PENTIUM AGP

AT Form, SiS AGP Pentium Mainboard
On Board PCI Ultra DMA IDE & Multi-I/O

Mustang-AGP R581A

AMD k6-2/3 400MHz = 66MHz x 2(=x6)
AMD k6-2/3 450MHz = 75MHz x 2(=x6)
CPU Voltage : 2.2V or 2.4V Setting by CPU request!
83MHz = JP1, JP2 (1-2 short), JP3 (2-3 short)
Thick line is pin 1.
x4.0 = JP8, JP10 (close), JP9 (open)
x4.5 = JP8, JP9, JP10 (close)
x5.0 = JP8 (open), JP9, JP10 (close)
x5.5 = JP8, JP9 (open), JP10 (close)

Users Manual

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Introduction

Welcome to the M-Technology next generation high performance Pentium system mainboard --- **Mustang-AGP R581A.** The R-581A using the high performance SiS 5591/5595 Chipset that will deliver superior performance on your personal computer.

About This User's Guide

This User's Guide is for assisting system manufacturers and end users in setting up and installing the mainboard. Information in this guide has been carefully checked for reliability; however, there may still be inaccuracies and information in this document is subject to change without notice.

DISCLAIMER

The information in this manual has been carefully checked and is believed to be accurate. We assumes no responsibility for any inaccuracies that may still be contained in this manual. We reserves the right to make changes to this material at any time without notice.

＊ Our home page on Internet "http: //www.rise.com.tw"

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1. INTRODUCTION

1.1. Preface

Welcome to use the R-581A Pentium system mainboard. This manual explains how to use this mainboard and install upgrades. It has overview of the design and features of the board and provides useful information on the configuration of the board, or a system in which.

1.2. Key Features

The R-581A Pentium system mainboard is a high-performance system board that support Intel Pentium family CPUs, Cyrix, AMD and other compatible CPUs.

There has many performance and system features integrated onto the mainboard, including the following :

- CPU : Supports Socket 7 for
  - Intel Pentium 90 to 233 MHz, P55C (MMX).
  - Cyrix / IBM 6x86, 6x86L, 6x86MX (M2),
  - AMD K5, K6, K6-2 and other compatible CPUs.
- Chipset : SiS 5591/5595
- Supports true 64 bits CACHE and DRAM access mode.
- Supports 512K/1MB Pipelined Burst SRAM in second Level Cache.
- CPU L1/L2 Write-Back cache operation.
- Supports 2x72-pin SIMM Sockets and 3 x 168-pin DIMM SDRAM or DRAM Sockets.
  - The Memory size from 4MB to 768MB.
  - Supports FP(Fast Page), EDO(Extended Data Out) Mode DRAM and SDRAM.
- Three 16-bit ISA Slots and Four 32-bit PCI Master Mode Slots.

- One AGP Slot supports both 1X and 2X speed mode with sideband address capability

- 2 x IDE Connectors for up to 4 IDE Drives.
  - PIO Mode 4 transfers.
  - PCI Bus Master Mode IDE interface.
  - Support Ultra DMA.

- On-board I / O support :
  - 2 Serial Ports (16550 Fast UART compatible).
  - 1 Parallel Port (with EPP and ECP capabilites).
  - 1 Floppy Disk Connector (Supports 2 FD Drives).
  - 1 PS/2 Mouse Connector.
  - 1 IrDA Connector.

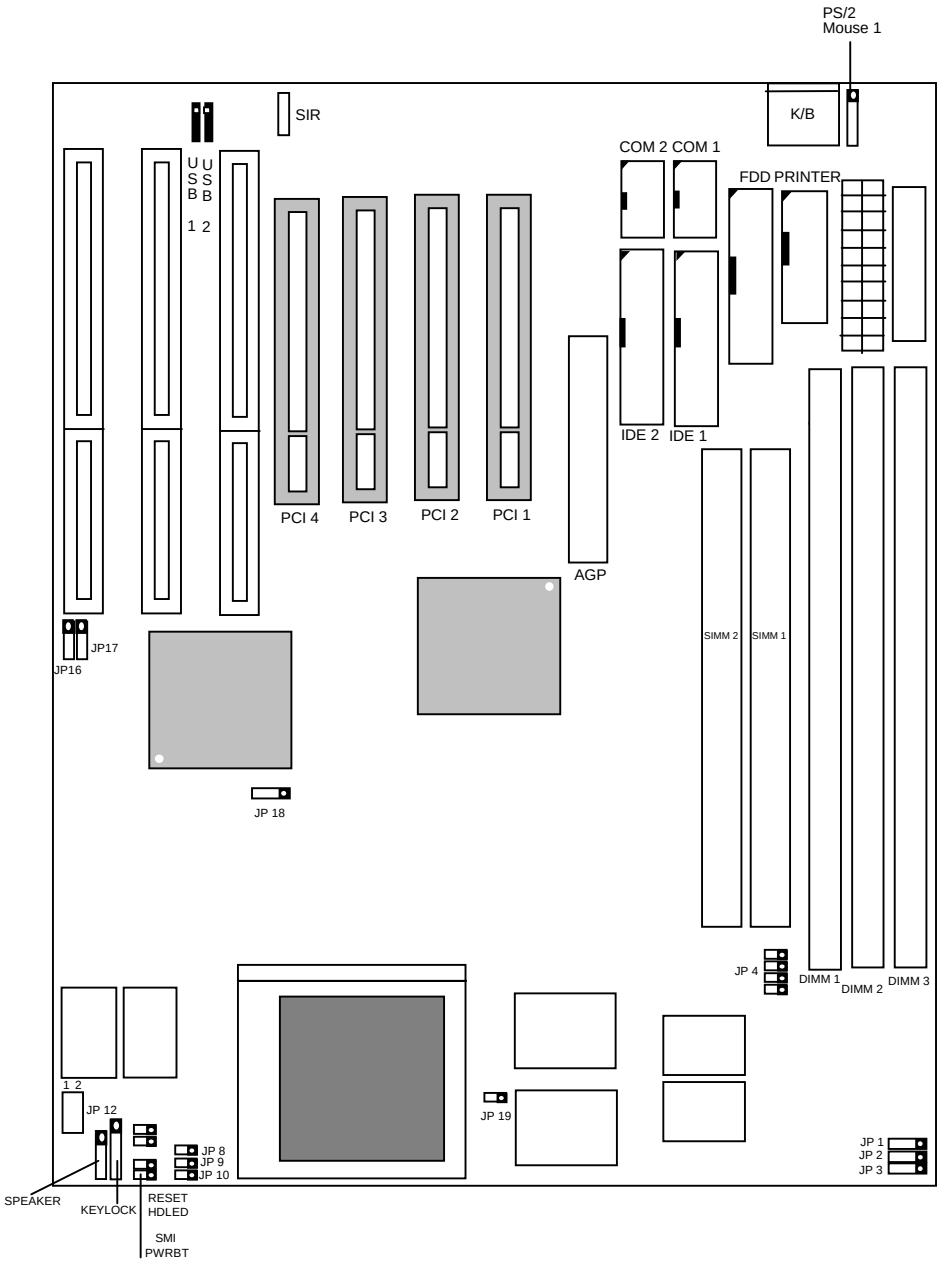
- Universal Serial Bus Controller.
  - Host / HUB Controller.
  - Two USB Ports.

※ Now under compatibility testing with different peripheral.

- Flash ROM BIOS with Green, Plug and Play Features

- Baby AT Form Factor : 22cm x 27cm or 8.7" x 10.6" (4 Layers).

1.3 R-581A Mainboard Layout



2 HARDWARE INSTALLATION

This chapter explains how to configure the system main board hardware. After you install the main board, you can set jumpers and make case connections. Refer to this chapter whenever you upgrade or reconfigure your system.

2.1 Unpacking

The mainboard package should contain the following:

♦ The **R-581A** mainboard.

♦ USER'S MANUAL for R-581A mainboard.

♦ Cable set for IDE, Floppy, I/O device.

♦ IDE Driver.

The mainboard contains sensitive electric components which can be easily damaged by static electricity, so the mainboard should be left in its original packing until it is installed.

Unpacking and installation should be done on a grounded anti-static mat.

The operator should be wearing an anti static wristband, grounded at the same point as the anti-static mat.

Inspect the mainboard carton for obvious damage. Shipping and handling may cause damage to your board. Be sure there are no shipping and handling damages on the board before proceeding.

After opening the mainboard carton, extract the system board and place it only on a grounded anti-static surface component side up. Again inspect the board for damage.

Press down on all of the socket IC's to make sure that they are properly seated. Do this only on with the board placed on a firm flat surface.

Do not apply power to the board if it has been damaged.

You are now ready to install your mainboard. the mounting hole pattern on the mainboard matches the system board.
It is assumed that the chassis is designed for a standard AT mainboard mounting. Place the chassis on the anti-static mat and remove the cover.

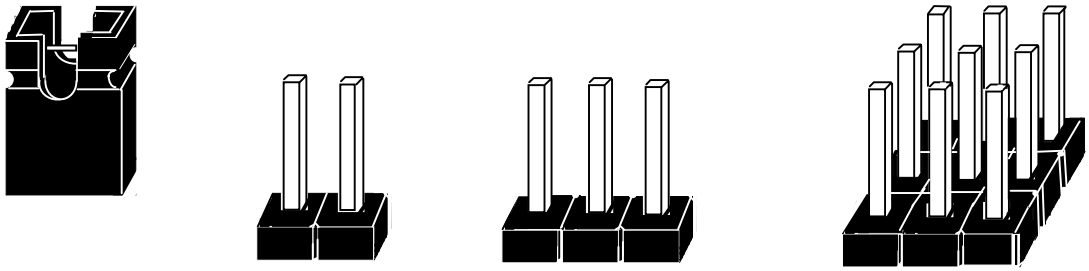
Take the plastic clips, Nylon stand-off and screws for mounting the system board, and keep them separate

2.2 Jumper Setting Summary

Regarding hardware settings on the board. They specify configuration options for various features. The settings are made using something called a "Jumper". A jumper is a set of two or more metal pins in a plastic base attached to the mainboard. A plastic jumper "cap" with a metal plate inside fits over two pins to create an electrical contact between them. The contact establishes a hardware setting.

Some jumpers have two pins, other have three or more. The jumper are sometimes combined into sets called jumper "blocks", where all the jumpers in the block must be set together to establish a hardware setting.
The next figures show how this locks.

Jumpers and caps

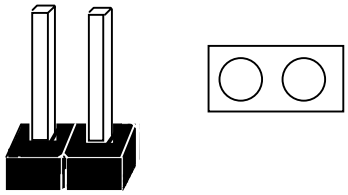


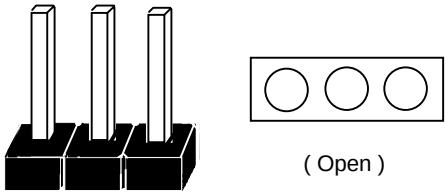
Jumper cap **2-Pin Jumper** **3-Pin Jumper**
Jumper block

Most jumper setting are printed on the board in a stylized bird's-eye view, with which pins to connect for each setting marked by a bar connecting two pins. For example, if a jumper has three pins, connecting or "closing", the first and second pins creates one setting and closing the second and third pins creates another. The same type of diagrams are used in this manual. The jumpers are always shown from the same point of view as shown in the whole board diagram in this chapter.

Jumpers diagrams

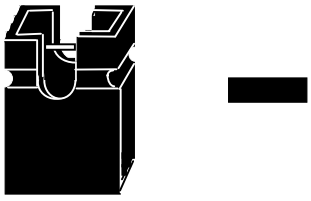
Jumpers are shown like this



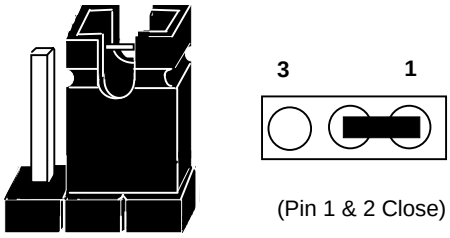


(Open)

Jumper caps like this



Jumper settings like this

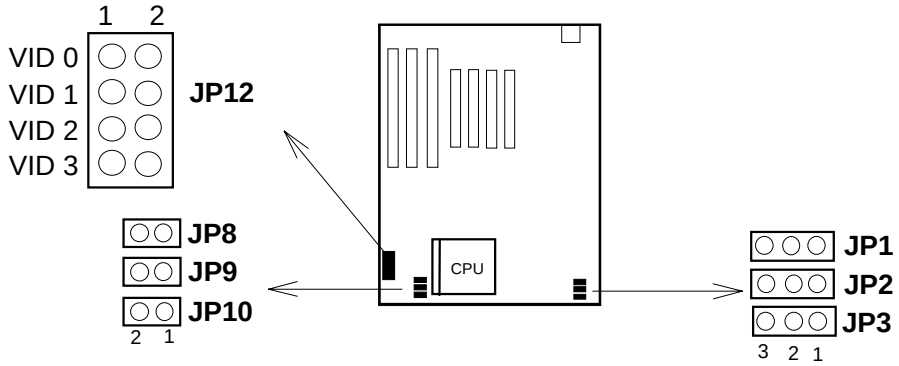


(Pin 1 & 2 Close)

※ The Red colors Jumper for system Voltage setting, and the Yellow colors Jumper for system Clock setting, please careful to change it.

