an automatic or a manual configuration of the PCI primary IDE hard disk (master) mode.
The options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

IDE Primary Slave PIO

Allows an automatic or a manual configuration of the PCI primary IDE hard disk (slave) mode.
The options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

IDE Secondary Master PIO

Allows an automatic or a manual configuration of the PCI secondary IDE hard disk (master) mode.

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

IDE Secondary Slave PIO

Allows an automatic or a manual configuration of the PCI secondary IDE hard disk (slave) mode.

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

USB Controller

If you do not use the onboard USB feature, it allows you to disable it.

The options are: Enabled, Disabled (Default).

BIOS Support USB Keyboard

If Enabled is selected in the above feature, this feature will appear.

If your USB devices cannot be detected automatically by the system BIOS or some driver diskettes came with your USB devices, please set at DOS for allowing you to install the driver.

The options are: Setup (Default), DOS.

Onboard FDD Controller

When enabled, the floppy diskette drive (FDD) controller is activated.

The options are: Enabled (Default), Disabled.

Onboard UART1

If the serial port 1 uses the onboard I/O controller, you can modify your serial port parameters. If an I/O card needs to be installed, COM3 and COM4 may be needed.

The options are: 3F8/IRQ4 (Default), 3E8/IRQ4, 2F8/IRQ3, 2E8/IRQ3, Disabled.

Onboard Serial UART2

If the serial port 2 uses the onboard I/O controller, you can modify your serial port parameters. If an I/O card needs to be installed, COM3 and COM4 may be needed.

The options are: 2F8/IRQ3 (Default), 3E8/IRQ4, 2E8/IRQ3, 3F8/IRQ4, Disabled.

Onboard UART2 Mode

Allows you to select the IR modes if the serial port 2 is used as an IR port. Set at Standard, if you use COM2 as the serial port as the serial port, instead as an IR port.
The options are: HPSIR, ASKIR, Standard (Default).

IR Duplex Mode

This feature allows you to select the infrared data transaction way.
The options are: Half (Default), Full.

Use IR Pins

Allows you to select the RX and TX pins of IR modules.
The options are: IR-RX2TX2 (Default), IR-RX TX.

Onboard Parallel Port

Allows you to select from a given set of parameters if the parallel port uses the onboard I/O controller.
The options are: 378/IRQ7 (Default), 278/IRQ5, 3BC/IRQ7, Disabled.

Parallel Port Mode

Allows you to connect with an advanced printer.
The options are: Normal (Default), Extended, EPP Mode, ECP Mode, ECP+EPP Mode.

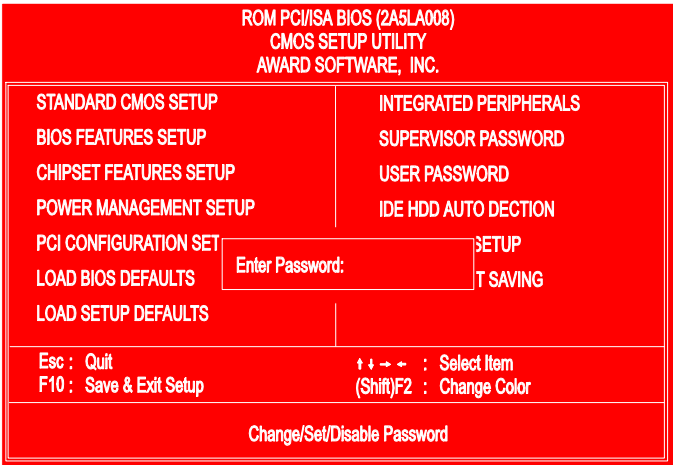
ECP Mode Use DMA

If you select ECP mode to be the parallel port mode, this feature allows you to select Direct Memory Access (DMA) channel.
The options are: 3 (Default), 1.

Parallel Port EPP Type

If you select EPP/SPP mode to be the parallel port mode, this feature allows you to select the EPP type version.
The options are: EPP1.9, EPP1.7 (Default).

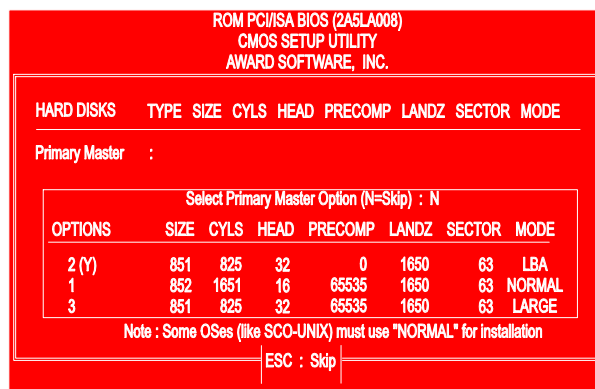
Supervisor/User Password



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.