2.3 CPU Installation

T he mainboard supports Pentium class processors up to 233 MHz, If you install the CPU on this board, you must set the **System Clock** (JP1, JP2, JP3), **Frequency Ratio** (JP8, JP9,JP10) and **CPU Power Voltage** (JP12) to meet variable CPU specifications.



2.3.1. CPU Speed Configuration:

Freq ratio	JP8, JP9, JP1
1.5	
2	
2.5	
3	
3.5	

System freq (MHz)	PCI	AGP	JP1,JP2,JP3
60	30	60	
66	33	66	
68	34	68	
75	32	64	
75	37	75	
83	32	64	

＊ CPU Speed = (Frequency ratio) x (System Frequency).

＊＊ PCI has a maximum bandwidth of 33MB --- one half of the 66 MHz System Frequency. The 75MHz System Frequency are not supported by the current PCI Rev.2.1 Specification.

2.3.2. CPU Voltage Configuration:

This R581A mainboard has a smart circuit, it will automatic to adjust the CPU is single power or dual power. When you use a single power CPU, there is just one set power(V Core) to supply CPU. When you use a dual power CPU, there are two sets power (V Core and V I/O) to supply CPU.

(Note: JP12 will adjust the CPU V Core voltage. And V I/O only supply 3.4 v)

CPU Voltage Power	JP12
2.1V	
2.2V	
2.3V	
2.4V	
2.5V	
2.6V	
2.7V	
2.8V	

CPU Voltage Power	JP12
2.9V	
3.0V	
3.1V	
3.2V	
3.3V	
3.4V	
3.5V	

2.3.3. The CPU Speed & Jumper setting.

(a) Intel Pentium CPU.

CPU Speed	Frequency Ratio				System Clock			
	/	JP8	JP9	JP10	MHz	JP1	JP2	JP3
90MHz	3/2	Open	Open	Open	60	2-3	2-3	2-3
100MHz		Open	Open	Open	66	1-2	2-3	2-3
120MHz	2/1	Close	Open	Open	60	2-3	2-3	2-3
133MHz		Close	Open	Open	66	1-2	2-3	2-3
150MHz	5/2	Close	Close	Open	60	2-3	2-3	2-3
166MHz		Close	Close	Open	66	1-2	2-3	2-3
180MHz	3/1	Open	Close	Open	60	2-3	2-3	2-3
200MHZ		Open	Close	Open	66	1-2	2-3	2-3
233MHz	7/2	Open	Open	Open	66	1-2	2-3	2-3

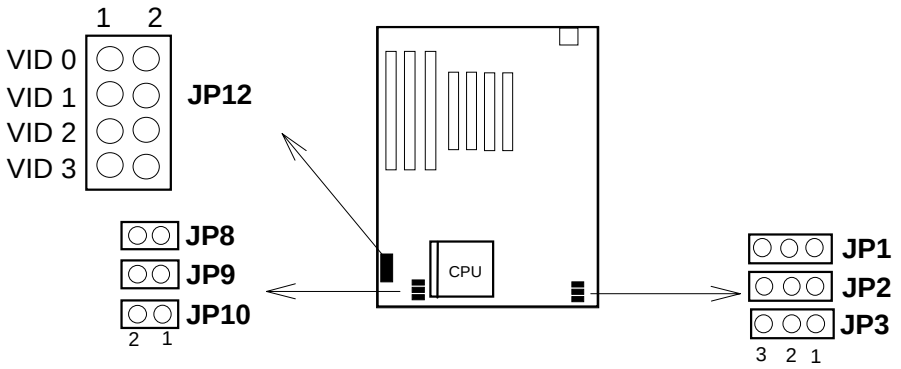
(b) Cyrix 6x86 & 6x86L and IBM 6x86 & 6x86L CPU.

CPU Speed	Frequency Ratio				System Clock			
	/	JP8	JP9	JP10	MHz	JP1	JP2	JP3
PR150+	2/1	Close	Open	Open	60	2-3	2-3	2-3
PR166+		Close	Open	Open	66	1-2	2-3	2-3
PR200+		Close	Open	Open	75	2-3	1-2	2-3

(c) Cyrix 6x86MX (M2) & IBM 6x86MX (M2) CPU.

CPU Speed	Frequency Ratio				System Clock			
	/	JP8	JP9	JP10	MHz	JP1	JP2	JP3
PR166	5/2	Close	Close	Open	60	2-3	2-3	2-3
PR200		Close	Close	Open	66	1-2	2-3	2-3
PR200	2/1	Close	Open	Open	75	2-3	1-2	2-3
PR233	3/1	Open	Close	Open	66	1-2	2-3	2-3
PR233	5/2	Close	Close	Open	75	2-3	1-2	2-3
PR266	7/2	Open	Open	Open	66	1-2	2-3	2-3
PR266	3/1	Open	Close	Open	75	2-3	1-2	2-3

※ We recommend the end user to choose the version 2.7 or later of Cyrix/ IBM 6x86 processor.



(d) AMD 5k86 CPU.

CPU Speed	Frequency Ratio				System Clock			
	/	JP8	JP9	JP10	MHz	JP1	JP2	JP3
P90	3/2	Open	Open	Open	60	2-3	2-3	2-3
P100		Open	Open	Open	66	1-2	2-3	2-3
P166	5/2	Close	Close	Open	66	1-2	2-3	2-3

(e) AMD K6 CPU.

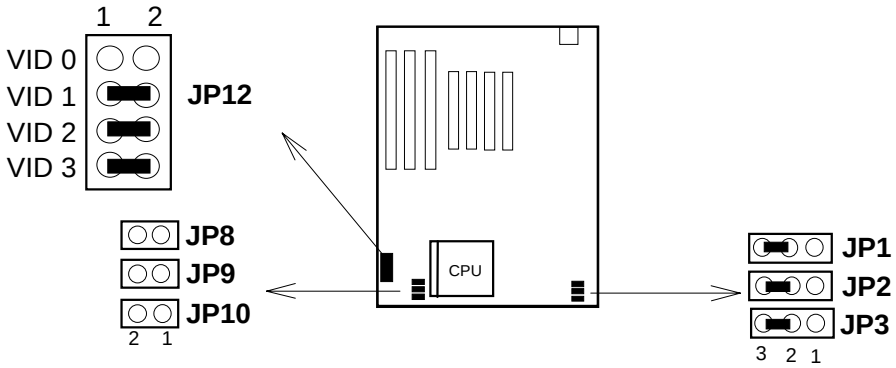
CPU Speed	Frequency Ratio				System Clock			
	/	JP8	JP9	JP10	MHz	JP1	JP2	JP3
P166	5/2	Close	Close	Open	66	1-2	2-3	2-3
P200	3/1	Open	Close	Open	66	1-2	2-3	2-3
P233	7/2	Open	Open	Open	66	1-2	2-3	2-3

※ 1. For the AMD K5-PR120/133, it is also allowed to use ratio "x1.5", which is equal to the Intel Pentium 90/100MHz settings.
2. For the AMD K5-150/160, it use the same settings as the Intel Pentium 150/166MHz processor.

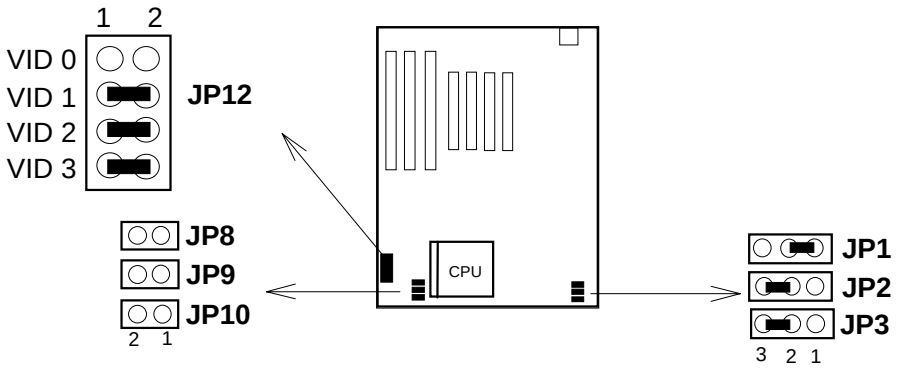
2.3.4. CPU Type Select Quick Reference :

(a) Intel Pentium CPU.

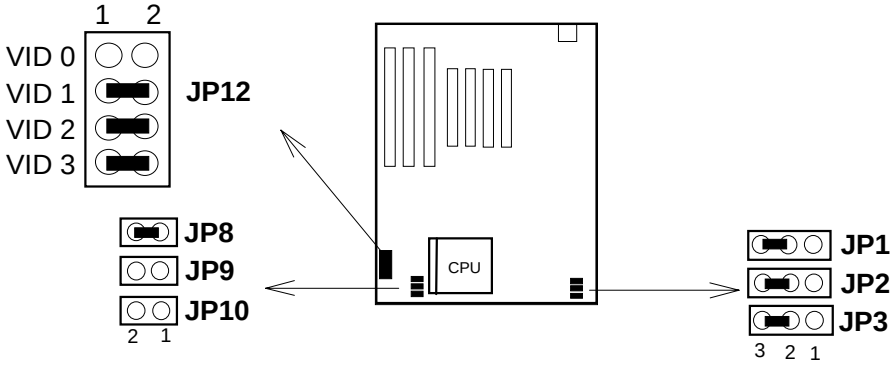
(1) Intel P54C-90MHz.



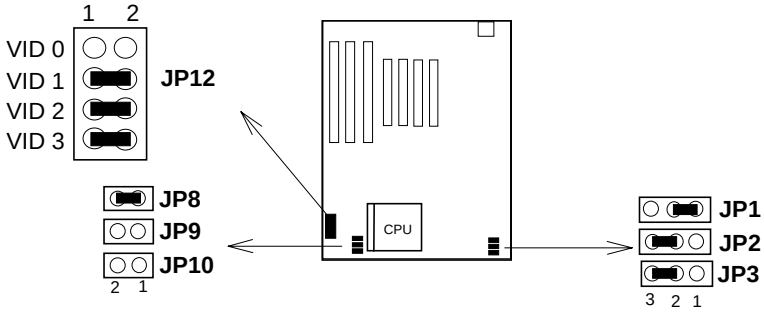
(2) Intel P54C-100MHz.



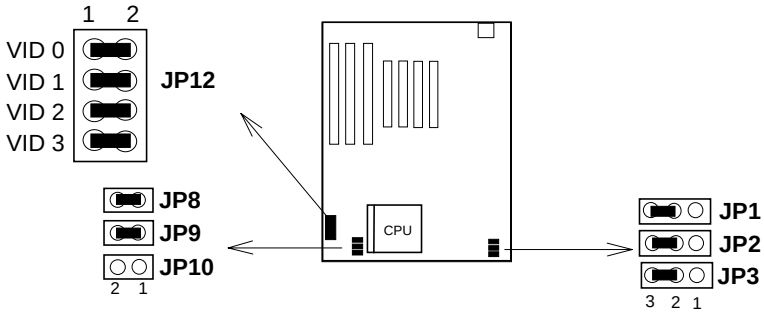
(3) Intel P54C-120MHz.



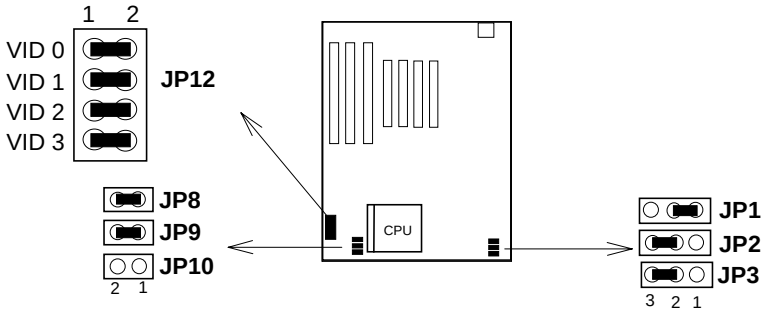
(4) Intel P54C-133MHz.



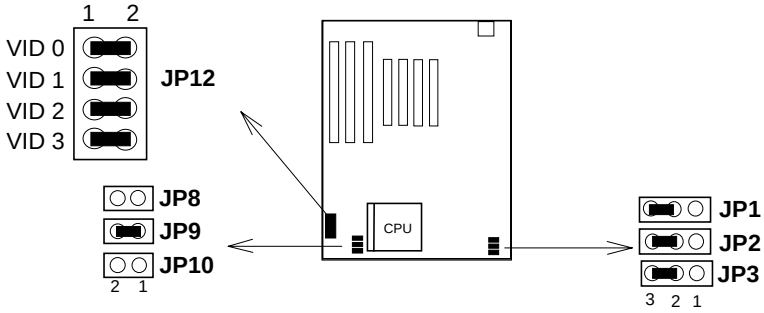
(5) Intel P54C-150MHz.



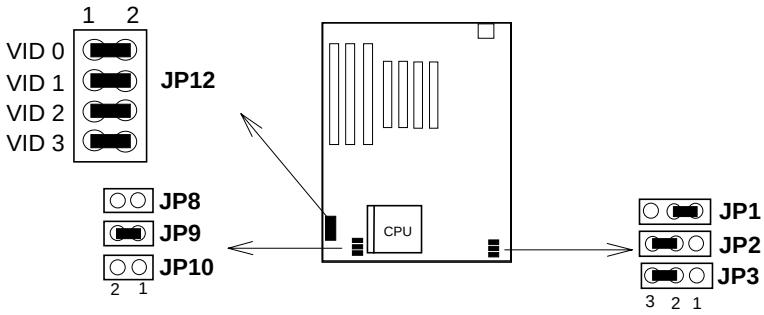
(6) Intel P54C-166MHz.



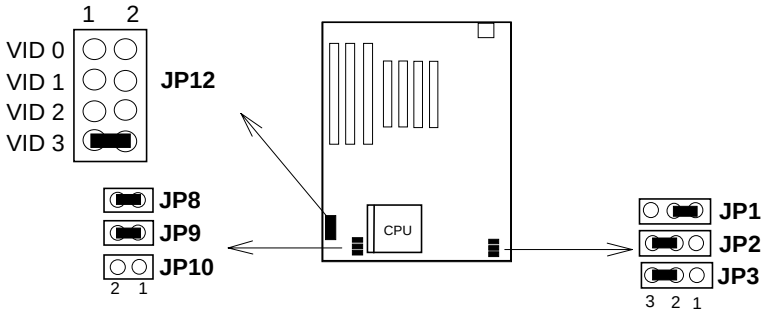
(7) Intel P54C-180MHz.



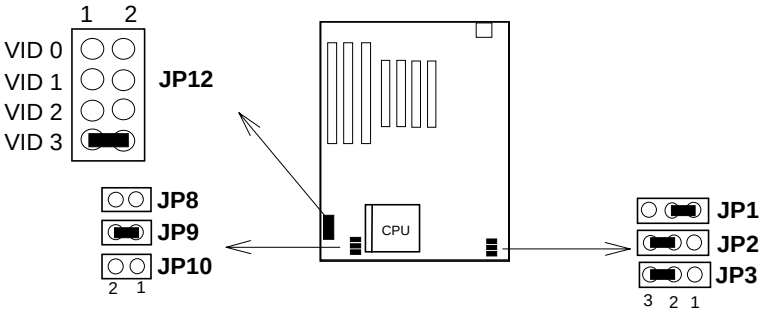
(8) Intel P54C-200MHz.



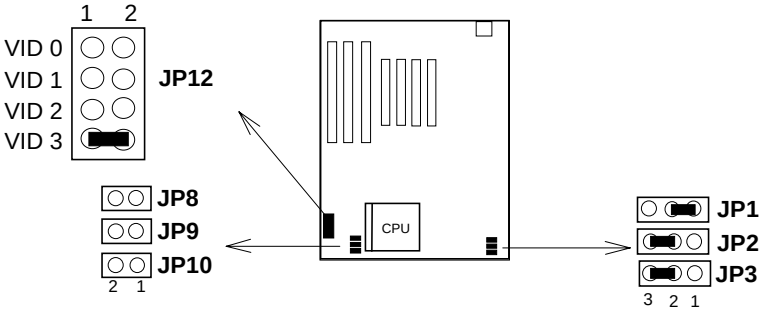
(9) Intel P55C (MMX) -166MHz.



(10) Intel P55C (MMX) -200MHz.

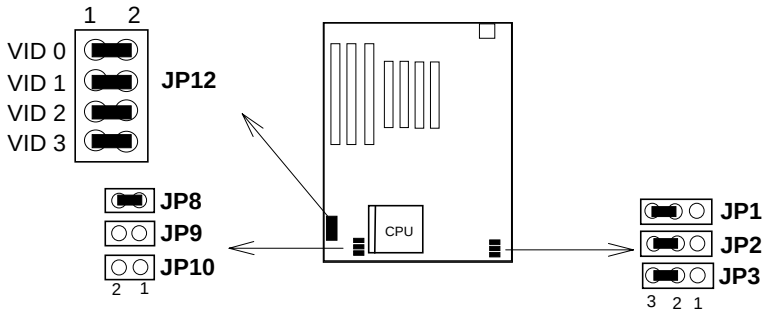


(11) Intel P55C (MMX) -233MHz.

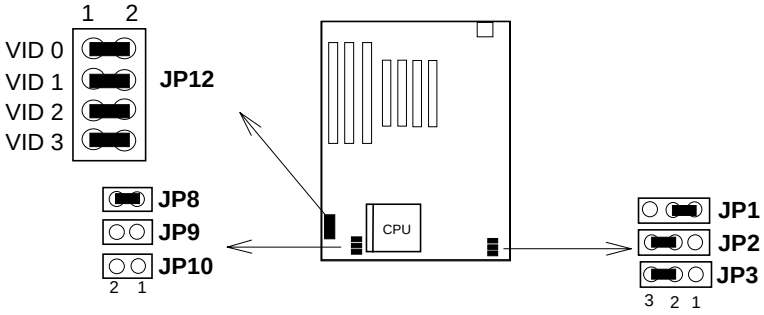


(b) Cyrix 6x86, IBM 6x86 CPU.

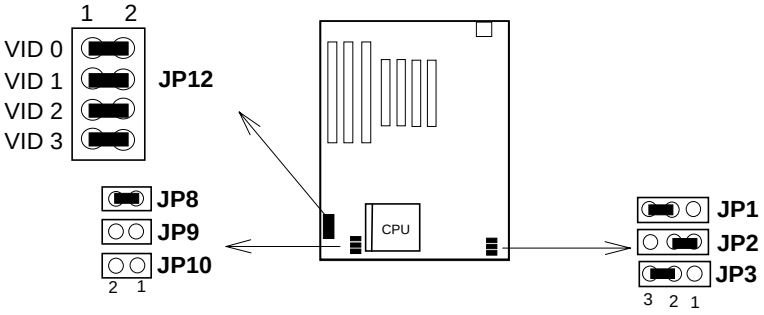
(1) 6x86 - PR150+



(2) 6x86 - PR166+

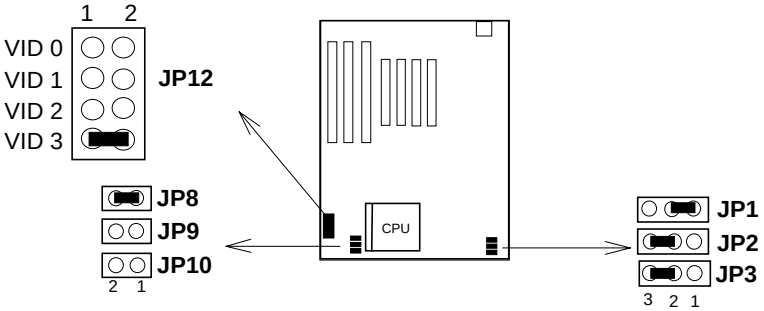


(3) 6x86 - PR200+



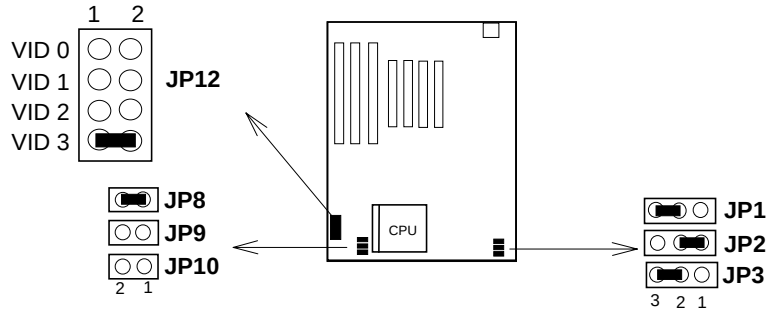
(c) Cyrix 6x86L & 6x86MX (M2), IBM 6x86L& 6x86MX (M2).

(1) 6x86L - PR166.

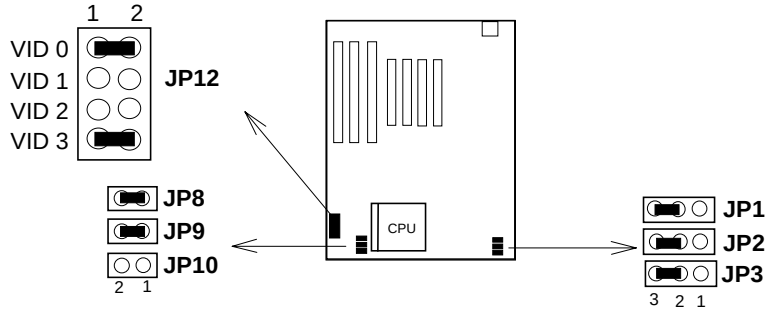


【2】

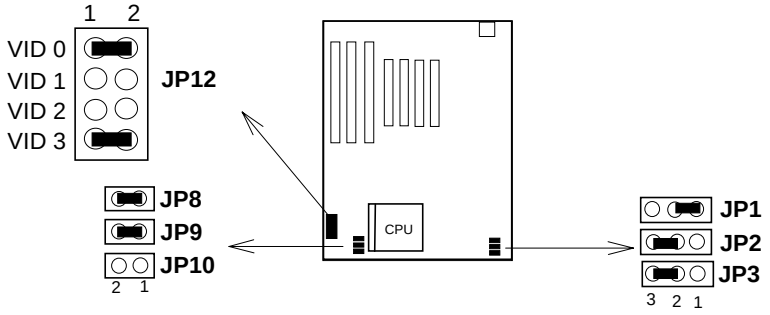
(2) 6x86L - PR200.



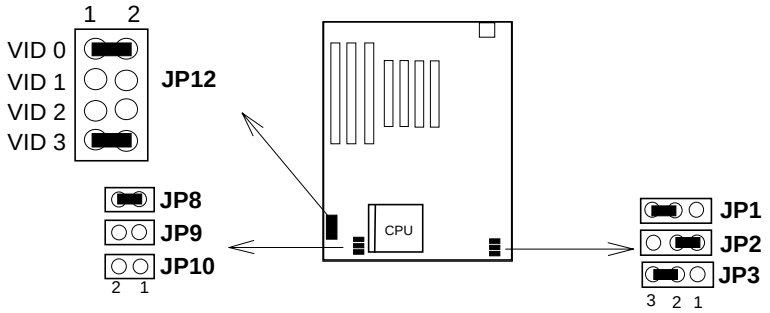
(3) 6x86MX - PR166.



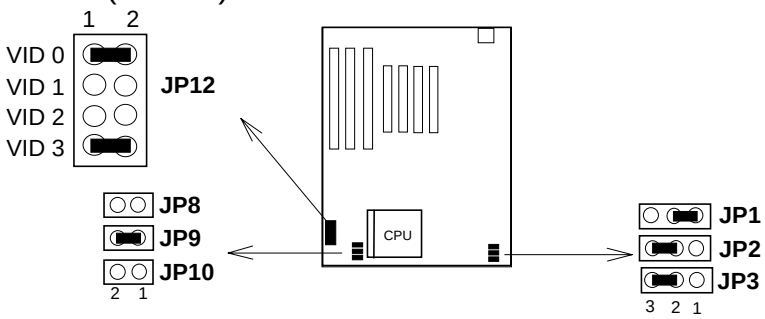
(4) 6x86MX - PR200.(66MHz)



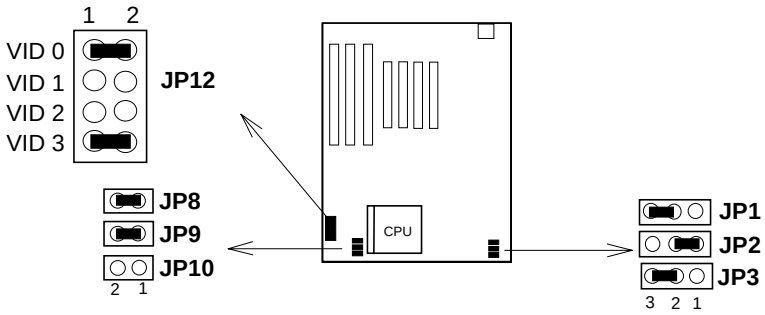
(5) 6x86MX - PR200.(75MHz)



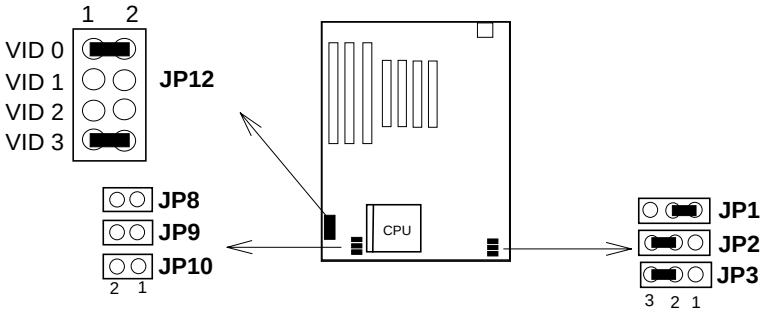
(6) 6x86MX - PR233 (66MHz)



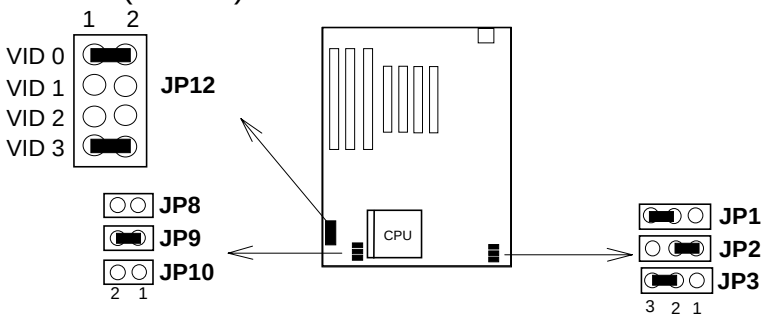
(7) 6x86MX - PR233 (75MHz).