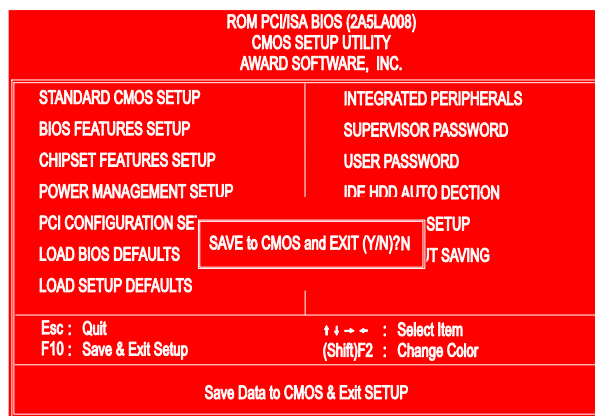
Under the BIOS Feature Setup, if System is selected under the Security Option field and the Supervisor Password is enabled, you will be prompted for the Supervisor Password every time you try to enter the CMOS Setup Utility. If System is selected and the User Password is enabled, you will be requested 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.

IDE HDD Auto Detection



The IDE Hard Disk Drive Auto Detection feature automatically configures your new hard disk. Use it for a quick configuration of new hard drives. This feature allows you to set the parameters of up to four IDE HDDs. The option with **(Y)** are recommended by the system BIOS. You may also keys in your own parameters instead of setting by the system BIOS. After all settings, press Esc key to return the main menu. For confirmation, enter the Standard CMOS Setup feature.

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. 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

If you select this feature, the following message will appear at the center of the screen to allow you to exit the setup utility without saving CMOS modifications:

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.
--

BIOS Update Instruction

Flash Process

The mainboard provides a Flash BIOS. If you have any question about the BIOS upgade, please contact your local dealer for more information. The follwoing insturctions are introduced when the upgrade is needed.

1. Create a Bootable Floppy (in DOS) -
with a non-fomatted diskette, type **format a:/s**
With a fomatted diskette, type **sys a:**
2. Download the BIOS File -
Download the correct BIOS file via FTP, by clicking on the file name of the BIOS you wish to download.

Save the BIOS file and the Flash Utility file in the boot disk you have created.

Unzip the BIOS file and the Flash Utility file.

There are two files after extraction: Flash BIOS utility, (e.g. flash531.exe), and BIOS file (e.g. 615J900.bin). Use the standard Flash BIOS utility (flash531.exe), unless othwise specified.

Place the bootable floppy disk containing the BIOS file and the Flash Utility in drive a:, and reboot the system in MS-DOS, preferably Ver. 6.22

At the A: > prompt, type the corresponding Flash BIOS utility and the BIOS file with its extension. For example, **flash531 615j900.bin**

From the Flash Memory Write menu, select **Y** to **Do you want to save BIOS?** If you want to save your current BIOS, then type the current BIOS name and the extension after **FILE NAME TO SAVE:** . e.g. 613J900.bin

Alternatively, select **N** if you do not want to save your current BIOS.

Select **Y** to **Are you sure to program?**

Wait until it displays **Message: Power Off or Reset the system.**

Once the BIOS has been loaded successfully, remove the floppy diskette and reboot the system holding the END key prior to power on until you enter CMOS setup. If you do not do this the first time booting up after upgrading the BIOS, the system will hang.

NOTE : Do not turn off or reset the computer during the flash process. It will corrupt the BIOS data.
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Software Utilities

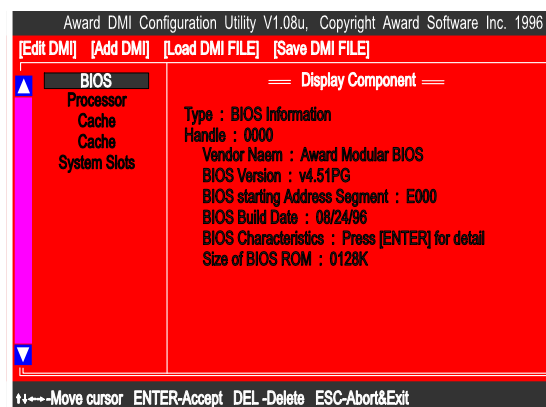
DMI Utility

DMI (Desktop Management Interface) is a standard for organizing system configuration information. Using DMI, computer configuration can be made much simpler, quicker, and easier. Computer system configuration information can be read and modified from remote locations, permitting remote configuration and boot up. The utility is contained in a 3.5" diskette. Two files, DMICFG.EXE and README.TXT, are included. The DMICFG.EXE must be run in real mode. The README.TXT records the version of DMICFG.EXE.

NOTE :

1. Duplicate the original diskette and use the backup one.
2. End users are not encouraged to update DMI information. Please contact your vendor for details.

Starting DMI Utility



Type **DMICFG** under DOS to run the DMI utility. A menu like the figure above will appear in your monitor. It provides record data about your computer system.

IDE Utility

The mainboard package provide IDE utility in the attached utility disk for three operating systems: Windows 95, Windows NT, and OS2.

Copy the attached file to your hard disk and execute the corresponding self-decompressing executable file. Then run SETUP.EXE to install the drivers and documentation.