(8) 6x86MX - PR266 (66MHz).

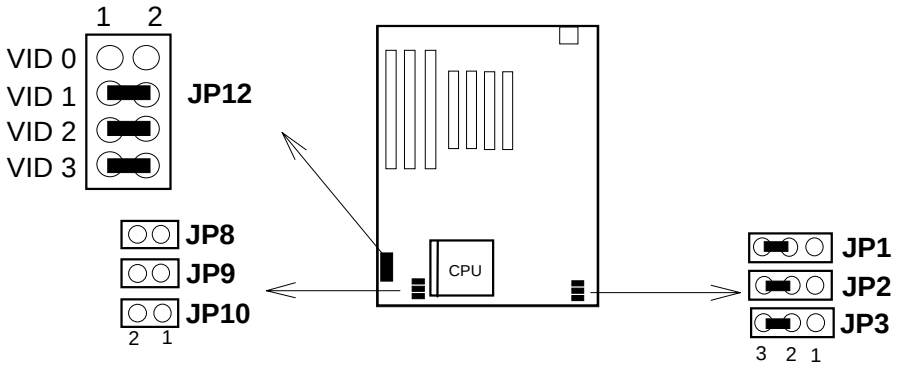


(9) 6x86MX - PR266 (75MHz).

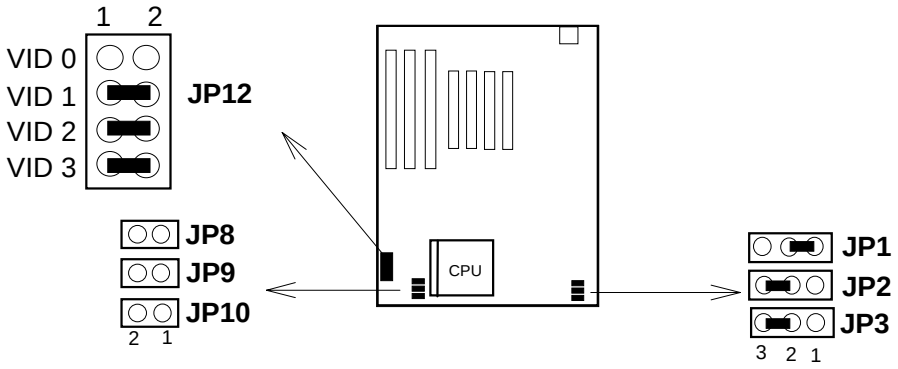


(d) AMD 5k86 & K6 CPU.

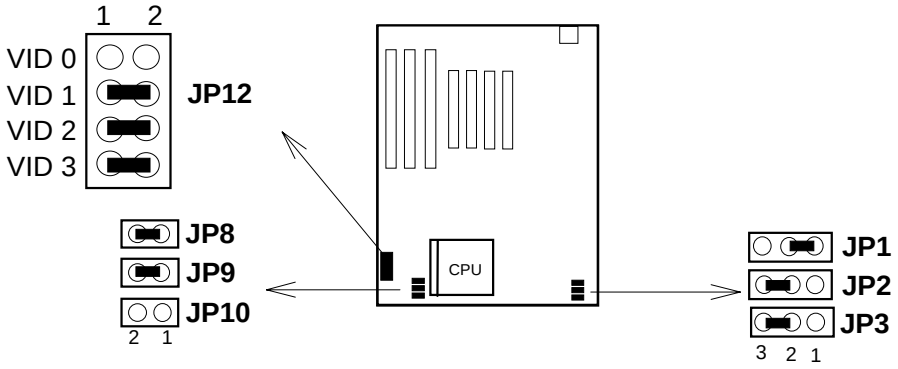
(1) AMD K5 - P90.



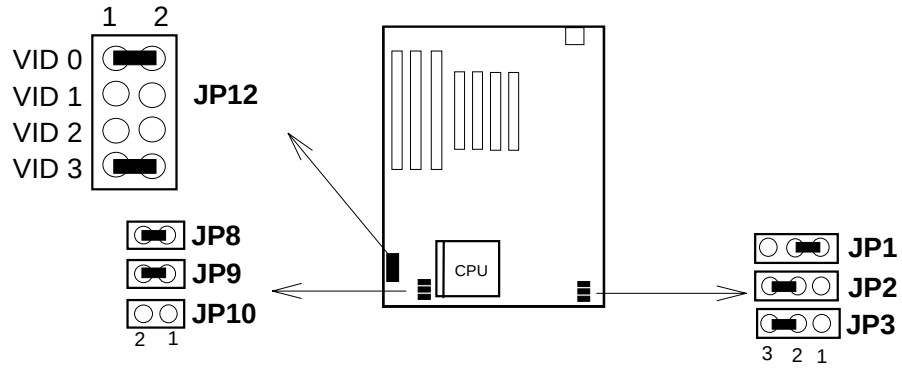
(2) AMD K5 - P100.



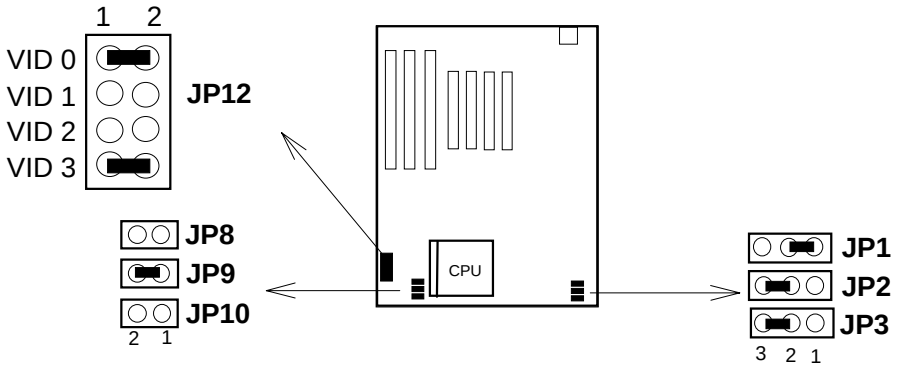
(3) AMD K5 - P166.



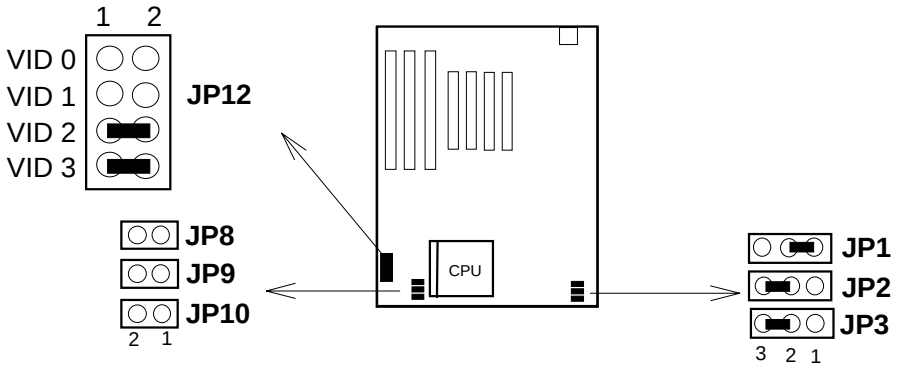
(4) AMD K6 - P166.



(5) AMD K6 - P200.



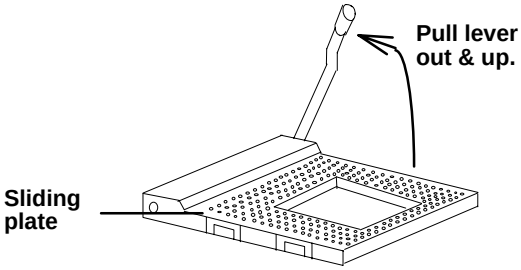
(6) AMD K6 - P233.



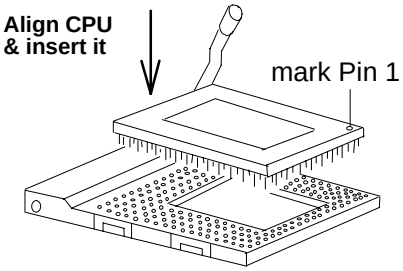
2.3.5. Installing a CPU in the ZIF Socket

The Intel Socket 7 incorporated in the mainboard specifications, is specially designed for the Pentium processor. While inserting the Pentium processor onto Socket 7, certain precautionary steps must be followed. The following diagrams of demonstration and explanation are worth of your note.

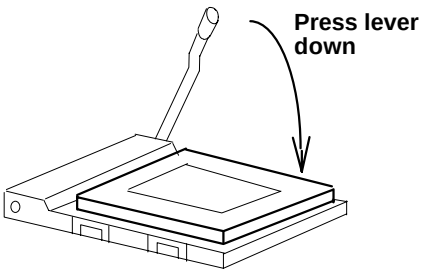
1. Make sure the ZIF socket level is up. To raise the lever, pull it out to the side a little and raise it as far as it will go. Pin 1 is at the arm corner.



2. Align the CPU and socket pin 1 corners. match the processor corner containing the blunt edge and the white dot to the socket corner with the distinctive pin arrangement. The pins on the bottom should align with the inner 3 rings of holes in the socket, then place the CPU in the socket. It should insert easily. If it doesn't, pull the level up a little more.



3. Press the lever down. The plate will slide forward. You will feel some resistance as the pressure starts to secure the CPU in the socket. When the CPU is installed, the lever should snap into place at the side of the socket



2.4 Upgrading System Memory

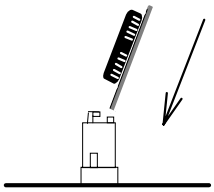
Upgrading System Memory, And Setting JP1.

The R581A mainboard can use up to three-168pin DIMM sockets(DIM 1, DIM 2, DIM3), and two-72pin SIMM sockets (SIM 1, SIM 2). Upgradable from 4MB to 768MB.

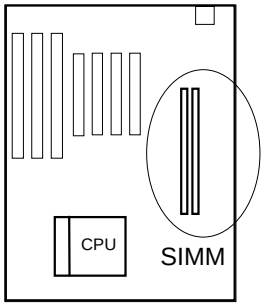
* The DIMM Sockets and SIMM Sockets can not used at a same time, except when you used the +5V EDO or FP DIMM Module.

2.4.1 Installing a SIMM Module

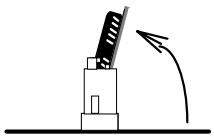
A.



Insert the SIMM into the socket at an angle.

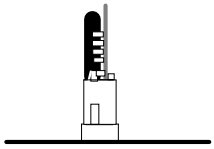


B.



Press it forward onto the positioning pins.

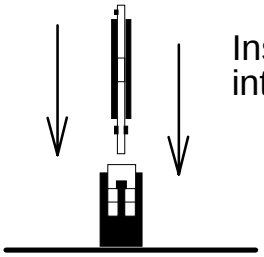
C.

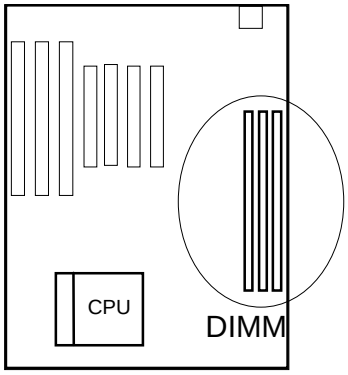


The retaining clips should fit over the edge and hold the SIMM in place.

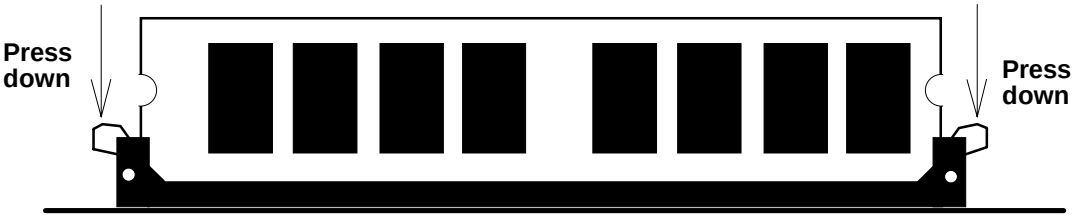
2.4.2. Installing a DIMM Module

A. Insert the DIMM module into the socket at an angle.



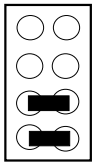
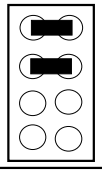


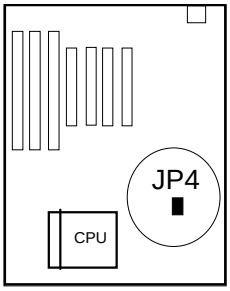
B. Put out the DIMM module from the DIMM socket.



2.4.3. DIMM Voltage Select : JP4

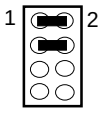
The DIMM socket voltage must be set correctly to either 3.3v or 5v, depending on the voltage of the DRAM DIMM Module or SDRAM DIMM Module used. All SDRAM DIMM Modules are 3.3v and all Fast Page Mode (FPM) DIMM Modules are 5v. Extended Data Mode (EDO) DIMM Modules come in both 3.3v and 5v, so when using both FPM DIMM Module and EDO DIMM Module in the system, only 5v EDO DIMM Module can be used.

DIMM Type	JP4 Setting
3.3v DIMM	
5v DIMM	

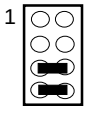


2.4.4. Memory Module Installing Table

A. For EDO and FPM SIMM or DIMM Module.
The DIMM sockets (DIM 1, DIM 2, DIM 3) can be used either :
Mode 1: +5V FPM(Fast Page Mode) or +5V EDO (Extended Data Mode) SIMM Module or DIMM Module. (FPM and EDO SIMM Module or DIMM Module can be used concurrently.)

Bank 3 SIM 1 & SIM 2	**Bank 1 DIM 1**	**Bank 2 DIM 2**	**Bank 3 DIM 3**	**JP4 Setting**
4MB or 8MB or 16MB or 32MB	X	X	X	
4MB or 8MB or 16MB or 32MB	8MB or 16MB or 32MB	X	X	
4MB or 8MB or 16MB or 32MB	X	8MB or 16MB or 32MB	X	
4MB or 8MB or 16MB or 32MB	8MB or 16MB or 32MB	8MB or 16MB or 32MB	X	
X	X	X	8MB or 16MB or 32MB	
X	8MB or 16MB or 32MB	X	8MB or 16MB or 32MB	
X	X	8MB or 16MB or 32MB	8MB or 16MB or 32MB	
X	8MB or 16MB or 32MB	8MB or 16MB or 32MB	8MB or 16MB or 32MB	

Mode 2: +3.3V EDO (Extended Data Mode) DIMM Module.

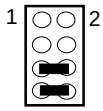
Bank 3 SIM 1 & SIM 2	**Bank 1 DIM 1**	**Bank 2 DIM 2**	**Bank 3 DIM 3**	**JP4 Setting**
X	8MB / 16MB / 32MB / 64MB	X	X	
X	8MB / 16MB / 32MB / 64MB	8MB / 16MB / 32MB / 64MB	X	
X	8MB / 16MB / 32MB / 64MB	X	8MB / 16MB / 32MB / 64MB	
X	8MB / 16MB / 32MB / 64MB	8MB / 16MB / 32MB / 64MB	8MB / 16MB / 32MB / 64MB	

B. For SDRAM DIMM Module.

If Synchronous DRAM Mode(SDRAM) DIMM Module is used, however, only SDRAM DIMM Module can be used in any of DIMM sockets (DIM 1,

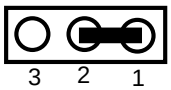
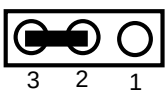
DIM 2, DIM 3).

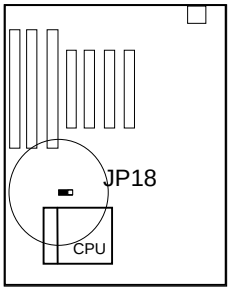
Mode 3: +3.3V SDRAM DIMM Module.

Bank 3 SIM 1 & SIM 2	Bank 1 DIM 1	Bank 2 DIM 2	Bank 3 DIM 3	JP4 Setting
X	8MB / 16MB / 32MB / 64MB	X	X	
X	8MB / 16MB / 32MB / 64MB	8MB / 16MB / 32MB / 64MB	X	
X	8MB / 16MB / 32MB / 64MB	X	8MB / 16MB / 32MB / 64MB	
X	8MB / 16MB / 32MB / 64MB	8MB / 16MB / 32MB / 64MB	8MB / 16MB / 32MB / 64MB	

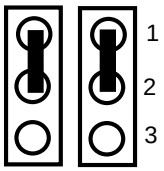
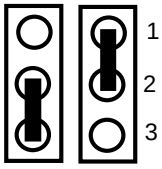
2.5 CMOS Clear Jumper: JP18

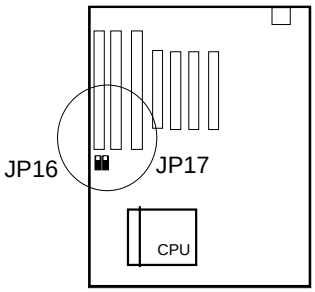
Clear the CMOS memory by momentarily shorting the Jumper 2-3 pin, then Open the Jumper to retain new setting. (Normal Operation is 1-2 Close)

Function	JP18 Setting
(a) Normal	 (Default)
(b) Clear CMOS	



2.6 Flash EPROM Selector : *JP16 , JP17.* (Factory setting only)

Flash ROM Type	Jumper Setting
(a) 1M/12V Flash ROM	JP16 JP17 
(b) 1M/5V Flash ROM	JP16 JP17 



How to Update BIOS (Flash ROM)

1. Copy the Flash Utility to a bootable diskette.
   AWDFLASH.EXE : for AWARD BIOS.
   AMIFLASH.COM : for AMI BIOS.

2. Copy the new BIOS file to the diskette.
   ＊.BIN : is AWARD BIOS.
   ＊.ROM : is AMI BIOS.

3. Turn the system power off and make sure that the JP16 & JP17 are set to 1M/5V Flash.

4. Turn the system on, Boot from drive A: and run the Flash utility.

5. Follow the prompt and input the file name.

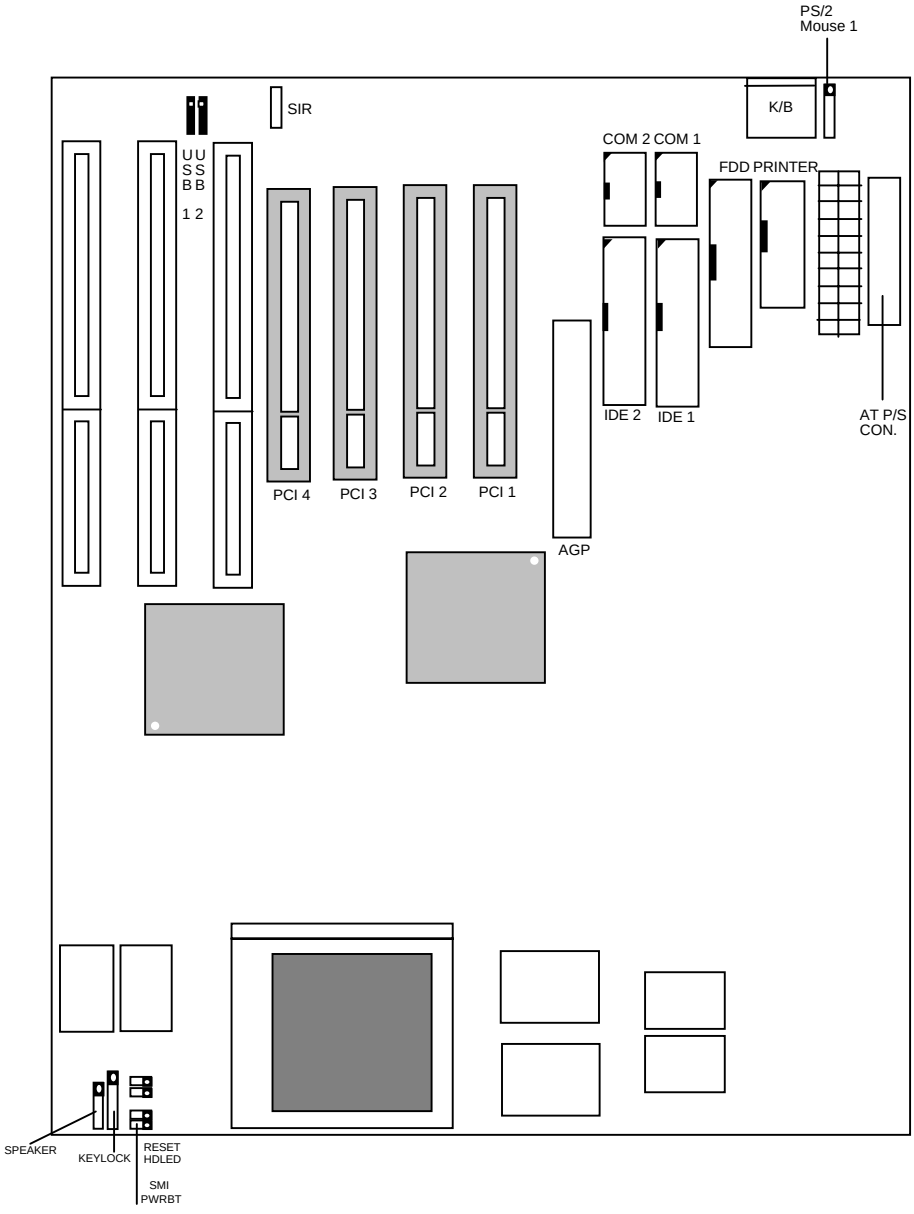
6. Save the old BIOS and when prompt to program hit " Y ".

7. After the BIOS is Flash, turn off the system and clear the CMOS.

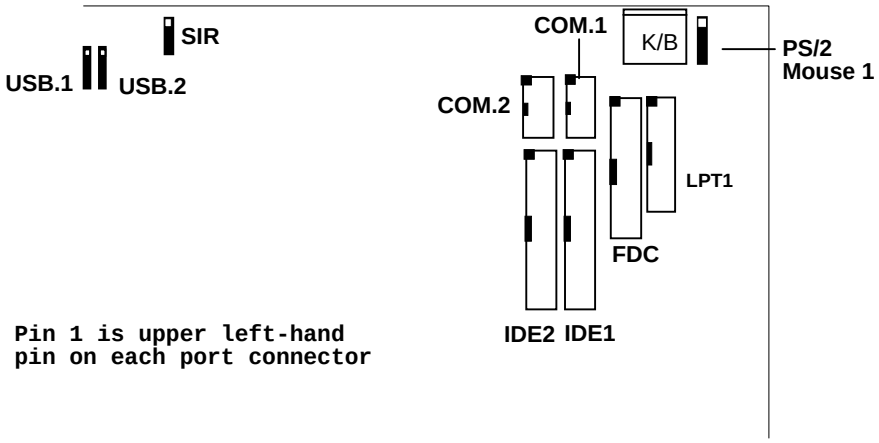
8. Set the COMS Jumper (JP18) to default and power on.

2.7 Connectors

The Connectors are made of the same component as the jumper switchs. There are connectors for the switchs and indicator lights from the system case. There are also connectors for the on-board I/O port and the leads from a system power supply.



2.7.1. I/O Ports .



When you connect a ribbon cable to any of these I/O connectors, you must orient the cable connector so that the Pin 1 edge of the cable is at the Pin 1 end of the on-board connector.

The pin 1 edge of the ribbon cable is colored to indentify it.

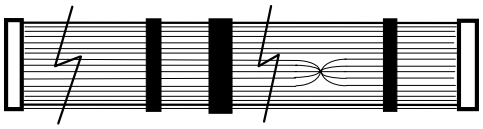
Port & Controller Cables

The mainboard comes with the following cables:

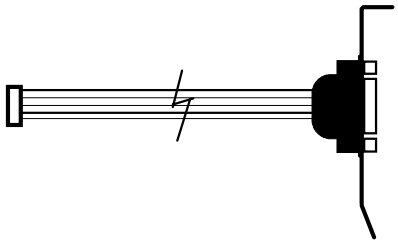
* 1 serial port and 1 parallel port ribbon cables attached to one mounting bracket.
* 1 serial port ribbon cable with mounting bracket.
* 1 IDE ribbon connector cables.
* 1 floppy disk drive ribbon connector cable.
* 1 PS/2 Mouse ribbon cable with mounting bracket.

Port & Controller Cables

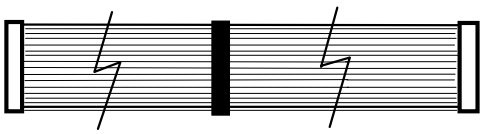
(1) Floppy Drive ribbon cable



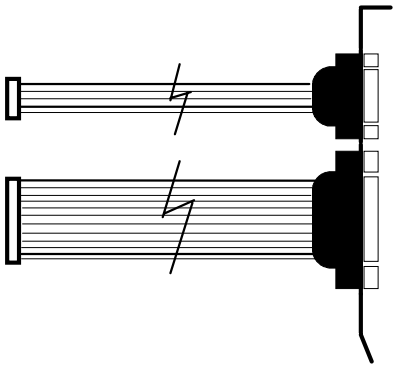
(2) Serial ribbon cable



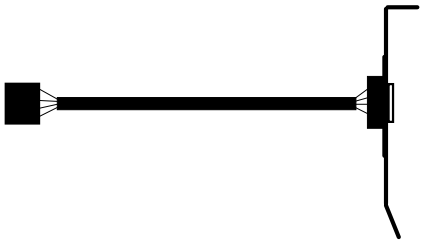
(3) IDE ribbon cable



(4) Serial & Parallel ribbon cable



(5) PS/2 Mouse ribbon cabl



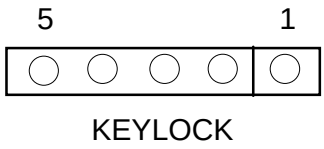
2.7.2. External Connections

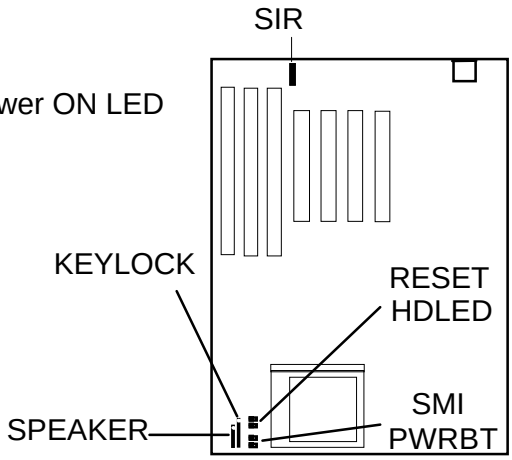
Connectors are used to link the system board with other parts of the system, including the keyboard, the power supply, and the various controllers on the front panel of the system case. When connecting connect-wires to the connectors, you should remember that some of them must be aligned in a specific way in order to have proper functions.

☐ **Keyboard Lock Header** (KEYLOCK)

Connector for both a case-mounted lock and a Power-On LED.

Pin	Function
1	+ 5v DC
2	No Connect
3	Ground
4	Keylock
5	Ground

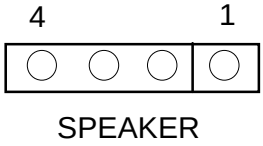




☐ **Speaker Header** (SPEAKER)

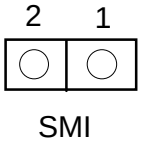
Connector for the lead from a speaker mounted inside the system case.

Pin	Function
1	+ 5v DC
2	Ground
3	No Connect
4	Data



☐ **SMI Header** (SMI)

Connector for the lead from a SMI momently switch mounten on the System case. When you press the momently switch first time, the system will go into the Suspend mode, after you can press the second time or press any key on the key board, then the system will back to normal mode.



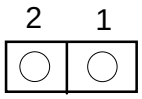
☐ **Reset Switch Header**

Connector for the lead from a Reset switch mounted on the system case.

☐ **IDE Activity LED Header** (HD LED)

Connector for IDE activity LED.

Pin	Function
1	LED anode (+)
2	LED cathode (-)

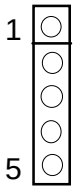


HD LED

☐ **Infrared Connector** (SIR)

If you set the BIOS's item "IR Function" to "HP SIR" or "ASK IR", the COM2 port will be switched to support IR function.

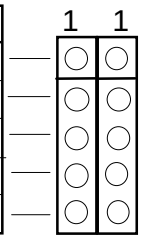
Pin	Function
1	+ 5v DC
2	Fir-con
3	Ir - Rx
4	Ground
5	Ir - Tx



☐ **USB (Universal Serial Bus) Connector** (USB1, USB2)

USB is an open industry standard, providing a simple and inexpensive way to connect up to 125 devices to a single computer port. Keyboards, Mouse tablets, digitizers, scanners, bar-code readers, modems, printers and many more can all run at the same time. USB is a dynamically reconfigurable serial bus with an elementary data rate of 12Mbps, based on off the shelf, low cost micro-controller technology. Its modular layered software protocol supports sophisticated devices and application programs. This board contains a USB Host controller and includes the root hub with two USB ports (meet USB Rev 1.0 spec.), which permits the connection of two USB peripherals or hub devices directly.

Pin Function	USB 1
SBV0	1
-SBD0	2
+SBD0	3
SBG0	4
Ground	5



USB 2	Pin Function
1	SBV1
2	-SBD1
3	+SBD1
4	SBG1
5	Ground

Now under testing of compatibility with different peripherals.

☐ **PS/2 Mouse Header** (Mouse)

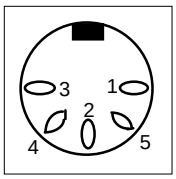
A PS/2 mouse adapter with bracket is optional. You can connect it with the Mouse header directly.

Data
N.C.
Ground
Vcc
Clock
N.C.

If a PS/2 Mouse is used, you should enable PS/2 function from BIOS, then BIOS will assign IRQ12 to PS/2 Mouse. Otherwise, the IRQ12 will be assigned to other adapters (Disable PS/2 Mouse function in BIOS)

☐ **Keyboard Connector** (KB)

Pin	Definition
1	Keyboard Clock
2	Keyboard Data
3	No Connect
4	Ground
5	+ 5v DC



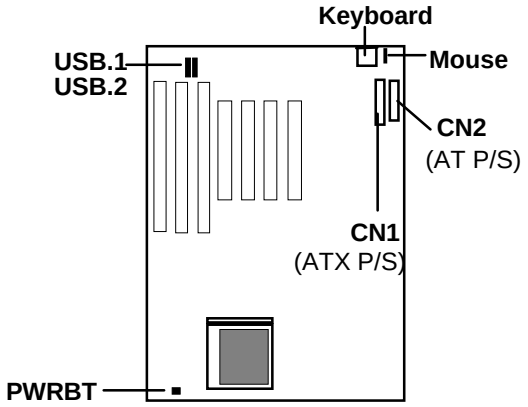
☐ **ATX (CN1) or AT (CN 2) Power Supply Connector:**

This main board supports AT/ATX power supply connector, but please kindly note that you only can use one of them, you can't use both of AT and ATX power supply connector at the same time.
The main board requires a power supply with 200W at least. While installing the board, the power supply connector is usually the last one to be connected. Before connected to power supply, make sure it is not connected to power source.
Most ATX power supplies have one set of 20-wire connectors (AT power supplies have two set of six-wire connector). Plug the AT or ATX connectors onto the board connector (for ATX is CN 1, AT is CN2).

For ATX Power Supply : (Please see the Appendix)

CN1

+12V	10	20	+5V
STB +5V	9	19	+5V
Power GOOD	8	18	-5V
Ground	7	17	Ground
+5V	6	16	Ground
Ground	5	15	Ground
+5V	4	14	Power ON Switch
Ground	3	13	Ground
N.C.	2	12	-12V
N.C.	1	11	N.C.



After the ATX Power was plug into CN1 & System was assemble O.K. Then you must use the momently switch to plug in the PWRBT connector, that's you can use the momently switch to turn ON/OFF the system power.

For AT Power Supply (CN2)

CN2

		Wire Color
6	+5V	Red
5	+5V	Red
4	+5V	Red
3	-5V	White
2	Ground	Black
1	Ground	Black
6	Ground	Black
5	Ground	Black
4	-12V	Blue
3	+12V	Yellow
2	+5V	Red
1	Power GOOD	Orange

Power Supply requirement :

Output voltage	Regulation tolerance
+5V dc	+– 5%
- 5V dc	+– 10%
+12X dc	+– 5%
- 12V dc	+– 10%

3. BIOS Setup

The mainboard's BIOS setup program is the ROM PCI/ISA BIOS from Award Software Inc. Enter the Award BIOS program's Main Menu as follows:

1. Turn on or reboot the system. After a series of diagnostic checks, you are asked to press DEL to enter Setup.

2. Press the <DEL> key to enter the Award BIOS program and the main screen appear:

ROM PCI/ISA BIOS (2A5IKR09)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	PASSWORD SETTING
BIOS FEATURES SETUP	IDE HDD AUTO DETECTION
CHIPSET FEATURES SETUP	HDD LOW LEVEL FORMAT
POWER MANAGEMENT SETUP	SAVE & EXIT SETUP
PNP / PCI CONFIGURATION	EXIT WITHOUT SAVING
INTEGATED PERIPHERALS	
LOAD SETUP DEFAULTS	
Esc: Quit	↑↓→← : Select Item
F10: Save & Exit Setup	(Shift)F2: Change Color
Onboard I/O, IRQ,	DMA Assignment...

3. Chose an option and press <Enter>. Modify the system parameters to reflect the options installed in the system. (See the following sections.)

4. Press <ESC> at anytime to return to the Main Menu.

5. In the Main Menu, choose "SAVE AND EXIT SETUP" to save your changes and reboot the system. Choosing "EXIT WITHOUT SAVING" ignores your changes and exits the program.

The Main Menu options of the Award BIOS are described in the sections that follow.

3.1 Standard CMOS Setup

Run the Standard CMOS Setup as follows.

1. Choose "STANDARD CMOS SETUP" from the Main Menu. A screen appears.

ROM PCI/ISA BIOS (2A5IKR09)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC

Date (mm:dd:yy) : Tue, Aug.12 1997
Time (hh:mm:ss) : 7:30:33

HARD DISK	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.
Drive B: None

Video : EGA/VGA
Halt On: All Errors

Base	Memory :	640K
Extended	Memory :	31744K
Other	Memory :	384K
Total	Memory	32768K

ESC:Quit ↑↓→← :Select Item PU/PD/+/- :Modify
F11:Help (Shift)F2 :Change Color

2. Use arrow keys to move between items and select values. Modify selected fields using PgUg/PgDn/+/- keys. Some fields let you enter values directly.

Date (mm/dd/yy) Type the current date.

Time (hh/mm/ss) Type the current time.

Primary (Secondary) Master & Slave Type 47 is user definable. If a hard disk is not installed choose "None".

Drive A & B Choose
360K, 5.25 in
720K, 3.5 in
1.44M, 3.5 in
2.88M, 3.5 in
None

Video Choose
VGA/EGA (Default),
CGA 40
CGA 80
MONO

3. When you finish, press the <ESC> key to return to the Main Menu.

3.2 BIOS Features Setup

Run the BIOS Features Setup as follows.

1. Choose "BIOS FEATURES SETUP" from the Main Menu and a screen with a list of items appears. (The screen below shows the BIOS default settings.)

ROM PCI/ISA BIOS (2A5IK09)
BIOS FEATURES SETUP
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	: Enabled	D0000-C#FFF Shadow	: Disabled
Boot Sequence	: C,A,SCSI	D4000-C7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000-CBFFF Shadow	: Disabled
Boot Up Floppy Seek	: Enabled	DC000-CFFFF Shadow	: Disabled
Boot Up Numlock Status	: On		
Memory Parity Check	: Disable		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay (Msec)	: 250		
Security Option	: Setup		
PS/2 mouse function control	: Enabled		
PCI/VGA Palette Snoop	: Disabled	ESC: Quit	↑↓→← : Select Item
Assign IRQ For VGA	: Enabled	F1 : Help	PU/PD/+/- : Modify
OS Select For DRAM > 64MB	: Non-OS2	F5 : Old Values	(Shift)F2 : Color
Report No FDD For WIN 95	: No	F7 : Load Setup Defaults	

2. Use the arrow keys to move between items and to select values. Modify the selected fields using the PgUg/PgDn/+/- keys. <F> keys are explained below:

<F1>: "Help" gives options available for each item.

Shift<F2>: Change color.

<F5>: Get the old values. These values are the values with which the user stanted the current session.

<F6>: Load all options with the BIOS Setup default values.

<F7>: Load all options with the Power-On default values.

【3】

A short description of screen items follows:

CPU Internal Cache	This option enables/desables the CPU's internal cache. (The Default setting is Enabled.)
External Cache	This option enables/disables the external cache memory. (The Default setting is Enabled.)
Quick Power On Self Test	Enabled provides a Fast POST at boot-up.
Boot Sequence	The default setting attempts to first boot from drive C:then from Floppy drive A: and then from SCSI. other boot sequence are A, C, SCSI -- C,CDROM, A -- CDROM, C,A --D, A, SCSI -- E, A, SCSI -- F, A, SCSI -- SCSI, A,C --SCSI, C, A -- C only.
Swap Floppy Drive	Enabled changes the sequence of the A: and B: drives. (The Default setting is Disabled.)
Boot Up Num Lock Status	Choose On or Off. On puts numeric keypad in Num Lock mode at boot-up. Off puts this keypad in arrow key mode at boot-up.
Typematic Rate Setting	Enable this option to adjust the keystroke repeat rate.
Typematic Rate (Chars/Sec)	Choose the rate a character keeps repeating.

Typematic Rate (Msec)	Choose how long after you press a key that a character begins repeating.
Security Option	Choose Setup or System. Use this feature to prevent unauthorized system boot-up or use of BIOS Setup. "System"-Each time the system is booted the password prompt appears. "Setup"- If a passward is set, The passeord Prompt only appears if you attempt to enter the Setup program.
PCI/VGA Palette Snoop	Enable : The color of the monitor may be incorrect if uses with MPEG card. Enable this option to make the monitor normal. Disable: Default setting.
OS Select for DRAM > 64MB	OS2: Choosing this when you are using OS/2 operation system. Non-OS/2: Choosing this when you are using no-OS/2 operation system.
Report No FDD for WIN 95	Select No(default) or Yes, Select Yes only when submitting your system to Microsoft Lab for testing.
Video or Adapter BIOS Shadow	BIOS shadow copies BIOS code from slower ROM to faster RAM. BIOS can then execute from RAM.16K segments can be shadowed from ROM to RAM. BIOS is shadowed in a 16K segment if it is enable and it has BIOS present.

3. After you have finished with the BIOS Features Setup program, Press the <ESC> key and follow the screen instructions to save or disregard your settings.

3.3 Chipset Features Setup

Run the BIOS Features Setup as follows.

1. Choose "BIOS FEATURES SETUP" from the Main Menu and a screen with a list of items appears. (The screen below shows the BIOS default settings.)

ROM PCI/ISA BIOS (2A5IKR09)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Auto Configuration	: Disabled	L2 Cache Update Mode	: Wr Back
Refresh Cycle Time	: 1040 Clocks	Linear Mode SRAM Support	: Disabled
RAS Pulse Width Refresh	: 7T	L2 (WB) Tag Bit Length	: 7bits
RAS Precharge Time	: 4T	SRAM Back-to-Back	: Enabled
RAS to CAS Delay	: 4T	AGP Aperture Size	: 64MB
CPU to PCI Post Write	: 4T	System BIOS Cacheable	: Enabled
ISA Bus Clock Frequency	: PCICLK/4	Video BIOS Cacheable	: Enabled
Starting Point of Paging	: 1T	Memory Hole at 15M-16M	: Disabled
NA# Enable	: Enabled		
SDRAM CAS Latency	: 2T		
SDRAM WR Retire Rate	: X-2-2-2		
SDRAM Wait State Control	: 1WS		
RAMW# Assertion Timing	: 3T		
CAS Precharge Time (EDO)	: 2T	ESC: Quit	↑ ↓ → ← : Select Item
CAS# Pulse Width for EDO	: 1T	F1 : Help	PU/PD/+/- : Modify
CAS Precharge Time (FP)	: 2T	F5 : Old Values	(Shift)F2 : Color
CAS# Pulse Width for FP	: 1T	F6 : Load BIOS Defaults	
Enhanced Memory Write	: Disabled	F7 : Load Setup Defaults	
Read Prefetch Memory RD	: Enabled		
CPU to PCI Burst Mem. WR	: Disabled		

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. It also coordinates communications between the conventional ISA bus and the PCI bus. It must be stated that these items should never need to be altered. The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered that data was being lost while using your system.

DRAM Settings

The first chipset settings deal with CPU access to dynamic random access memory (DRAM). The default timings have been carefully chosen and should only be altered if data is being lost. Such a scenario might well occur if your system had mixed speed DRAM chips installed so that greater delays may be required to preserve the integrity of the data held in the slower memory chips.

Auto Configuration

This item allows you selects pre-detemined optimal values of chipset parameters. When Disabled, chipset parameters revert to setup information stored in CMOS. Many fields in this screen are not available when Auto Configuration is Enabled.

The Choice: Enabled, Disabled.

Note: When this item is enabled, the pre-defined items will become SHOW-ONLY.

Refresh Cycle Time

Select the period required to refresh the DRAMs, according to DRAM specifications.

The choice: 1030 Clock, 1040 Clock.

RAS Pulse Width Refresh

Select the number of CPU clock cycles allotted for the RAS pulse refresh, according to DRAM specifications.

The choice: 4T, 5T, 6T, 7T.

RAS Precharge

The precharge time is the number of cycles it takes for the RAS to accumulate its charge before DRAM refresh. If insufficient time is allowed, refresh may be incomplete and the DRAM may fail to retain data.

The choice: 2T, 3T, 4T, 5T.

RAS to CAS Delay

When DRAM is refreshed, both rows and columns are addressed separately. This setup item allows you to determine the timing of the transition from RAS (row address strobe) to CAS (column address strobe).

The choice: 2T, 3T, 4T, 5T.

CPU PCI Post Write

Select enabled to use a fast buffer for posting writes to memory. Using a fast buffer releases the CPU before completion of a write cycle to DRAM.

The choice: 3T, 4T, Disabled.

ISA Bus Clock

The ISA bus clock speed is the speed at which the CPU communicates with the AT bus(expansion bus). The speed is measured as a fraction of PCICLKI, the timing signal of the PCI bus. Experiment with setting the bus timingto a lower speed (for example, from PCICLKI/3 to PCICLKI/4) if an installed expansion peripheral has performance problems.

The choice: 7.159MHz, PCICLK/3, PCICLK/4.

Starting Point of Paging

This value controls the start timing of memory paging operations.

The choice: 1T, 2T, 4T, 8T.

NA# Enable

Selecting Enabled permits pipelining, in which the chipset signals the CPU for a new memory address before all data transfers for the current cycle are complete, resulting in fasterperformance.

The choice: Enabled, Disabled.

SDRAM CAS Latency

When synchronous DRAM is installed, the number of cycles of CAS latency depends on the DRAM timing. Do not reset this field from the default value specified by the system designer.

The choice: 2T, 3T.

SDRAM WR Retire Rate

Select the correct timing for data transfers from the write buffer to memory, according to DRAM specifications.

The choice: X-2-2-2, X-1-1-1

SDRAM Wait State Control

Select the correct timing for data transfers from the write buffer to memory, according to DRAM specifications.

The choice: 0WS, 1WS.

RAMW# Assertion Timing

RAMW is an output signal to enable local memory writes. The system designer select Normal or Faster (by one timer tick) according to DRAM specifications.

The choice: 2T, 3T.

CAS Precharge Time (EDO)

Select the number of CPU clocks allocated for the CAS# signal to accumulate its charge before the EDO RAM is refreshed. If insufficient time is allowed, refresh may be incomplete and data lost.

The choice: 1T, 1T/2T, 2T.

CAS# Pulse Width for EDO

The system designer must set duration of a CAS signal pulse (in timer ticks).

The choice: 1T, 2T.

CAS Precharge Time (FP)

This item allows you to select CAS precharge time for FP RAM.

Choices are 1T, 1T/2T, 2T.

CAS# Pulse Width for FP

The system designer must set duration of a CAS signal pulse for FP RAM.

The choice: 1T, 2T.

Enhanced Memory Write

Select Enabled or Disabled for the Memory Write and Invalidate command on the PCI bus. This field must be Disabled if cache size is 512 KB and the tag address is 8 bits.

The choice: Enabled, Disabled.

Read Prefetch Memory RD

Chipset has a prefetch buffer. It will prefetch the DRAM data of next address in buffer. Then when next necessary hits this address, CPU can get the data from this buffer instead of DRAM. It will shorten this cycle time.

The choice: Enabled, Disabled.

CPU to PCI Burst Mem. WR

Select enabled permits PCI burst memory write cycles, for fasterperformance. When disabled, performance is slightly slower, but more reliable.

Choices are Enabled, Disabled.

L2 Cache Update Mode

L2 update mode determines how the CPU writes data to its external cache. Write-Through updates memory with data held in the cache whenever the CPU issues a write cycle. Write-Back updates memory only under certain conditions, such as read requests to the memory whose contents are currently in the cache. The CPU operates with fewer interruptions, increasing its efficiency, in Write-Back mode.

The choice: Wr Back, Wr Through.

Linear Mode SRAM Support

Select Enabled if your system contains a CPU that requires linear mode (e.g., Cyrix M1/M2 CPU).

The choice: Enabled, Disabled.

L2(WB) Tag Bit Length

The system uses tag bits to determine the status of data in the cache. Set this field to match the specifications(7 or 8 bits) of the system external cache.

The choice: 7bits, 8bits.

SRAM Back-to-Back

Selecting Enabled reduces the latency between 32-bit data transfers, so data is transfered in 64-bit bursts.

The choice: Enabled, Disabled.

AGP Aperture Size

Select the size of the Accelerated Graphics Port(AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. See www.agpforum.org for AGP information.

The choice: 4M, 8M, 16M, 32M, 64M, 128M, 256M.

System BIOS Cacheable

Selecting Enabled allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

The choice: Enabled, Disabled.

Video BIOS Cacheable

Selecting Enabled allows caching of the VGA BIOS ROM at C0000h-CFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

The choice: Enabled, Disabled.

Memory Hole at 15M-16M

You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements.

The choice: Enabled, Disabled.

3.4 Power Management Setup

The Power Management Setup allows you to configure you system to most effectively save energy while operating in a manner consistent with your own style of computer use.

ROM PCI/ISA BIOS (2A5IKR09)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

ACPI function : Enabled	VGA Activity : Enabled
Power Management : Disable	IRQ [3-7, 9-15], NMI : Enabled
PM Control by APM : Yes	IRQ 8 Break Suspend : Disabled
Video Off Option : Susp,Stby ->Off	Power Button Over Ride : Instant Of
Video Off Method : V/H SYNC+Blank	Ring Power Up Control : Enabled
Switch Function : Break/Wake	
Doze Speed (div by) : 2/8	KB Power ON Password : Disabled
Stdby Speed (div by) : 1/8	Power Up by Alarm : Enter
MODEM Use IRQ : 3	Month Alarm : NA
Hot Key Function As : Suspend	Day of Month Alarm : 2
	Week Alarm
** PM Timers **	*** SUN MON TUE WED THU FRI SAT ***
HDD Off After : Disable	Off Off Off Off Off Off Off
Doze Mode : Disable	Time (hh:mm:ss) Alarm : 0: 0: 0
Standby Mode : Disable	
Suspend Mode : Disable	ESC : Quit ↑↓→← : Select Item
** PM Events **	F1 : Help PU/PD/+/- : Modify
HDD Ports Activity : Enabled	F5 : Old Values (Shift) F2 : Color
COM Ports Activity : Enabled	F6 : Load BIOS Defaults
LPT Ports Activity : Enabled	F7 : Load Setup Defaults

Power Management

This option allows you to select the type (or degree) of power saving for Doze, Standby, and Suspend modes. See the section PM Timers for a brief description of each mode.

This table describes each power management mode:

Disable (default)	No power management. Disables four modes
Min. Power Saving	Minimum power management. Doze Mode=1 hr. Standby Mode =1 hr., Suspend Mode =1 hr., and HDD Power Down = 15 min.
Max. Power Saving	Maximum power management -- **ONLY AVAILABLE FOR SL CPU'S.** Doze Mode=1min., Standby Mode= 1min., Suspend Mode=1min., and HDD Power Down = 1min.
User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

PM Control by APM When enabled, an Advanced Power Management device will be activated to enhance to Max. Power Saving mode and stop the CPU internal clock. If Advance Power Management (APM) is installed on your system, selecting Yes gives better power savings.

If the Max. Power Saving is not enabled, this will be preset to No.

Video Off Option When enabled, this feature allows the VGA adapter to operate in a power saving mode.

Always On	Monitor will remain on during power saving modes.
Suspend -- > Off	Monitor blanked when the systems enters the Suspend mode.
Susp, Stby --> Off	Monitor blanked when the system enters either Suspend or Standby modes.
All Modes --> Off	Monitor blanked when the system enters any power saving mode.

Video Off Method This determines the manner in which the monitor is blanked.

V/H SYNC + Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
Blank Screen	This option only writes blanks to the video buffer.
DPMS	Select this option if your monitor supports the Display Power Management Signaling (DPMS) standard of the Video Electronics Standards to select video power management values.

Switch Function You can choose whether or not to permit your system to enter complete Suspend mode. Suspend mode offers greater power savings, with a correspondingly longer awakening period..

The choice: Break/Wake, Disabled.

Doze Speed (Div by) Sets the CPU's speed during Doze mode. The speed is reduced to a fraction of the CPU's normal speed. The divisors range from 1 to 8

The choice: 1~8.

Stdby Speed(Div by) Select a divisor to reduce the CPU speed during Standby mode to a fraction of the full CPU speed. The speed is reduced to a fraction of the CPU's normal speed. The divisors range from 1 to 8-0.

The choice: 1~8.

MODEM Use IRQ Name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system.

The choice: 3,4,5,7,9,10,11,NA.

Hot Key Function As Power Off: When you use ATX power, use hot key to power off computer.
Suspend : Use hot key enter the Suspend Mode.
(** Hot Key : Ctrl + Alt + ←Backspace)

The choice: Suspend, Power Off, Disabled.

PM Timers

The following four modes are Green PC power saving functions which are only user configurable when User Defined Power Management has been selected. See above for available selections.

HDD Off After By default, this item is Disabled, meaning that no matter the mode the rest of the system, the hard drive will remain ready. Otherwise, you have a range of choices from 1 to 15 minutes or Suspend. This means that you can elect to have your hard disk drive be turned off after a selected number of minutes or when the rest of the system goes into a Suspend mode.

Doze Mode When enabled and after the set time of system inactivity, the CPU clock will run at slower speed while all other devices still operate at full speed.

Standby Mode When enabled and after the set time of system inactivity, the fixed disk drive and the video would be shut off while all other devices still operate at full speed.

Suspend Mode When enabled and after the set time of system inactivity, all devices except the CPU will be shut off.

PM Events

You may disable activity monitoring of some common I/O events and interrupt requests so they do not wake up the system. The default wake-up event is keyboard activity.

HDD Ports Activity When set to On (default), any event occurring at a HDD (serial) port will awaken a system which has been powered down.

COM Ports Activity When set to On (default), any event occurring at a hard or floppy drive port will awaken a system which has been powered down.

LPT Ports Activity When set to On (default), any event occurring at a LPT (printer) port will awaken a system which has been powered down.

VGA Activity When set to On (default), any event occurring at VGA will awaken a sytem which has been powered down.

The following is a list of IRQ's, Interrupt ReQuests, which can be exempted much as the COM ports and LPT ports above can. When an I/O device wants to gain the attention of the operating system, it signals this by causing an IRQ to occur. When the operating system is ready to respond to the request, it interrupts itself and performs the service.

As above, the choices are On and Off.

When set On, activity will neither prevent the system from going into a power management mode nor awaken it.

- **IRQ [3-7, 9-15], NMI**

- **IRQ 8 Braek Suspend:** you can Enable or Disable monitoring of IRQ 8 (the Real Time Clock) so it does not awaken the system from Sspend mode.

Power Button Over Ride

When you select Enabled, pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has "hung."

The choice: Enabled, Disabled.

Ring Power Up Control

When you select Enabled, a signal from ring returns the system to Full On state.

The choice: Enabled, Disabled.

KB Power On Password	Get into the "Enter", then you have to key in your password, and it will request you to key in again. (It will "Disable", if your re-confirmed password is not correct or you just Enter directly.) Then, you have to save it. After that , under the power off condition, you can key in the password to power on directly. (When the electric power of public is not disappear, then the function will continue.) re-open the computer directly to key in the password.
Power Up by Alarm	When you select Enabled, the following fields appear. They let you set the alarm that returns the system to Full On state. The choice: Enabled, Disabled.
Month Alarm	Select a month (1-12) or NA if you want the alarm active during all month.
Day of Month Alarm	Select a date in the month. Select 0(zero) if you prefer to set a weekly alarm (below)
Week Alarm	Turn the alarm On and Off on specific days.
Time (hh:mm:ss) Alarm	Set the time you want the alarm to go off on the days when it's activated.

3.5 PnP/PCI Configuration Setup

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

ROM PCI/ISA BIOS (2A5IKR09)
PNP/PCI CONFIGURATION
AWARD SOFTWARE, INC.

Resources Controlled By : Manual	PCI IRQ Actived By : Level
Reset Configuration Data : Disabled	PCI IDE IRQ Map To : PCI-AUTO
	Primary IDE INT# : A
IRQ-3 assigned to : Legacy ISA	Secondary IDE INT# : B
IRQ-4 assigned to : Legacy ISA	
IRQ-5 assigned to : PCI/ISA PnP	
IRQ-7 assigned to : Legacy ISA	
IRQ-9 assigned to : PCI/ISA PnP	
IRQ-10 assigned to : PCI/ISA PnP	
IRQ-11 assigned to : PCI/ISA PnP	
IRQ-12 assigned to : PCI/ISA PnP	
IRQ-14 assigned to : Legacy ISA	
IRQ-15 assigned to : Legacy ISA	
DMA-0 assigned to : PCI/ISA PnP	
DMA-1 assigned to : PCI/ISA PnP	ESC : Quit ↑↓→← : Select Item
DMA-3 assigned to : PCI/ISA PnP	F1 : Help PU/PD/+/- : Modify
DMA-5 assigned to : PCI/ISA PnP	F5 : Old Values (Shift) F2 : Color
DMA-6 assigned to : PCI/ISA PnP	F6 : Load BIOS Defaults
DMA-7 assigned to : PCI/ISA PnP	F7 : Load Setup Defaults

PCI Slot Configuration

Resource controlled by

The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows®95.

The choice: Auto, Manual.

Reset Configuration Data

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system can not boot.

The Choice: Enabled, Disabled.

IRQ n Assigned to

When resources are controlled manually, assign each system interrupt as one of the following types, depending on the type of device using the interrupt:

Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1).

PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

The choice: Legacy ISA, PCI/ISA PnP.

DMA n Assigned to

When resources are controlled manually, assign each system DMA channel as one of the following types, depending on the type of device using the interrupt:

Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific DMA channel

PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

The choice: Legacy ISA, PCI/ISA PnP.

PCI IRQ Activated by

This sets the method by which the PCI bus recognizes that an IRQ service is being requested by a device. Under all circumstances, you should retain the default configuration unless advised otherwise by your system's manufacturer.

The choice: Level, Edge.

PCI IDE IRQ Map to This allows you to configure your system to the type of IDE disk controller in use. By default, Setup assumes that your controller is an ISA (Industry Standard Architecture)device rather than a PCI controller. The more apparent difference is the type of slot being used.

If you have equipped your system with a PCI controller, changing this allows you to specify which slot has the controller and which PCI interrupt (A, B, C or D) is associated with the connected hard drives.

Remember that this setting refers to the hard disk drive itself, rather than individual partitions. Since each IDE controller supports two separate hard drives, you can select the INT# for each. Again, you will note that the primary has a lower interrupt than the secondary as described in "Slot x Using INT#" above.

Selecting "PCI Auto" allows the system to automatically determine how your IDE disk system is configured.

3.6 Integrated Peripherals

The Integrated Peripherals option changes the values of the Chipset registers. These registers control system options in the computer.

Note: Change these settings only if you are familear with the Chipset.

Run the Integrated Peripherals as follows.

1. Choose "Integrated Peripherals" from the Main Menu and the following screen appears. (The screen below shows default settings.)

ROM PCI/ISA BIOS (2A5IKR09)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

Internal PCI/IDE : Both	Onboard Parallel Mode : ECP/EPP
IDE Primary Master PIO : Auto	ECP Mode Use DMA : 3
IDE Primary Slave PIO : Auto	Parallel Port EPP Type : EPP1.9
IDE Secondary Master PIO : Auto	PS/2 mouse function : Enabled
IDE Secondary Slave PIO : Auto	USB Controller : Enabled
Primary Master UltraDMA : Disabled	USB Keyboard support : Disabled
Primary Slave UltraDMA : Disabled	
Secondary Master UltraDMA : Disabled	
Secondary Slave UltraDMA : Disabled	
IDE Burst Mode : Disabled	
IDE Data Port Post Write : Disabled	
IDE HDD Block Mode : Disabled	
Onboard FDC Controller : Enabled	
Onboard Serial Port 1 : 3F8/IRQ4	
Onboard Serial Port 2 : 3F8/IRQ4	ESC : Quit ↑↓→← : Select Item
UART 2 Mode : Standard	F1 : Help PU/PD/+/- : Modify
IR Function Duplex : Full	F5 : Old Values (Shift) F2 : Color
RxD, TxD Active : Hi, Hi	F6 : Load BIOS Defaults
Onboard Parallel Port : 378/IRQ7	F7 : Load Setup Defaults

2. Use the arrow keys to move between items and select values. Modify selected fields using the PgUp/PgDn/+/- keys.

A short description of screen items follows:

Internal PCI/IDE This chipset contains a internal PCI IDE interface with support for two IDE channels.

The choice: Primary, Secondary, Both.

IDE Primary/ Secondary/Master/ Slave PIO

The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

The choice: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

IDE Primary/ Secondary/Master/ Slave UDMA

UDMA (Ultra DMA) is a DMA data transfer protocol that utilizes ATA commands and the ATA bus to allow DMA commands to transfer data at a maximum burst rate of 33 MB/s. When you select Auto in the four IDE devices that the internal PCI IDE interface supports), the system automatically determines the optimal data transfer rate for each IDE device.

The choice: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

IDE Burst Mode

Selecting Enabled reduces latency between each drive read/write cycle, but may cause instability in IDE subsystems that cannot support such fast performance. If you are getting disk drive errors, try setting this value to Disabled. This field does not appear when the Internal PCI/IDE field, above, is Disabled.

The choice: Enabled, Disabled.

IDE Data Port Post Write

Selecting Enabled speeds up processing of drive reads and writes, but may cause instability in IDE subsystems that cannot support such fast performance. If you are getting disk drive errors, try setting this value to Disabled.

The choice: Enabled, Disabled.

IDE HDD Block Mode

The chipset contains a PCI IDE interface with support for two IDE channels. Select Enabled to activate the primary and/or secondary IDE interface. Select Disabled to deactivate this interface, if you install a primary and/or secondary add-in IDE interface IDE interface.

Enabled	Secondary HDD controller used
Disabled	Secondary HDD controller not used

Onboard FDD Controller

This should be enabled if your system has a floppy disk drive (FDD) installed on the system board and you wish to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature.

The choice: Enabled, Disabled.

Onboard Serial Port1/Port2

This item allows you to determine access onboard serial port 1/port 2 controller with which I/O address.

The choice: 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4,2E8/IRQ3, Disabled, Auto.

UART 2 Mode

This item allows you to determine which Infra Red (IR) function of onboard I/O chip.

The choice: Standard, ASKIR, HPSIR.

IR Function Duplex

This item allows you to select the IR function when your select the UART 2 Mode is ASKIR.

The choice: Half, Full.

RxD, TxD Active

This item allows you to determine the active of RxD, TxD.

The choice: "Hi,Hi", "Lo,Lo", "Lo,Hi", "Hi,Lo".

Onboard Parallel Port	This item allows you to determine access onboard parallel port controller with which I/O address. The choice: 378H/IRQ7, 278H/IRQ5, 3BCH/IRQ7, Disabled.
Onboard Parallel Mode	Select an operating mode for the onboard parallel (printer) port. Normal EPP (Extended Parallel Port) ECP (Extended Capabilities Port) CEP+EPP PC AT parallel port Bidirectional port Fast, buffered port Fast, buffered, bidirectional port. Select Normal unless you are certain your hardware and software both support EPP or ECP mode. The choice: SPP, ECP/EPP, ECP, EPP/SPP.
ECP Mode Use DMA	Select DMA channel for the parallel port for use during ECP mode. The choice: 3, 1.
Parallel Port EPP Type	Select EPP port type 1.7 or 1.9 The choice: EPP1.9, EPP1.7.
PS/2 Mouse function	If your system has a PS/2 mouse port and you install a serial pointing device, select Disabled. The choice: Enabled, Disabled.
USB Controller	Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals. The choice: Enabled, Disabled.

3. After you have finished with the Integrated Peripherals, press the <ESC> key and follow the screen instructions to save or disregard your settings.

3.7 Load Setup Detaults

This item loads the system values you have pereviously saved. Choose this item and the following message appears:

"Load SETUP Defaults (Y/N)? N"

To use the SETUP defaults, change the prompt to "Y" and press <Enter>.

This item is recommended if you need to reset the system setup.

3.8 Password Setting

This Main Menu item lets you configure the system so that a password is required every time the system boots or an attempt is made to enter the Setup program. Change the password as follows:

1. Choose "PASSWORD SETTING" in the Main Menu and Press <Enter>.
   The following message appears:

"Enter Password:"

2. Enter a password and press <Enter>.
   (If you do not wish to use the password function, you can just press <Enter>
   and a "Password disabled" message appears.)

3. After you enter your password, the following message appears prompting you to confirm the new password:

"Confirm Password"

4. Re-enter your password and then Press <ESC> to exit to the Main Menu.

Important: If you forget or lose the password, the only way to access the system is to set jumper JP32 to clear the CMOS RAM.
All setup information is lost and you must run the BIOS setup program again.

3.9 IDE HDD Auto Detection

This Main Menu item automatically detects the hard disk type and configures the STANDARD CMOS SETUP accordingly.

Note: This function is only valid for **IDE** hard disks.